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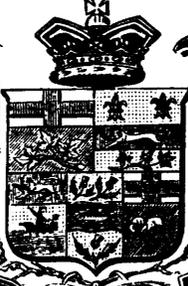
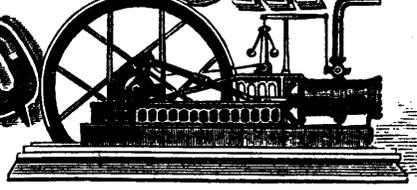


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| Abell, Francis H. Coffee pot | 42,577 | Angell, Edward F., et al. Burner for gas | | 42,447 |
| Abell, John. Steam engine | 43,664 | Angerer, Victor. Actuating device for car brakes | | 43,141 |
| Abraham, John H. Cigar bunching machine | 44,973 | Angus, Robert. Interchangeable lining for journal bearings | | 42,678 |
| Acme Endgate Manufacturing Company. Endgate for wagons | 44,854 | Anschutz, Ottomar. Apparatus for exhibiting optical illusions | | 43,499 |
| Acosta, John L. Fibre preparing machine | 42,432 | Anthony, Mark, et al. Means for protecting the bungs of barrels | | 43,410 |
| Actien-Maschinenbau-Anstalt Vormals Venuleth und Ellenberger. Method of drying vegetable residue | 43,886 | Anvil, John P. Chair | | 41,762 |
| Adamkiewicz, Albert. Medicine for cancerous sores | 41,511 | Armitage, John L. Painting machine for fabric | | 44,721 |
| Adams, Abe L. Auger bit | 42,740 | Armstrong, John A., et al. Holder and cutter for paper rolls | | 43,412 |
| Adams, Abraham L. Auger | 44,285 | Arnold, Henry J., et al. Car coupler | | 42,885 |
| Adams, Charles F., et al. Register for checks and cash | 42,081 | Arnold, Norman C., et al. Grate for stoves | | 43,024 |
| Adams, George F., et al. Signal for railways | 42,856 | Arnold, Phineas. Process of preparing clay | | 43,884 |
| Adams, Hanson Hoyt. Carving machine | 43,210 | Arnold, Samuel S. Lock box for wheel hubs | | 43,002 |
| Adams, Horatio, et al. Concentric steam joint | 41,733 | Arnold, Samuel S. Machine for slicing fruit | | 44,610 |
| Adams, John Q. Brick machine | 41,841 | Asche, Otto. Machine for closing and soldering metallic boxes | | 42,245 |
| Adams, John V., et al. Ventilating cap | 43,815 | Ashdown, William C., et al. Bicycle | | 42,373 |
| Adams, Julian, et al. Shaft support for vehicles | 42,904 | Ashman, Mark. Gate | | 43,314 |
| Adams, Robert. Appliance for controlling fanlights | 43,583 | Askin, George P. Sleigh attachment for wheeled vehicles | | 44,804 |
| Adams, Walter S., et al. Car truck and draught equalizing device | 43,140 | Aspinwall, Lewis A. Potato cutter | | 41,937 |
| Adams, William C. Threshing machine | 42,919 | Atkins, Elias C., et al. Saw | | 44,558 |
| Adams, William G., et al. Valve | 43,998 | Atkins, William. Nut lock | | 44,019 |
| Adelsperger, Charles C. Shifting seat for vehicles | 41,960 | Atkinson, Franklin, et al. Device for converting a reciprocating into a rotary motion | | 43,430 |
| Adler, Leon D., et al. Electric car lighting system | 42,999 | Atterbury, Basil J. Ore pulverizer and concentrator | | 43,984 |
| Aeberly, Jakob. Stall for cattle | 44,476 | Atsatt, J. Charles F. Device for roasting peanuts | | 41,446 |
| Agricola, William H., et al. Valve | 42,080 | Atwater, Arthur S. Arc lamp | | 44,916 |
| Ahrens, Alfred E. Process for securing dental suction valves to plates | 43,947 | Atwater, Bryan. Milking machine | | 43,541 |
| Aketer, William H. Arc lamp | 42,135 | Augustin, Francis E. Tyre | | 44,421 |
| Albee, Honestus M. Wood-working machine | 41,782 | Austin, Edward S., et al. Process of making gas | | 43,970 |
| Albrecht, Herman S. Method of and apparatus for making artificial fuel | 44,216 | Austin, Peter T. Art of producing colouring matter from logwood | | 42,451 |
| Aldred, Robert, et al. Sewing machine | 41,817 | Austin, Robert. Washing machine | | 43,683 |
| Aldrich, Avie L. Mail box | 42,881 | Austin, William J. Feed water heater, filter, condenser and lime and grease extractor, combined | | 42,847 |
| Aleter, Henry, et al. Boot treeing and crimping machine | 42,487 | Automatic Gravity Labelling Co. Can-labelling machine | | 43,903 |
| Alexander, George W., et al. Machine for forming horse-shoe blanks | 44,630 | Automatic Telephone and Electric Company of Canada. Switch for electrical devices | | 43,418 |
| Alexander, John N., et al. Wagon axle | 41,705 | Automatic Telephone and Electric Company of Canada. Telephone system | | 44,256 |
| Alexander, Reece H. Steam generating boiler furnace | 43,421 | Automatic Water Tank Co. Steam or air connection for water elevators | | 43,851 |
| Alker, Charles, et al. Sign | 43,765 | Automatic Water Tank Co. Water supplying device for locomotives | | 43,891 |
| Allan, John. Shirt | 44,699 | Avery, John T. Lasting machine | | 43,528 |
| Allen, Aaron B., et al. Car coupler | 41,713 | Avis, Walter H., et al. Wire covering machine | | 43,679 |
| Allen, Alexander, et al. Ticket case | 43,745 | Aylsworth, George M. Buckle | 44,624 | 44,716 |
| Allen, Charles A., et al. Lubricating compound | 41,550 | Ayres, William E. Wrench | | 42,452 |
| Allen, Ethan, et al. Attachment for spinning spindles | 42,449 | Babcock, Bostwick D. Basket | | 42,683 |
| Allen, Ethan, et al. Spinning attachment | 44,637 | Bachus, Absalom. Furnace | | 41,560 |
| Allen, George W., et al. Car seal | 44,223 | Back, James S., et al. Guitar | | 44,692 |
| Allen, Harry. Projectile | 43,587 | Back, James S., et al. Musical instrument | | 44,634 |
| Allen, Mary A., et al. Car coupler | 42,288 | Bacon, Hiram A. Bean picker | | 43,517 |
| Allen, Oscar M., et al. Wheel box and axle | 42,790 | Baer, Walter W., et al. Medicinal compound | | 41,797 |
| Allen, Samuel V. Sign | 42,830 | Baemie, John, et al. Bung | | 42,782 |
| Allen, Theodore B. Machine for hackling and preparing fibre | 43,098 | Bagnell, John H. Neck yoke | | 43,038 |
| Allen, Thomas H. Brake for railway cars | 42,623 | Bailey, Fortune L. Register and indicator for cash | | 43,223 |
| Allin, Samuel S. Check springs for doors | 43,379 | Bailey, Horace H. Table | | 44,724 |
| Allis, Abram Q., et al. Stove | 43,879 | Bailey, James B., et al. Can | | 44,350 |
| Alpaugh, Ephraim. Brace for turning bits | 43,603 | Baillie, Ellis H., et al. Hoisting and transfer apparatus | | 42,874 |
| Alpaugh, Ephraim. Land roller | 42,944 | Baker, Albert, et al. Apparatus for handling and preserving food | | 42,796 |
| Altham, George John. Turbine | 43,248 | Baker, Albert, et al. Package | | 42,797 |
| Althouse, Milo J., et al. Door closer | 42,499 | Baker, Charles F. Boiler | | 42,316 |
| Althouse, Milo J. Lens | 44,571 | Baker, David H. Bellows | | 42,512 |
| Alton, Jesse W. Envelope | 42,604 | Baker, George G., et al. Bed bottom | | 44,790 |
| Am Ende, Otto W. T. Gauge for paper making machines | 44,568 | Baker, George M. Tedder fork | | 44,802 |
| American Arithmometer Company. Calculating machine | 44,512 | Baker, George W., et al. Mop | | 44,790 |
| American Balance Slide Valve Company. Valve for steam engines | 44,429 | Baker, James S., et al. Trolley | | 43,860 |
| American Bell Telephone Company. Telephone | 43,895 | Baker, Jay. Method of and apparatus for making ice cream | | 41,877 |
| American Electric Heating Company. Crucible and holder therefor | 42,488 | Baker, Joseph M. Box | | 43,482 |
| American Electric Heating Company. Electro-magnetically heated receptacle | 44,157 | Baldwin, Andrew. Sheathing lath | | 43,678 |
| American Electric Heating Company. Radiator | 44,084 | Baldwin, Willis, et al. Device for converting a reciprocating into a rotary motion | | 43,430 |
| American Electric Heating Company. System of electric heating | 44,083 | Ball, Annette C., et al. Fire escape | | 42,306 |
| American Electric Heating Company. Device for electrically heating crucibles | 42,489 | Ball, Arthur W., et al. Lubricating compound | | 41,550 |
| American Safety Car Coupling Company. Car coupler | 42,779 | Ball, Clinton M. Method of and apparatus for separating ore | | 41,987 |
| American Saw Company. Saw tooth | 42,781 | Ball, George L. Composition for removing varnish and paint from surfaces | | 41,600 |
| American Shoe Tip Company. Shoe tip | 44,635 | Ball, James. Machine for making and imprinting envelopes | | 42,802 |
| Ammon, Jacob S., et al. Pulley | 44,433 | Ball, John H., et al. Recorder for workmen's time | | 44,601 |
| Amorphous White Lead Company. Method of making white lead | 43,265 | Ball, Lorenzo D., et al. Boot and shoe sole | | 42,823 |
| Anderson, Frederick G. Hay rack loader and unloader | 41,493 | Ballantine, Alexander T. Refrigerator | | 42,600 |
| Anderson, George E. and Martin J. Potato digger | 43,530 | Ballantine, James, et al. Decorative medium | | 42,600 |
| Anderson, Robert S. Embossing machine | 44,301 | Ballard, George L. Secondary battery | | 43,860 |
| Anderson, Thomas. Pipe | 42,729 | Balz, John. Wrench | | 42,452 |
| Anderson, William B., et al. Brake for cars | 44,222 | Bambridge, George F. Photograph holder | | 41,600 |

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| Banan, Francis W. Seed planter | 44,889 | Bell, Alexander, et al. Method of making illuminating gas | 44,670 |
| Band, Henry F., et al. Machine for making fence posts | 41,974 | Bell, Arthur W., et al. Apparatus for actuating elevators, &c | 41,584 |
| Banovits, Cajetan. Nut lock | 43,206 | Bell, Charley A., et al. Hand truck | 43,176 |
| Banta, William E. Coupling for wire | 44,492 | Bell, George, et al. Neckyoke | 41,672 |
| Barbeau, Louis E. Device for turning bags | 41,463 | Bell, Robert. Apparatus for ventilating railway carriages | 41,670 |
| Braclay, Elmer. Seeding machine | 42,807 | Bell Telephone Company of Canada. Multiple switch board system | 44,910 |
| Braclay, Frank. Boiler | 42,005 | Bell Telephone Company of Canada. Spring Jack switch for telephone exchanges | 44,830 |
| Braclay, Frank. Furnace | 42,019 | Bell Telephone Company of Canada. Station apparatus for telephonic and telegraphic circuits | 44,922 |
| Barclay, James. Safety stop for engine governors | 42,218 | Bell Telephone Company of Canada. Switch board system | 44,826 44,827 44,828 |
| Barker, Albert A., et al. Snow guard | 42,922 | Bell Telephone Company of Canada. Telephone | 43,895 |
| Barker, John A. Wrench | 43,200 | Bell Telephone Company of Canada. Telephone exchange apparatus | 44,829 |
| Barker, William R. Process of finishing wood veneer | 44,464 | Bell Telephone Company of Canada. Telephone transmitter circuit | 43,975 |
| Barler, Augustus C. Blacking outfit | 43,453 | Bell Telephone Company of Canada. Test system for multiple switch boards | 44,909 |
| Barlow, Edward, et al. Apparatus for treating refuse | 41,818 | Bell, Thomas H. Machine for cleaning dried fruit | 43,806 |
| Barlow, John, et al. Nut lock | 42,200 | Bell, William. Metallurgical furnace | 43,548 |
| Barnard, James T., et al. Grinding machine | 43,256 | Bellavance, Napoleon E. Pump | 42,871 |
| Barnes, John, et al. Cylinder and valve | 44,507 | Belt, Jared E. Motor for water currents | 43,199 |
| Barnes, Thomas. Guard for street cars | 43,326 | Bemelmans, Leon, et al. Method of and apparatus for roasting ore | 41,525 44,249 |
| Barnes, William F. Method of making rubber stamps from type and casts | 42,418 | Benbow, Thomas. Washing machine | 42,295 |
| Barnett, David I. Envelope | 41,799 | Benedict, Maurice G. Stove | 42,924 |
| Baron, Bernard. Method of and machine for making cigar fillers | 42,454 | Benedix, Victor, et al. Process of manufacturing water-proof paper articles | 41,989 |
| Barr, Jacob N. Drill press | 44,728 | Benn, Alfred, et al. Vehicle | 44,968 |
| Barr, Robert, et al. Packing case for bottles | 43,356 | Bennett, Albert J. Radiator shelf and device for attaching same to radiators | 41,888 |
| Barracrough, Thomas C., et al. Machinery for making metal barrels | 44,577 | Bennett, Frank C. and Oliver H., et al. Cartridge loader | 44,777 |
| Barrett, Charles L. Land roller | 42,638 | Bennett, Joseph S. Box | 42,051 |
| Barrington, Joseph. Rocker and cup for operating pumps | 42,617 | Bennett, Walter E. Machine for sewing shank buttons to fabrics | 42,052 |
| Barrows, Finlay D. Trunk | 41,953 | Bennett, William H. Tenoning machine | 42,849 |
| Barthelme, Alexander A. Two wheeled vehicle | 42,247 | Bennor, Joseph. Knitting machine | 41,485 |
| Bartholomew, George E. Fraying machine | 42,411 | Bensinger, Moses. Cushion for billiard tables | 41,864 |
| Bartholomew, George E. Washing machine | 44,055 | Benson, Philander V., et al. Window blind | 41,971 |
| Bartlett, Charles C. Process of obtaining pure sulphide of nickel | 41,728 | Berger, Adolf C. Pipe | 42,568 |
| Bartlett, Kayre O. Method and apparatus for saving fumes of lead sulphide | 44,807 | Berliner, Emile. Gramophone | 41,901 |
| Bartlett, Kayre O. Process of making sublimed lead pigment | 44,379 | Berne, Arthur W., et al. Danger signal for railways | 41,810 |
| Bartlett, Edward. Aerator and cooler for milk | 42,494 | Berrenberg, Adolph, et al. Vacuum pump | 43,204 |
| Barton, Gustavus, et al. Cistern cleaning device | 44,431 | Berridge, Isaac L. Button hole finishing machine | 43,896 |
| Barton, Joseph, et al. Warming pan | 44,599 | Berrigan, John J. Process of separating cream from milk | 42,809 |
| Bassford, Isaac F. Cutter bar for mowing machines | 42,484 | Bertrand, Joseph E., et al. Sole sewing machine | 44,253 |
| Bassett, Norman C. Armature for motors and generators | 41,823 | Besley, Charles H., et al. Lubricator | 42,011 |
| Bassett, Norman C. Locomotive | 42,334 | Besse, Thomas H. Ice cream freezer | 43,170 |
| Bassett, Norman C. Motor for electric railways | 43,048 | Bessing, Theodore, et al. Gymnastic apparatus for school rooms | 41,887 |
| Batchelor, Telford C., et al. Wire | 41,931 | Besson, Hyppolite. Machine for gauging knots of bristles for brushes | 44,711 44,870 |
| Bateman, Richard W. Boot nailing machine | 44,985 | Best, Dixon, et al. Boiler | 44,057 |
| Bates, Sam., et al. Leaf holder for music | 43,552 | Best, Frank J., et al. Hand drill | 43,416 |
| Bates, David H., et al. Printing telegraph | 42,351 | Best, John H. Display rack | 44,702 |
| Bates, Ira. Weather strips | 42,785 | Bettendorf, William P. Wagon frame | 43,929, 43,931 |
| Batters, Edward, et al. Drying rack for clothes | 41,681 | Bettendorf, William P. Wagon tongue | 43,930 |
| Batthey, Sumter B. Aerial machine | 42,224 | Betts, Lewis F. Lantern | 43,463 |
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| Bayer, Heinrich, et al. Stump extractor | 42,799 | Bioheroux, Toussaint. Apparatus for making rolled rails, girders, bars, &c | 44,279 |
| Beacock, George. Straightener for mis-shaped legs | 43,856 | Bicknell, Emery O., et al. Register for checks and cash | 42,081 |
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| Beale, Earl V. Type-setting and matrice-making machine | 43,297 | Biederman, Edwin E. Flier for balling machines | 43,725 |
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| Beam, Aron M., et al. Method of extracting metals from ores | 44,726 | Bigger, Robert W. Furnace | 43,460 |
| Beard, Jacob B. Neck tie | 44,771 | Biggs, William H., et al. Milking machine | 43,269 |
| Beard, Eli F. Churn | 44,423 | Bigler, James. Buoy | 44,835 |
| Beardsley, Oscar E. Valve attachment for pumps | 44,338 | Bill, William. Wrench | 41,676 |
| Bearman, John. Pea harvester | 44,762 | Billings, Charles E. Drill chuck | 42,865 |
| Beasley, William F. Bag and bag lock | 43,577 | Billings, John D., et al. Machine for forming horse-shoe blanks | 44,639 43,467 |
| Beatty, George. Shovel, plough and cultivator, with adjustable rake, combined | 43,252 | Bilodeau, Ignace. Gully for street sewers | 43,070 |
| Beamlet, Leo C. Cruet | 43,711 | Bilz, John A. Vehicle | 41,984 |
| Beaudry, Deunbord, et al. Fire escape | 44,193 | Bingeman, Joseph, et al. Shirt | 41,588 |
| Beaumont, Franklin S., et al. Nut lock | 41,885 | Bingham, Lucien W., et al. Steam boiler | 42,196 |
| Beavis, Jefferson A. Car | 44,875 | Bingham, Martin, et al. Eaves-trough hanger | 44,372 |
| Becker, Arthur. Surgical dilator | 42,220 | Bird, Earle, et al. Machine for carving and engraving wood | 44,966 |
| Becker, Henry S. Machine for cutting fabric | 44,570 | Bird, Fletcher M. Hay loader | 44,412 |
| Becker, John J. Pump | 42,647 | Bird, Henry J. Method of making paper pulp | 44,677 |
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| Bedford, Jeff W. Machine for spinning top | 44,908 | Birkin, William A'Court G. Process of and solvent for separating ores | 43,584 |
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| Beebie, Dillon. Car coupler | 42,786 | Birkinshaw, William K. Pick | 43,401 |
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| Beekman, Gerard. Pruning implement | 44,420 | | |
| Beekman, Gerard. Cotton harvester | 44,551 | | |
| Beekman, John C. Picker for cotton harvesters | 42,616 | | |
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| Beery, Samuel M., et al. Coupler head for air brake hose | 44,743 | | |
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| Bischoff, Ferdinand F. Egg case | 42,064 | Boston Footwear Machine Company. Method of making boots and shoes. | 42,271 |
| Bisel, Joseph J. Wardrobe fixtures. | 42,768 | Bothwell, William T. Brake. | 44,782 |
| Bishop, William E. Fork and hack. | 43,280 | Bothwell, William T. Engineer's brake valve. | 44,783 |
| Bissell Carpet Sweeper Co. Carpet sweeper. | 44,722 | Boucher, Joseph L., et al. Diving suit. | 42,133 |
| Bissell, Simeon, et al. Method of cold rolling tubes. | 41,763 | Boughton, Claudius V. Signal telegraphy. | 42,156 |
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| Black, John M. Apparatus for preparing tickets, cheques, labels, &c., cut from a continuous web of paper. | 42,116 | Bowie, William S. Lounge. | 43,438 |
| Black, John W. Sprayer for deodorizing the air. | 44,012 | Bowing, John. Method of making coke. | 44,331 |
| Black, William N., et al. Means for securing pneumatic tires on wheels. | 43,606 | Bowker, Daniel R. Warehouse for storing grain. | 44,901 |
| Blackhall, Edward W. Dumping scow. | 43,621 | Bowler, John A. Metal band for box straps. | 43,186 |
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| Booth, Caleb H. Pump. | 43,822 | Brewster, John, et al. Motor. | 41,589 |
| Booth, George. Boiler. | 44,052 | Brickley, Joseph B. Spring board for wood choppers. | 41,663 |
| Booth, Joseph B. S., et al. Telephone. | 44,096 | Bridgeman, Henry LeRoy. Ore sampling machine. | 42,043 |
| Boppel, Jacob. Sewing machine. | 42,382 | Bridgeman Manufacturing Company. Ore sampling machine. | 42,043 |
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| Borgfeldt, Nicholas H., et al. Apparatus for forming cigars. | 43,234 | Briggs, George E. Brick. | 43,834 |
| Borgner, Cyrus. Brick. | 41,904 | Briggs, George T., et al. Electric metal heating machine. | 42,319 |
| Borland, William J., et al. Separator. | 44,989 | Briggs, Samuel, et al. Grinding machine. | 43,266 |
| Bornholdt, Adolph. Pump. | 42,268 | Briggs, Thomas A. Device for converting oscillatory into reciprocating motion. | 43,841 |
| Borschel, Hermann. Guard for pen holders. | 41,720 | Briggs, Thomas A. Feed machine attachment to printing machines. | 43,888 |
| Bosart, Timothy L. Fifth wheel for vehicles. | 42,750 | Briggs, Thomas A. Lever. | 43,556 |
| Boston Cash Register Company. Register and indicator for cash. | 42,313, 42,365, | Briggs, Thomas A. Paper feeding machine. | 43,887 |
| Boston Cash Register Company. Register for cash. | 42,366 | Brill, George M. Brake mechanism. | 41,496 |
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| Boston Footwear Company. Machine for trimming the uppers of boots and shoes. | 41,558 | Brill, John A., et al. Car truck and draught equalizing device. | 43,140 |

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| Bringham, Friend J. Harness | 41,833 | Budd, James. Process of and apparatus for printing on glass | 43,490 |
| Bringham, Friend J. Seamless leather articles | 44,661 | Budd, Robert. Post hole digger | 42,377 |
| Brinkley, Thomas C. Index | 43,004 | Buddenberg, Henry C. Water closet | 44,811 |
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| Brintnell, Archibald H. Rotary engine | 42,226 | Buker, Alpha. Fastener for carriage curtains | 44,485 |
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| Bristol, Orin L., et al. Flooring and siding tongs | 44,359 | Bundy, Willard Le Grande. Reorderer for workmen's time | 43,311 |
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| Brooks, Robert A. Hydrant | 41,515 | Burgess, Perry A., et al. Fire escape | 42,853 |
| Brooks, Thomas, et al. Boiler for heating purposes | 41,605 | Burke, Charles G. Telegraphic transmitting instrument | 42,119 |
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| Brotherston, John D. Steam hook | 44,348 | Burland, Jeffrey H. Table | 41,682 |
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| Brown, John H., et al. Coupler head for air brake hose | 43,356 | Butterfield, Henry R. Vacuum core for electric heating device | 42,385 |
| Brown, John S. Joint for railway rails | 43,125 | Butterfield-Mitchell Electric Heating Company. Smoothing iron | 42,727 |
| Brown, Joseph. Insecticide | 42,389 | Butterfield-Mitchell Electric Heating Company. Vacuum core for electric heating devices | 42,385 |
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| Brown, Perry. Car coupler | 44,139 | Cabana, Leon M. Washer | 43,324 |
| Brown, Theodore H., et al. Sheathing lath attachment for planing machines | 41,453 | Cable, Austin D. Earth screw for posts | 41,741 |
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| Brown, Thomas Francis. Car coupler | 43,831 | Caddy, Thomas E. Furnace | 44,484 |
| Brown, Thomas S. Mowing machine | 42,443 | Cain, Cornelius T. Breast collar | 41,952 |
| Browne, Arthur B. Process of making white lead | 43,189 | Caird, David. Method of making metal barrels, &c. | 43,923 |
| Brownell, Frederick B. Street car | 43,026 | Cairncross, John H. Advertising device | 43,714 |
| Brownell, John R. Boiler | 44,047 | Calcutt, Marvin Y. Elevator | 42,643 |
| Brownley, Patrick, et al. Injector | 43,214 | Caldwell, Alfred. Mode of attaching tips to flexible gas tubing | 44,174 |
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| Brunfield, Alonzo. Sign | 42,958 | Calhoun, Hugh, et al. Furnace | 44,726 |
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| Brunson, Horace, et al. Sidewalk | 44,295 | Calkins, Almon H. Burner for oil | 43,156 |
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| Brush, William J., et al. Car coupler | 42,620 | Callaghan, John J., et al. Cattle guard | 42,438 |
| Brussels Tapestry Co. Friction roller | 44,837 | Callaghan, William S., et al. Tire | 44,719 |
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| Buchanan, John P. Circuit controlling device | 41,865 | Callender, Austin. Harrow | 41,858 |
| Buchanan, John W. Wire reel | 42,114 | Callender, Franklin G. Process of preparing cereals | 44,100 |
| Buchanan, Michael T. Support for cables | 42,650 | Cameron, Alexander, et al. Flushing apparatus for urinals | 44,797 |
| Buchanan, William M. Thill support | 41,704 | Cameron, George W. Watchmakers' tool | 44,532 |
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| Canan, James. Dredge | 43,844 | Chateauvert, Zephirin. Machine for extracting railway spikes | 43,005 |
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| Carroll, Hiram. Trough for watering stock | 42,895 | Church, Walter C. Engine | 43,718 |
| Carroll, Thomas J. Cash carrier | 43,247 | Chute, Nicholas. Heater for feed water | 41,612 |
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| Carver, William. Bean harvester and weed cutter | 41,442 | Clark, William A. Lid for milk cans | 42,299 |
| Case, Alfred W. Screw propeller | 43,873 | Clark, William A. Machine for purifying and bottling milk | 43,539 |
| Case, Joel T. Marine engine | 41,548 | Clark, William, et al. Flushing apparatus for urinals | 44,797 |
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| Case, William H. Hanger | 44,859 | Clark, William. Latrine and apparatus for flushing same | 43,515 |
| Casey, Hezekiah. Sharpener for discs | 44,402 | Clarke, Frank H. Signal | 44,009 |
| Casey, Selden S. Tool for making metal fabric | 44,592 | Clarke, Thomas. Loom picking band | 43,229 |
| Casey, Selden S., et al. Grip tool for wire fences | 43,788 | Clarke, Edward. Last | 44,111 |
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| Casson, William E. and John E., et al. Lath | 42,443 | Claus Shear Company. Handle for knives | 44,029 |
| Castle, Charles E., et al. Car | 42,555 | Clausen, Edward E. Screw machine | 44,303 |
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| Catchpole, Alfred. Boiler | 42,589 | Clawson, Junus, et al. Scale | 42,725 |
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| Cathrein, Josef. Door lock | 42,584 | Clayton, George, et al. Kilm | 43,604 |
| Catlin, Joseph A., et al. Heater | 44,620 | Clearhue, Thomas. Moccasin | 41,695 |
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| Catterson, John E. Car coupler | 43,704 | Cleaveland, John B. Wire braiding machine | 44,785 |
| Caulfield, Hans J. Tire for bicycles | 43,452 | Clement, Jules. Governor for hydraulic motors | 41,503 |
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| Caxon, George. Seat spring | 43,616 | Clendenen, William F., et al. Loop for harness | 42,677 |
| Cell, Anson H., et al. Measuring vessel | 44,427 | Clerc, Frederick de Jersey. Window sash | 42,354 |
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| Chadborn, Frederick C. Ventilator | 44,197 | Cleveland, William F., et al. Holder for belts | 44,122 |
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| Challen, John, et al. Cultivator | 41,745 | Cliff, Edward. Spring setting machine | 41,468 |
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| Chamberlain Manufacturing Company. Apparatus for handling logs | 42,970 | Clingman, John. Carburettor | 44,694 |
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| | | Cochran, Edward A. Combination tool | 42,476 |
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| | | Cochran, Samuel D. Autographic register | 41,510 |
| | | Cocker, Joseph N. Potato harvester | 41,735 |
| | | Cockshutt Plow Company. Riding plow | 42,032 |
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| | | Cody, Abraham S., et al. Hydrocarbon lighting device | 43,713 |

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| Colclough, Adelaide L. Apparatus for fastening down carpets | 41,514 | Copeland, George W. Machine for lasting boots and shoes | 41,994 |
| Cole, Charles S. Corset and dress stay | 43,909 | Copeland, George W. Tack driving machine | 41,995 |
| Cole, Thomas A., et al. Playing cards | 44,647 | Copeland Roller Bearing Company. Roller bearing | 43,286 |
| Cole, William P. Machine for painting fabrics | 42,472 | Copp, William J. Disc harrow | 43,651 |
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| Coleman, George E., et al. Velocipede | 43,672 | Copp, William J., et al. Cultivator | 41,745 |
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| Colton, George H. Fuel feeding device | 43,731 | Côté, Louis. Heel stiffener forming machine | 42,425 |
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| Consolidated Car Heating Company. Electric heater | 44,162 | Cowan, William, et al. Holder for belts | 44,122 |
| Consolidated Car Heating Company. Engine | 43,703 | Cowan, William G., et al. Car coupler | 44,769 |
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| Harlin, George C. Car coupler | 41,462 | Heilmann, Jean J. Method of electrically propelling railway vehicles | 42,506 |
| Harmon, John B., et al. Carrier for lumber plates | 43,391 | Heine, August. Cleaner for grain | 41,650 |
| Harper, Charles A., et al. Cleaner for tubes | 41,532 | Heinmann, Carl. Device for suspending scaffolding | 43,932 |
| Harper, Henry, et al. Arc lamp | 44,555 | Heinrich, Oswald. Hinged joint link | 44,341 |
| Harrel, Benjamin E. and Anderson F. Sawing machine | 41,903 | Heiser, Charles L. Boot treeing and crimping machine | 42,487 |
| Harrington, Hiram A. Metallic fencing | 41,444 | Heldebrant, George D. Pulverizer for clods | 42,697 |
| Harris, Frank, et al. Stand for window shutters | 44,865 | Hele-Shaw, Henry S. Inkstand | 44,168 |
| Harris, Frederick W. Lock | 44,428 | Hellmann, Bernhardt, et al. Stove | 43,676 |
| Harris, Levi, et al. Wheel box and axle | 43,706 | Hellyer, Henry A. C. Shade holder for lamps | 42,170 |
| Harris, Thomas. Electric railway | 42,790 | Helmer, James L. Press for cheese | 42,703 |
| Harrison, Edward M. Telephone | 44,959 | Hemingway, Henry N. Grate | 41,976 |
| Harrison, John J. Advertising match box | 43,055 | Hemingway, Henry N. Hot air furnace | 41,945 |
| Harrison, Robert. Injector | 42,134 | Hendee, George W., et al. Truss | 42,973 |
| Harrison, Thomas. Skate | 44,261 | Henderson, Avery, et al. Grave border and protector | 44,928 |
| Harrison, William H. Fastener for nails | 44,929 | Henderson, Charles C. Motor for driving pumps | 42,388 |
| Harry, Herbert E., et al. Floor cloth | 44,444 | Henderson Maddock Motor Company. Motor for driving pumps | 42,388 |
| Harrell, Frank. Roller for lithographers and printers | 44,444 | Henney, James. Kiln | 42,578 |
| Hart, Frederick. Turbine | 42,932 | Hennin, Alphonse. Process for making ammonia and gas | 42,274 |
| Hart, Henry B. Wheel tire | 43,823 | Hennin Process Company. Process for making ammonia and gas | 42,274 |
| Hart, Joseph, et al. Shingle bunch and binder | 44,860 | Henoch, Gustave, et al. Apparatus for classing pulverized ore | 44,758 |
| Hartelius, Charles E. Electrical attachment for rocking chairs | 43,319 | Henry, Marcus S. Harrow attachment | 43,669 |
| Hartin, John. Distributing apparatus for beer, &c. | 44,809 | Henry, William, et al. Vault | 44,597 |
| Hartley, Charles J. Weighing machine | 44,074 | Henry, William J. Trunk lock | 44,820 |
| Hartling, Charles N. Sleigh guard | 42,915 | Hensley, Joseph B., et al. Belt tightener | 41,772 |
| Hartman, Joseph S., et al. Whiffletree hook | 43,320 | Heppe, Alexander, et al. Range | 44,161 |
| Hartnett, John J. Inhaler | 41,724 | Herbert, Louis. Baking pan | 43,240 |
| Hartshorn, Edmund F. Apparatus for making metal tubes | 42,648 | Herbert, Moise, et al. Hay press | 43,491 |
| Hartshorn, Edmund F. Shade roller | 43,644 | Herdman, Frank E. Elevator | 43,073 |
| Harvey, Charles T. Wheel tire | 44,050 | Hering, Carl. Variable speed electric motor | 44,016 |
| Harvey, Cyrus E. Fire escape | 44,496 | Herman, Ludwig. Chain | 43,724 |
| Harvey, Frank, et al. Car coupler | 43,319 | Herr, Albert W., et al. Curtain fixture | 44,720 |
| Harvey, George. Window frame and sash support | 44,202 | Herrburger, Joseph. Piano action | 41,669 |
| Harvey, James F. Clamp | 45,478 | Hershey, Martin E. Piston valve for steam engines | 42,763 |
| Haselwood, James. Washing machine | 41,863 | Hertel, John A. Telephone | 44,796 |
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| Haskell, Charles S. and William E. Organ | 43,830 | Hess, Emil G. Apparatus for holding plain wooden knobs during their ornamentation | 41,726 |
| Haskell, William H. Knitting machine | 42,713 | Hess Postal Facility and Supply Company. Vending apparatus | 43,122 |
| Haskell, William H., et al. Method of making knitted fabric | 42,324 | Hester, Joseph W. Nut lock | 44,793 |
| Haskin, Samuel E. Process and apparatus for vulcanizing wood | 42,666 | Heunader, Christian. Trunk and wardrobe combined | 44,063 |
| Has, Caesar. Apparatus for reproducing carvings | 42,712 | Hewes, Henry M., et al. Shuttle for looms | 44,376 |
| Hastings, Frank D., et al. Temporary binder | 43,468 | Hewitt, Philander. Hay and stock rack | 41,922 |
| Hathaway, Edgar F. Machine for making wire fence strands | 44,011 | Hewitt, William. Cultivator | 44,834 |
| Hathaway, Louis A., et al. Sash holder | 44,600 | Hewitt, William. Grain drill | 44,861 |
| Haub, Charles C., et al. Car coupler | 41,651 | Hewson, William, et al. Device for preventing horses from running away | 43,893 |
| Hawkins, George D. Dress stay | 43,863 | Heyl, George E. Electric conductor | 42,078 |
| Hawkins, Harry and John W., et al. Carrier for lumber | 42,803 | Heys, John J., et al. Boot and shoe levelling machine | 43,398 |
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| Hawks, Archie McL. Pipe | 43,391 | Hicks, Norman A. Churn | 44,188 |
| Hawley, Mary A. Apparatus for applying insecticide | 41,529 | Hicks, Oliver H. Paper roll and fixtures therefor | 43,872 |
| Hay, George. Chalk sharpening implement | 44,185 | Hieronimus, William, et al. Cultivator | 44,761 |
| Hayden, Henry, et al. Case for storing and handling shot, seeds, &c. | 41,837 | Higbee, Clinton A. Bolt and nut | 44,445 |
| Haydon, James R. Submarine boat | 44,374 | Higbee, Clinton A. Tool for cutting down screw threads | 44,446 |
| Hayes, Hammond V., et al. Telephone | 43,870 | Higgins, Edward S., et al. Typewriter | 43,243 |
| Hayes, Hammond V. Telephone transmitter circuit | 43,777 | Higgins, Werter C. Generator for steam | 42,246 |
| Hayes, James. Sliding partition | 44,606 | High, William. Rack for exhibiting goods | 43,794 |
| Haynes, John I. Type setting machine | 43,975 | Hilgenstock, Gustave. Apparatus for carrying out the desulphurization of pig iron | 42,183 |
| Haynes, Jacob P., et al. Saw set | 42,115 | Hill, Edwin. Machine for bevelling plate glass | 42,395 |
| Haynes, William C., et al. Fire escape | 43,080 | Hill, Edwin. Method of setting and holding plate glass for bevelling | 42,739 |
| Hays, Charles W. Loading device | 44,958 | Hill, James, et al. Holder for shafts | 44,517 |
| Hays, Lambert, et al. Means for consuming petroleum and apparatus for making gas therefrom | 41,517 | Hill, Joseph. Steam engine | 43,639 |
| Hays, Lambert, et al. Method of and apparatus for treating refractory ores | 44,036 | Hillierscheidt, Albert. Hoisting device | 44,862 |
| Hayward, John W. Burner for gas | 43,974 | Hilton, John W., et al. Stove and heater | 44,873 |
| Hazard, Frederick J. H. Bath tub | 43,105 | Hilton, William. Ironing table and washing machine combined | 44,109 |
| Hazard, Frederick J. H. Cash carrier | 43,151 | Hilton, William. Washing machine | 44,176 |
| Hazeltine, Charles W. Arc lamp electrodes | 43,967 | Hinchliffe, John, et al. Machine for melting snow and ice | 44,552 |
| Hazelnurst, Edward. Method of stopping, sealing, and protecting the tap holes of barrels | 42,008 | Hinchliffe, John, et al. Snow plough | 44,514 |
| Head, John, et al. Standing gear for high speed rotary machines | 44,133 | Hinckley, Howard. Adjuster for railway car brakes | 44,766 |
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| Healy, Richard A., et al. Machine for melting snow and ice | 42,428 | Hine, James W., et al. Book case | 42,503 |
| Healy, Richard A., et al. Snow plough | 42,602 | Hinkson, Daniel, et al. Hydrocarbon lighting device | 43,713 |
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| Heardley, George W. Hanger for eaves troughs | 44,514 | | |
| Heasley, William. Jewel case | 43,584 | | |
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| Hiscox, Gardner D. Heater for cars | 44,005 | Howarth, Henry. Transom pivot | 44,310 |
| Hiscox, Gardner D. Hose coupler | 44,662 | Howarth, Henry. Window sash centre | 44,312 |
| Hiskey, Charles S. Cartridge loading machine | 43,840 | Howarth Reversible Sash and Sash Centre Co. Transom pivot | 44,310 |
| Hitchcock, George H. Stuffing box | 43,707 | Howarth Reversible Sash and Sash Centre Co. Window sash | 44,312 |
| Hoag, John E. Fence making machine | 42,379 | Howe, Henry M., et al. Method of forming soluble phosphate | 41,648 |
| Hoag, Thomas, et al. Holder for spools | 42,979 | Howell, George B. Pipe coupling | 42,676 |
| Hobby, Delzon G., et al. Gauge running attachment | 43,431 | Howell, Charles T., et al. Bicycle | 42,373 |
| Hobbs, John E., et al. Sleigh runner | 43,021 | Howell, Richard, et al. Fire escape | 42,356 |
| Hobday, William A. Pedal attachment for organs, &c. | 42,058 | Howell, William H., et al. Lubricator | 44,516 |
| Hobson, Amos H. Method of making non-alcoholic beer | 43,652 | Hoxie, John C. Ice cream freezer | 41,352 |
| Hodge, William. Vehicle seat | 42,229 | Hoymann, August, et al. Car coupler | 41,800 |
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| Hodgson, Charles. Pump | 41,487 | Hoyt, William E., et al. Wood-working machine | 41,626 |
| Hoenscheid, Peter. Twist drill milling machine | 43,340 | Hubbard, Charles F. Oven | 42,545 |
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| Hoepfner, Carl. Method of producing protoxide of copper | 44,745 | Hubbard, Harvey F. Toy gun | 41,978 |
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| Hoffmann, Carl. Rock boring apparatus | 44,689 | Hubbell, Thomas J. Harrow and cultivator | 44,390 |
| Hoffmann, Ernest G. Machine for making metal balls | 43,632 | Huber, James T. et al. Draft equalizer for vehicles | 42,547 |
| Hoffmann, Ernest G. Roller | 43,784 | Huestis, Charles D. C. Conduit for electric railways | 41,881 |
| Hoffmann, Hermann H. and Francis H. Blank book | 43,046 | Huettemann, Gottfried, et al. Method of making fuel | 44,375 |
| Hoffmann, Otto. Ventilator and air moistener | 43,610 | Hughes, Edward W. M., et al. Journal box for cars | 42,592 |
| Hogg, William J., et al. Woven pile fabric | 42,556 | Hughes, Frank M. Water tower and fire escape | 44,750 |
| Hoggson, Samuel H. Time stamp | 44,460 | Hughes, John. Safety buffer for street cars | 42,935 |
| Hoidge, Richard J. Angle mould | 43,836 | Hughes, Samuel. Method of ventilating railway cars | 43,814 |
| Hojer, Thomas G. Driers for use with varnishes, &c. | 43,837 | Huhn, Carl. Apparatus for carrying and keeping horses | 43,600 |
| Holden, Edward, et al. Tire for vehicles | 43,393 | Hulbert, Charles B. Horse-shoe | 44,579 |
| Holden, George R., et al. Bell | 44,389 | Hull, John W. Collar for animals | 44,497 |
| Holderman, Fred. Reversing mechanism for counter shafts | 43,983 | Hull, William. Cultivator and drill combined | 44,477 |
| Holderness, Algernon S., et al. Nut lock | 42,485 | Hull, William S. Electrical protective system | 43,728 |
| Holingren, Alfred, et al. Cylinder and valve | 44,507 | Hullings, Charles W., et al. Steam boiler and fire box | 43,900 |
| Hollenbeck, Frank A. Firearms | 44,556 | Hume, Robert D. Can lacquering machine | 42,480 |
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| Holmes, Herbert L., et al. Valves for engines | 42,884 | Hungerford, Mary S. Fastener for boots and shoes | 43,638 |
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| Holmes, William A., et al. Lamp | 43,014 | Hunter, Benjamin A., et al. Brake for cars | 44,222 |
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| Holt, Herbert L. Electric light hanger | 42,210 | Hunter, Robert. Tubular pneumatic action for organs | 42,370 |
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| Hope, John, et al. Floor, ceiling and roof | 43,854 | Huther, Warren B. and August E. Cutting head | 42,272 |
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| Hopkins, Floyd. Gate | 44,351 | Huyck, Leonard W., et al. Attachment for spinning spindle | 42,449 |
| Hopkins, Henry T., et al. Device for drying grain | 41,556 | Huyck, Leonard W., et al. Spindle attachment | 44,657 |
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| Hopkins, Squire B., et al. Nut lock | 41,538 | Iles, Malvern W., et al. Method of saving metallic particles driven off from high cupola furnaces | 44,181 |
| Horning, Josiah, et al. Lathe | 44,257 | Ingalls, Allen G., et al. Hanger for electric lamps | 42,281 |
| Horn, Albro R., et al. Cattle-guard | 42,438 | Ingalls, James. Hame fastener | 41,725 |
| Horne, Samuel E. and Chester, et al. Car life-saving fender | 41,740 | Ingels, Lauron. Horse-collar | 44,433 |
| Hornsby, (Richard) & Sons. Engine | 43,758 | Ingersoll, Richard H. Machine for drawing warp threads | 42,030 |
| Hornsby, Thomas P., et al. Non heat conducting covering | 43,119 | Ingersoll, Simon. Thrust bearing for shafts | 44,764 |
| Hornsby, William, et al. Engine | 43,758 | International Chemical and Gas Company. Pyro-electric generator for gas | 44,164 |
| Horrocks, Joshua. Wire structure | 43,982 | International Cigarette Machine Company. Cigarette machine | 43,554 |
| Horst, Samuel W., et al. Axle-box | 44,598 | International Gun and Ordnance Company. Small arms | 43,130 |
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| Hosner, Riley J. Door hanger | 44,962 | International Sheathing Lath Company. Lath | 44,921 |
| Hosner, Riley J. Stay roller | 44,963 | Ireland, William. Machine for making nets | 44,037 |
| Hosner, Riley J. Track for door hanger | 44,961 | Irish, Charles. Potato planter | 44,037 |
| Hotchkiss, Arthur E. Elevated railway | 43,241 | Irish, Delos, et al. Circuit breaker | 43,198 |
| Hotchkiss, Arthur E. Vehicle for elevated railways | 43,316 | Irving, James. Grain crusher | 44,387 |
| Hotchkiss, Joseph V., et al. Saw | 43,435 | Irving, James. Machine for pulping and slicing turnips and mangols | 44,487 |
| Hough, Azel C. Cash recorder | 41,671 | Isaacs, Augusta R. Cooking utensil | 41,657 |
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| Housh, Frank E. Coin operated machine | 42,173 | | |
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| Howard, Charles DeZang. Draft regulator | 41,767 | | |
| Howard, Charles. Method of drying and vulcanizing wood | 43,619 | | |
| Howard, Henry. Gate for railway car platforms | 41,747 | | |
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| Howard, Louis E. Arc lamp | 44,675 | | |

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| Jackson, John. Bottling apparatus. | 41,752 | Joy, Robert, et al. Steam boiler. | 43,432 |
| Jackson, John H., et al. Adding machine. | 43,575 | Judd, Thomas L. Gripper for scaling ladders. | 43,033 |
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| Jewett, Luther K. Side-bearing for car bodies. | 41,599 | Keith, Alexander, et al. Amalgamator. | 44,215 |
| Jobbins, William F. Process of extracting fats from bones. | 44,920 | Keith, Alexander E. Switch for electrical devices. | 43,418 |
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| Jones, George M. Elevator and carrier for hay and grain. | 42,172 | Kernon, Francis, et al. Furnace. | 42,783 |
| Jones, George M., et al. Unloader for hay and grain. | 43,264 | Kernodle, James A. Churn. | 42,834 |
| Jones, George W., et al. Steam boiler. | 43,429 | Kerry, Aron, et al. Hand-drill. | 44,067 |
| Jones, Henry A. Apparatus for preparing iron ore. | 43,465 | Kerwin, Patrick H., et al. Whip. | 42,976 |
| Jones, James. Roller-mill. | 43,875 | Ketchum, Everette H. Bag holder. | 44,533 |
| Jones, John, et al. Collar coupler. | 44,609 | Kidd, John S. Wagon dump and elevator. | 42,890 |
| Jones, Joshua L. Fastener for trunks. | 43,786 | Kidd, Robert. Carpet stretcher. | 44,014 |
| Jones, Lyman Melvin, et al. Cultivator. | 43,318 | Kidd, William J. Apparatus for raising and lowering incandescent electric lamps. | 42,327 |
| Jones, Lyman M., et al. Seeding machine. | 43,392 | Kieckhefer Bros. & Company. Stove pipe elbow. | 42,612 |
| Jones, Nathaniel M., et al. Digester for paper pulp. | 41,501, 41,665, 42,120 | Kiley, Daniel. Valve. | 43,370 |
| Jones, Patrick. Cigar. | 43,205 | Kilgore, John S. Folding seat. | 42,851 |
| Jones, Samuel. Load lifter. | 41,846 | Killam, M. Luther, et al. Hub for carriage wheels. | 44,258 |
| Jones, William J. Nut lock. | 44,046 | Kimber, Abraham. Mail pouch catcher and deliverer. | 41,975 |
| Jonsson, Charles, et al. Smoke funnel. | 43,147 | Kime, Enoch. Land roller. | 43,096 |
| Joosten, Christian H. Device for distributing fungus and insecticide powder. | 41,498 | Kincaid, Herbert W. Shingle. | 44,650 |
| Jordan, Edgar A., et al. Fastener for horse blankets. | 43,419 | Kindleberger, Jefferson, et al. Car coupler. | 42,288 |
| Jorgenson, Erik, et al. Firearms. | 44,614 | King, Edward D., et al. Recorder of workmen's time. | 44,553 |
| Joslyn, Charles H., et al. Type distributing machine. | 41,929 | King, James H., et al. Steam boiler. | 41,588 |
| Josten, Peter, et al. Inhaler. | 41,900 | King, James M. Tobacco flavoring machine. | 43,793 |
| | | King, Robert W. Steam boiler. | 43,660 |
| | | King, Thomas J. Fire-proof composition. | 44,132 |
| | | King, William. Diaphragm for boilers. | 43,184 |
| | | Kinghorn, James, et al. Jack for vehicles. | 44,413 |

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| Kingman, William H. Appliance for teaching penmanship | 44,463 | Landerer, Albert. Means for charging liquids with carbolic acid gas | 43,969 |
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| Kinney, Jesse. Puzzle | 43,762 | Landfear, William R. Cancelling and dating stamp for post offices | 42,340 |
| Kinsman, Frank E. Apparatus for controlling the movement of trains | 42,960 | Landin, Peter J., et al. Computing machine | 41,809 |
| Kinsman, Frank E. Signal for railways | 42,979 | Landis, Ezra F. Suction pipe | 44,060 |
| Kinzel, John C. Kiln | 43,124 | Lane, Fernando G., et al. Clothes line | 43,620 |
| Kirk, Charles. Flushing apparatus for urinals | 44,797 | Lane, William G. Car | 42,907 |
| Kirk, Joseph S., et al. Nut lock | 42,426 | Laney, Thomas G. Valve | 44,528 |
| Kirk, Wallace R., et al. Car wheel and axle | 43,169 | Lang and Campbell. Truss | 42,973 |
| Kirkpatrick, George W. Grain drill | 41,692 | Lang, George C., et al. Truss | 42,973 |
| Kirkwan, John P. and James E. Car coupler | 42,070 | Langdon, Herbert P. Device for preventing the swarming of bees | 42,107 |
| Kisinger, William S. Wire connector | 44,855 | Lange, Friederich E. Spring for watch cases | 44,942 |
| Kitchen, William W. Calendar | 41,792 | Lange, Herman O. Log turner | 43,334 |
| Kitselman, Alva L. Wire fabric machine | 44,972 | Langmuir, Woodburn. Tire | 43,242, 43,569, 43,581 |
| Kitson, Arthur, et al. Amalgamator | 44,215 | Lanier, Louis H., et al. Machine for scalping and bolting flour | 42,198 |
| Klander, Weldon, Dyeing Machine Company. Dyeing machine | 43,899 | Lannert, John A., et al. Burner for hydrocarbon | 43,062 |
| Kleemann, Fritz A. Apparatus for heating and cooling liquids | 43,742 | Laporte, Lucien. Last for boots and shoes | 44,840 |
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| Klinger, Alexander. Fastener for lace, &c | 43,180 | Latch, Arthur, et al. Wire | 41,931 |
| Kindsen, Augustus. Steam engine | 42,931 | Lattimer, Francis. Door knob | 43,653 |
| Knapp, Edgar. Machine for separating beans | 42,940 | Laumann, Josef. Firearms | 43,845 |
| Kneeland, Charles L. Butter package | 41,534 | Lavender, Charles F., et al. Axle bearing | 44,821 |
| Knight, Thomas. Game | 44,417 | Lavender, Charles F., et al. Saddle for velocipedes | 42,372 |
| Knight, Walter H., et al. Apparatus for operating electrically driven mechanism | 42,112 | Lawrence Electric Company. Engine | 44,925 |
| Knight, William R., et al. Car coupler | 41,812 | Lawrence, Robert S., et al. Gas apparatus | 44,943 |
| Knoerschild, Charles, et al. Bung | 42,782 | Lawrence, Orville H., et al. Pipe bending machine | 44,603 |
| Knowlton, Thomas A. Vise | 44,559 | Lawrence, Orville H. Pipe elbow | 44,602 |
| Koch, Karl. Commutation brush | 44,142 | Lawrence, William. Electric brake | 41,128 |
| Koeniges, Martin. Piano hammer covering machine | 43,411 | Lawrence, William. Engine | 44,925 |
| Kohl, Arnold. Binding post for electrical connections | 44,105 | Laws, John A., et al. Drum for hot air furnaces | 42,527 |
| Kölle, William F. A. Stove | 44,641 | Lawton, Arthur W., Albert L. and Charles F., et al. Apparatus for and method of making salt | 41,592 |
| Kootenay and Columbia Prospecting and Mining Company. Boiler | 43,127 | Lawton, Benjamin. Sofa and bed combined | 43,717 |
| Kootz, Elihu P. Weather strip | 42,785 | Layer, William C., et al. Carving machine | 42,387 |
| Kootz, William, et al. Bung | 42,782 | Layton, Ralph De. Refer. Mechanical movement | 42,894 |
| Kornder, Leonhardt. Nail-driving apparatus | 43,913 | Lazier, Charles E., et al. Seal lock | 44,560 |
| Korting, Ernst. Injector | 43,558 | Leach, E. Allen, et al. Truss | 42,973 |
| Kray, Ole H. J., et al. Firearms | 44,614 | Leaker, Richard H., et al. Art of and apparatus for pre-serving milk | 42,806 |
| Krunz, Hongo, et al. Boot treeing and crimping machine | 42,487 | Leaman, James A. and John W. Sash lock | 43,890 |
| Krebs, Henry. Potatoe digger | 42,698 | Leary, William A. Pen | 43,839, 44,226 |
| Krensen, A. F. W. Process of melting by electricity | 43,953 | Leathers, John E. Nail and staple | 43,949 |
| Krepps, Virgil A. Vending machine | 43,753 | Lebel, Florian, et al. Carriage axle | 42,169 |
| Krewson, Joseph A., et al. Stirrup for riding saddles | 43,661 | Lecellier, Lion R. Lock | 42,900 |
| Kring, Levi, et al. Stump extractor | 42,799 | Lecompte, René J., et al. Boat and means of propelling same | 43,902 |
| Kritschmer, Emil A. Bow for stringed musical instruments | 44,207 | Ledoux, Joseph. Axle for carriages | 44,788 |
| Krom, John H., et al. Milking machine | 43,269 | Lee, James H., et al. Trap for animals | 44,773 |
| Kroncke, Robert, et al. Weight attachment for bicycles | 42,726 | Lee, John G., et al. Veterinary shield | 42,152 |
| Krough, Emil C. C., et al. Thermostat | 42,448 | Lee, Thomas W. Methods of making fuel | 44,416 |
| Krouse, Charles C., et al. Suspender | 42,158 | Leede, Julius, et al. Means for consuming petroleum and apparatus for making gas therefrom | 43,974 |
| Krumschied, Jacob. Device for preventing water pipes from freezing | 43,383 | Leede, Julius, et al. Method of and apparatus for treating refractory ores | 43,105 |
| Kraisbrink, Johannes A., et al. Ice breaking and cleaning apparatus | 42,839 | Leeds, Thomas W., et al. Sinder sifter and ash-box combined | 41,710 |
| Kruse, Herman, et al. Canal digger | 42,007 | Leembruggen, Jean. Method of closing receptacles for food, &c | 43,589 |
| Kuhn, Albin. Contrivance for fastening scaffolds | 43,601 | Legendre, Alphonse, et al. Temporary binder | 44,600 |
| Künzell, Oskar. Cigar box | 41,926 | Leggatt, John A. Door bolt and bar | 43,696 |
| Kussner, Paul. Portfolio | 44,548 | Leggott, Henry. Range | 43,866 |
| Kustermann, Max, et al. Machine for printing on matches | 43,757 | Legrand, Pierre. Machine for making felt | 42,368 |
| Kydd, Robert W. Holder for needle packets | 44,180 | Lehman, Isaac. Machine for setting tires | 42,259 |
| Kyes, Henry P. Check rein detaching or attaching device | 43,740 | Lehn, Louise. System of cutting ladies garments | 42,542 |
| Label, Florian. Carriage axle | 42,947 | Leigh, William H., et al. Track sweeper | 42,033 |
| Labrec, James P., et al. Diving suit | 42,153 | Leith, Harvey Isaac. Bottle | 43,193 |
| Labrec, Tales, et al. Diving suit | 42,153 | Leland, Edwin A. Spring hinge | 43,220 |
| La Burt Automatic Electric Block Signal System and Car Coupler Company. Car coupler | 41,585 | Lelm, Otto. Apparatus for delivering money | 43,007 |
| La Burt, John. Car coupler | 41,585 | Lemieux, Joseph. Stove | 42,178 |
| La Burt, John, et al. Valve | 42,080 | Le Mieux, Lucius A. Valve for steam engines | 42,955 |
| Lacon, William T. Guard for street cars | 44,396 | Lemp, Hermann, et al. Apparatus for electric welding | 42,883 |
| La Dow, Charles. Harrow | 44,589 | Lemp, Herman. Electric welding apparatus | 42,642 |
| Lafayette, George G. Lamp socket | 43,781 | Lentz, Gustave. Bogie frame for locomotive engines | 41,739 |
| Lafontaine, Clodomer. Supporter for trousers | 41,779 | Leonard, Frank E. and Charles W. Interchangeable lining for journal bearings | 42,678 |
| La Force, Hyppolite J. Axle bearing | 41,658 | Leonard, Harry W. Method for the transmission of power by electricity | 42,361 |
| Lagarie, Octave. Tire | 44,099 | Leonard, Thomas. Washing compound | 44,199 |
| Lagarie, Octave. Tire for wheels | 43,369 | Leonhardt, William J. Coffin | 43,384 |
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| Laird, Robert H. Apparatus for vaporizing oil | 43,142 | Leslie, Edward. Snow plough | 41,633 |
| Laird, Robert H. Process and apparatus for deodorizing oil | 42,812 | Lesperance, Alexander, et al. Friction clutch mechanism | 41,714 |
| Laird, Robert Wallace, et al. Power hammer | 43,365 | Lessard, Theophile. Syphon | 44,838 |
| Laird, William H., et al. Apparatus for making gas | 44,340 | Lester, Lucretia. Fire escape | 44,042 |
| Lakin, James A. Burial casket | 44,210 | Le Sueur, Ernest A. Diaphragm for electrolytic cells | 41,504 |
| Lalonde, Charles F., et al. Connecting nipple for heating radiators | 42,461 | Letts, Ellsworth M., et al. Pipe bending machine | 44,603 |
| Lamb, Daniel M. Electric battery | 41,484 | Levis, John S. Spring hinge | 43,220 |
| Lambert, George A. Plough coupler | 43,049 | Levy, Joseph L., et al. Railway car | 42,111 |
| Lamme, Benjamin G. Armature for electric machines | 44,439 | Lewis, Alfred, et al. Last for boots and shoes | 44,953 |
| Lancaster, John L. Gate | 43,012 | | |
| Lancaster, Morris. Pew back | 42,573 | | |

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| Lewis, Arthur Ebon, et al. Car coupler | 43,266 | MacDonald, Randolph, et al. Method of propelling cars by electricity | 43,63 |
| Lewis, George A. Liquid gauge | 42,332 | MacDonald, Randolph, et al. Transmitter for electric currents | 43,408 |
| Lewis, Isaac B., et al. Inner sole | 41,808 | Macdonald, Thomas A. Device for utilizing water pressure | 44,950 |
| Lewis, James T. Nail parer or cutter | 42,128 | Macdonell, Allen G. Advertising device | 42,691 |
| Lewis, John A., et al. Door for furnaces | 44,557 | MacEachen, Samuel, et al. Apparatus for drilling wells | 42,344 |
| Lewis, Samuel R. Nippers for oil cup feeder lifters | 42,912 | Macfarlane, John E. W., et al. Nut lock | 41,699 |
| Lewis, Theodore H. Conveyor for coal | 43,150 | MacGregor, Gourley & Co. Key seat cutting machine | 43,973 |
| Lewis, Thomas L. L. Corset | 42,206 | Mackey, William T. Method of tightening tires on wheels | 44,617 |
| Lewis, William. Draft equalizer | 43,295 | Mackinnon, Duncan T. H., et al. Collar and pulley | 45,937 |
| Lewis, William H. Pillow | 42,267 | MacLeod, Charles J. Garbage receptacle | 43,397 |
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| Linnehan, Francis J., et al. External joint for escape pipes | 44,883 | Madden, Albert F. Machine for making grids for secondary batteries | 41,876 |
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| Lipe, Francis A., et al. Chair | 44,126 | Mailloux, Cyprien O. System of electric distribution | 44,129 |
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| Lippitt, Theodore C. Wrench | 44,935 | Major, Carl O. Watch bracelet | 44,013 |
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| Lister, Robert Ashton, et al. Separator for liquids | 43,300 | Malcolm, William B. Water tank | 43,941 |
| Little, Albert E., et al. Wind-mill | 43,405 | Mallett, William G., et al. Lubricator | 44,516 |
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| Littlejohn, Charles F. Steam engine | 41,808 | Maloon, Edgar H., et al. Plough | 43,015 |
| Littlejohn, Charles F. Valve gear | 42,625 | Maltby, Arthur. Pneumatic tire | 44,939 |
| Lloyd, George. Stock feeder | 42,567 | Manley, Liston B. Inkstand | 42,737 |
| Lloyd, Henry H. Storage battery | 43,574 | Mann, Joseph R. Process of making scythes | 41,804 |
| Lloyd, Marshall B., et al. Reel for wire working machines | 42,029 | Mannebach, Caspar. Measuring and drafting device for garments | 43,302 |
| Lloyd Thomas. Burnisher | 44,774 | Manning, James A. Straw cutter | 42,673 |
| Loehrie, James. Cycle | 43,820 | Manning, Lemuel S. Car coupler | 43,686 |
| Lockwood, Hamor. Treatment of sewage | 43,650 | Manny, Eugene S., et al. Connecting nipple for heating radiators | 42,461 |
| Lockwood, John B. Clothes pin | 41,825 | Manson, William J., et al. Medicinal compound | 41,797 |
| Loetscher, Christian. Chain tool mortising machine | 42,347 | Mantey, Henry. Mill stone | 44,363 |
| Loewenberg, Joseph, et al. Electric car lighting system | 43,808 | Manton, Herbert L. Advertising apparatus | 41,928 |
| Lones, Jabez, et al. Tire for vehicles | 42,999 | Manton, Herbert L., et al. Cigar and cigarette | 44,124 |
| Long, Esther A. and Joseph H. Mattress frame | 43,393 | Marceau, Joseph Odilon. Railway car seat | 43,341 |
| Long, Isaac N. Curtain fixture | 43,020 | Marcy, Alexander. Transposing piano actions and key board instruments | 44,367 |
| Long, Samuel N. Can | 44,720 | Markley, John A. Car coupler | 44,578 |
| Long (S. N.) Syrup Company. Can | 44,718 | Marks, Harry A., et al. Neck yoke and pole connections | 43,125 |
| Longden, Charles E. Spring | 44,718 | Marks, Robert G. Apparatus for locking railway signals | 42,023 |
| Loomis, Edward Brooks. Dust guard for car windows | 43,090 | Marr, Charles K. Apparatus for automatically displaying advertisements | 43,483 |
| Lorois, Maurice. Gas engine | 43,329 | Marsh, Edwin. Range | 43,866 |
| Loud, Herbert. Pulley block | 44,918 | Marsh, George A. Table for preparing glass | 43,790 |
| Loud, Herbert. Snatch block | 42,957 | Marsh, Spencer S. Motor | 44,038 |
| Lovejoy, William W. Holder for catheters | 42,918 | Marshall, Anderson C. Thill tug | 42,330 |
| Low, Harriet S. Lamp heater | 44,203 | Marshall, James. Street car | 42,634 |
| Low, George. Lock for mail bags | 43,182 | Marshall, John W. Ore stamp | 43,910 |
| Lowrie, William P., et al. Packing case for bottles | 44,946 | Marsteller, Edwin Y., et al. Anti-cribbing device | 44,031 |
| Lowry, George. Stone crusher | 43,356 | Marston, Charles E. Boiler | 42,719 |
| Lucas, Aron. Cloth board | 43,293 | Martel, Emma. Support for curtain poles | 41,981 |
| Luce, Charles J., et al. Process of extracting fat from wool | 43,901 | Martin, Abraham S. and Stephen G., et al. Cut-off for sieves | 44,079 |
| Ludikar, Bohumil, et al. Stove | 43,503 | Martin, Abraham S. and Stephen G. Grain cleaner and grader | 44,080 |
| Ludwig, Gotthilf L. Drain for stall floors | 43,676 | Martin, Abraham S. and Stephen G., et al. Purifier, grader and separator | 42,357 |
| Ludwig, Heinrich. Furniture | 43,178 | Martin, Abraham S. and Stephen G., et al. Separator and grader | 44,823 |
| Luger, Joseph. Wind mill tower | 43,960 | Martin, Abraham S. and Stephen G., et al. Sieve | 44,822 |
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| Lukens, Charles M., et al. Heating apparatus | 43,744 | Martin, Abraham S., et al. Machine for grinding rolls | 42,713 |
| Lull, Phinas P., et al. Car coupler | 42,607 | Martin, Adelbert C., et al. Vehicle | 42,928 |
| Lundberg, Gustave. Scales | 41,713 | Martin, Albert D. Hot air furnace | 41,583 |
| Lundell, Robert, et al. Dynamo electric machine | 42,060 | Martin, Charles M., et al. Lubricator | 42,331 |
| Lundell, Robert, et al. Electric motor | 41,539 | Martin, George V. Trace buckle | 43,492 |
| Lundstrom, Carl J. Separator for liquids | 42,156 | Martin, James. Hydro-carbon motor | 43,886 |
| Lundy, John C. Band cutter and feeder for threshing machines | 43,501 | Martin, James P., et al. Hand device for affixing postage stamps, &c. | 44,276 |
| Lunge, George, et al. Method of producing basic lead salts | 43,535 | Martin, Morris. Thermostat | 42,689 |
| Lunken, Edmund H. Valve | 44,652 | Martin, Robert and David. Mechanical motion for pumping machines | 42,307 |
| Luther, Henry R. Frog for railway rails | 43,081 | Martin, Robert H. Non-conducting covering | 44,638 |
| Luyets, Charles. Brake for railways | 42,993 | Martin, Samuel W. Lawn mower | 44,976 |
| Lyman, Hiram D. Pump | 42,191 | Martin, Samuel W. Wind engine | 44,868 |
| Lyman, John S., et al. Signal for railways | 42,493 | Martin, Taylor. Process of embalming | 43,817 |
| Lyon, Frederick W. Dress stay | 42,856 | Martin, William A. Potato digger | 44,484 |
| Lyon, James C. Method of making floor covering | 44,619 | Martin, William T. Cooking apparatus | 44,233 |
| Lysaght Brothers & Co. Book rack | 44,324 | Martin, William Young. Brooch | 43,219 |
| Lyte, Cecil H., et al. Method of making wire netting | 44,028 | Martinette, Vincent P. E. Lock for the slots of blinds | 43,367 |
| Lyte, Farnham M. Method of producing basic lead salts | 43,691 | Marty, Auguste, et al. Boat and means for propelling same | 43,902 |
| Lyte, Farnham M. Electrode for decomposing metallic salts | 44,652 | Martyn, Arthur. Frame for mirrors and analogous articles | 42,034 |
| Lyte, Farnham M. Process of electrolytically decomposing fused metallic chlorides | 43,980 | Maskeyne, John N. and John N., jr. Typewriter | 44,259 |
| Lyte, F. M. and C. H. M. Electrolytic production of chlorine for metallurgical purposes | 43,981 | | |
| Lytie, Albert E., et al. Heater for fire places | 43,958 | | |
| Mable Automatic Car Coupler and Air Self-Coupler Co. Car coupler and air brake coupler | 42,679 | | |
| Mable, William. Car coupler and air brake coupler | 43,485 | | |
| MacAdam, Thomas C. Snow plough | 43,485 | | |
| MacArthur, John S., et al. Method of extracting gold and silver from ores | 44,706 | | |
| MacDonald, Randolph, et al. Electric motor | 44,621 | | |

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| Maskelyne Typewriter Co. Typewriter | 44,259 | McElroy, James F. Heater for street cars | 43,126 |
| Mason, George H. Rail brace | 43,396 | McElroy, James F. Heating apparatus for fruit cars | 43,117 |
| Mason, Harry R. Air brake and signal for railway trains | 41,519 | McElroy, James F. Rotary engine | 43,892 |
| Mason, Herbert E. N. Lamp | 42,243 | McElroy, James F. Storage heater for street cars | 43,755 |
| Mason, James H. Secondary battery | 44,917 | McElroy, James F. Supply station for car heating system | 42,269 |
| Mason, James H. Steam drop press | 41,857 | McElroy, James F. Switch for electricity | 43,565 |
| Mason, James P. and Amor J., et al. Machine for making washers and nuts | 42,658 | McElroy, James F. System of heating cars by electricity | 43,971 |
| Mason, John, et al. Road cart | 42,270 | McElroy, James F. System of lighting cars by electricity | 43,118 |
| Mason, Jonathan and Joseph, et al. Floor | 42,473 | McElroy, James F. Temperature regulator | 42,964 |
| Mason, Lewis Dean. Camp stool | 43,231 | McElroy, James F. Temperature regulator for fruit car heating apparatus | 44,006 |
| Mason, Volney W. Vise | 44,559 | McElroy, James F. Valve | 42,549, 42,974 |
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| Massey-Harris Company. Seeding machine | 43,392 | McEuen, Seth H., et al. Can opener | 44,659 |
| Mather, Alonzo C. Water power | 42,863 | McEvoy, Barnard. Disinfecting apparatus | 43,394 |
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| Mathews, Asa, et al. Skate | 41,594 | McFarland, James M. Faucet | 43,917 |
| Mathews, Alonzo C., et al. Damper | 42,251 | McFeat, William P., et al. Hand device for affixing postage stamps | 44,276 |
| Mathews, Frank, et al. Boot and shoe | 42,189 | McGillivray, George, et al. Draft equalizer | 44,251 |
| Mathews, Richard L., et al. Lubricator for pistons | 42,925 | McGlashan, William, et al. Jack for vehicles | 44,413 |
| Mathewson, Edward P. Furnace tap | 43,816 | McGowan, Stephen D. and Terrance B., et al. Thermostat | 42,448 |
| Mathieson, William. Dating stamp | 43,938 | McGrath, Cyrus D., et al. Inhaler | 41,990 |
| Mathison, Arthur. Eyelet | 44,576 | McGrath, William T. Register for cash | 41,888 |
| Mathison, James and Walter. Machine for hooping and heading kegs | 41,731 | McGray, Arthur. Apparatus for shipping live lobsters | 42,844 |
| Maurie, Joseph M. Obstetrical stirrup | 44,350 | McGuire, John S., et al. Drying attachment for scrubbing brushes | 44,743 |
| Maus, Daniel. Trimming attachment for knitting machines | 43,077 | McGuire, Michael A., et al. Hanger for trolley wires | 44,519 |
| Maxon, Daniel M. Steam engine | 42,244 | McHarrie, James, et al. Horse-shoe | 41,884 |
| May, John. Guard for knives | 41,789 | McHugh, Bernard. Device for cutting photograph mounts | 44,562 |
| McAlpine, Lewis L., et al. Car coupler | 44,033 | McIlvanie, Samuel. Wash bowl | 44,518 |
| McArthur, Alexander W. and James B. Game | 43,244 | McIntosh, Peter H. Cabinet for cream | 42,514 |
| McArthur, James, et al. Sash balance | 42,450 | McIntosh, Peter H. Creamer | 42,515 |
| McAvery (Thomas) & Sons. Flushing apparatus for water closets | 44,574 | McIntyre, Joseph, et al. Sleigh | 43,640 |
| McBean, Duncan G. Air pump attachment to wheels | 43,158 | McJanet, Thomas, et al. Machine for opening cans | 42,663 |
| McBride, Thomas J. Cultivator | 44,874 | McKay, Andrew B., et al. Hay carrier | 43,699 |
| McBurney, James. Memorandum | 41,774 | McKay, Andrew B., et al. Hay carrier pulley | 43,700 |
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ERRATA.

In Claim No. 44,101, instead of "Wilson Parker, Bradford," read "Wilson Parker Bradford."
 In Claim No. 44,559, instead of "James A. Knowlton," read "Thomas A. Knowlton."
 In the fifth line of Claim No. 44,864, instead of "strings," read "springs."
 On page XIX of Annual Index to Inventions, the words "Sulky Plough. George Wedlake, et al. 42,032" was inadvertently omitted.

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INVENTIONS PATENTED.

NOTE.—Patents are granted for 18 years. The term of years for which the fee has been paid, is given after the date of the patent.

No. 41,442. Bean Harvester and Weed Cutter.

(Moissonneuse et extirpateur, pour les fèves.)

William Carver, Scottsville, New York, U.S.A., 3rd January, 1893; 6 years.

Claim.—1st. A bean harvester constructed to cut two rows simultaneously, having a rigid trapezoidal frame, in combination with four separate and independent cutting blades, two secured at the rear of the frame and two at the front of the frame, the rear blades having their cutting edges turned toward each other and the forward blades having their edges turned away from each other, one rear and one forward blade on the same side of the frame constituting a pair to coact in cutting a row of beans, each of the blades being independently adjustable on the frame, substantially as shown and described. 2nd. A bean harvester for cutting two rows of beans simultaneously, having a frame provided with two pairs of cutting blades, one pair at the right and one at the left of the machine, the two blades of each pair co-operating to cut a row of beans, and being secured to the frame at points respectively at the right and at the left of the row of beans with their edges turned in opposite directions, substantially as shown and described. 3rd. A bean harvester having a frame with cutting blades secured thereto to cut two rows simultaneously, in combination with dividers for the beans, one row being between the two rows and one on the outside of each of said rows, the two outside dividers extending back of the central divider and each having a laterally expanded part in rear of said central divider, substantially as shown and for the purpose set forth. 4th. A bean harvester for cutting two rows of beans simultaneously, having a frame provided with two pair of cutting blades, one pair at the right and the other at the left of the machine, the two blades of each pair co-operating to cut a row of beans, and secured to the frame at points respectively at the right and at the left of the row of beans, with their edges turned in opposite directions, in combination with three dividers for the beans, one divider being between the two rows of beans and the other two being at points respectively at the outside of said rows of beans, substantially as shown and described. 5th. A harvester for beans, having a frame with cutting blades secured thereto to cut two rows of beans at once, in combination with dividers for the beans, one on either side of each of said rows, secured to the frame so as to have the lines of the adjacent dividing blades, substantially as shown and described. 6th. A bean harvester for cutting two rows of beans simultaneously, having a frame provided with two pairs of cutting blades, one pair at the right and the other at the left of the machine, the two blades of each pair co-operating to cut a row of beans, in combination with a draft tongue for the machine, held adjustably at two places on the machine, substantially as and for the purpose specified.

No. 41,443. Ironing Machine.

(Machine à repasser le linge.)

John Henry Wendell, Detroit, Michigan, assignee of Fred Clow Wendell, Brooklyn, New York, both in the U.S.A., 3rd January, 1893; 6 years.

Claim.—1st. In an ironing machine, the combination of a hollow drum, a series of rolls co-operating with the periphery of the drum on one side, and a traveling apron co-operating with the periphery of the drum on the opposite side. 2nd. In an ironing machine, the combination of the rotary steam heated metallic drum, the series of felt covered rollers acting upon its upper surface, and the endless apron arranged to act on its under surface. 3rd. In combination with the steam heated metallic drum, the series of overlying rollers, covered with felt or analogous material, the endless apron encircling the lower portion of the drum to return the fabric to the front of the machine, and the second apron or carrier co-operating with the first to return the fabric to and deliver it to the rear of the machine. 4th. In an ironing machine, in combination with a rotary steam heated drum, and means substantially as described for maintaining the fabrics in contact with the drum throughout substantially its entire circumference, that they may return to the point of introduction, a secondary carrier to deliver the fabrics after leaving the drum to the rear of the machine. 5th. In an ironing machine, the hollow drum, in combination with the series of felt covered frictionally driven rolls. 6th. In an ironing machine, the hollow drum, in combination with the series of felt covered frictionally driven rolls adjusted to act with successively increasing pressure toward the drum.

No. 41,444. Sawing Machine. (Scierie.)

Mary Agnes Harreld, assignee of Benjamin Edward Harreld, and Andrew Franklin Harreld, all of Hollowell, Kansas, U.S.A., 3rd January, 1892; 6 years.

Claim.—1st. In a sawing machine, the combination, with a main frame, of a supplemental frame, the hand lever pivoted to the main frame, a rock shaft mounted also on the main frame, the link arm connecting said shaft and hand lever, and the link arm connecting the shaft and supplemental frame, whereby when the lever is thrown back the supplemental frame will be elevated, and *vice versa* substantially as shown and described. 2nd. In a sawing machine, the combination, with a main frame having a buck arranged upon the longitudinal centre of the same, and dust chutes arranged upon each side of the buck, of a supplemental frame hinged to the main frame and divided longitudinally into two horizontal saw carrying frames, and saws arranged to reciprocate in said frames, substantially as shown and described.

No. 41,445. Disinfecting, Deodorizing and Preserving Compounds. (Composition pour désinfecter, purifier et préserver.)

Frank G. Smith, Detroit, Michigan, assignee of Jean Marie Raymond, Paris, France, 4th January, 1893; 6 years.

Claim.—As a disinfectant, a composition of alum, sulphate of aluminum, hyposulphate of soda, sulphite of soda, sulphate of soda, boracic acid, sulphate of zinc, and iodomercurate of potassium in a liquid or solid form, as and in the proportions and for the purposes described.

No. 41,446. Apparatus for Roasting Peanuts.

(Torréfacteur de pistache.)

J. Charles F. Atsatt, Mattapoisett, Massachusetts, U.S.A., 4th January, 1893; 6 years.

Claim.—1st. A device for roasting peanuts, consisting of the shell *a*, having a heat induction orifice in its bottom, and removably

supported on the base R, the shell *g*, having an open top, and supported on legs, resting on the bottom of the shell *a*, and provided with the false bottom *m* and *n*; and the shallow baskets *a*, having handles *p* adapted to be contained in the shell *g*, one above the other, substantially as described. 2nd. A device for roasting peanuts, consisting of an outer shell having double walls, a cover adapted to be removed, a bottom provided with a heat induction orifice, an inner shell having an open top, supported on legs resting on the bottom of said outer shell, and extending to or near the top of said outer shell, and provided with an inner and an outer false bottom, and shallow wire baskets adapted to be lowered into said inner shell and rest one upon the other, substantially as described. 3rd. In a device for roasting peanuts, the combination of an outer shell having a removable top, and a heat induction orifice in its bottom, an inner shell, having an open top and an air space between its bottom and sides and the outer shell, and provided with an inner and an outer false bottom, and shallow baskets adapted to rest one above the other, and within said inner shell, substantially as described. 4th. A device for roasting peanuts, consisting of an outer shell having a cover adapted to be removed, a bottom provided with a heat induction orifice, an inner shell having an open top, supported within said outer shell and extending to or near its top, and shallow baskets adapted to be lowered into said inner shell, and rest one above the other, substantially as described.

No. 41,447. Method of and Apparatus for Electric Lighting. (*Méthode et appareil d'éclairage électrique.*)

George John Parfitt and George John Tom Jelley Parfitt, both of Keynsham, Somerset, England, 4th January, 1893; 6 years.

Claim.—1st. In series electric lighting, subdividing the main line into several branches through which the current flows, and which branches have their lamps arranged in them in groups and in series, the said branches being metallically connected together in pairs, in order that an excess of current passing through one part of the branch shall be again equally divided before passing to the next lamps, substantially as described. 2nd. The employment of an automatic switch adapted to be operated when an excess of current passes, in order to allow part of the current to flow to the lamps whilst the other part flows to a resistance, substantially as described.

No. 41,448. Rocking Chair. (*Fauteuil à bascule.*)

Rachel Rebecca Coon, Philadelphia, Pennsylvania, assignee of James B. Pooley Clementon, New Jersey, both in the U.S.A., 4th January, 1893; 6 years.

Claim.—1st. As an improved article of manufacture, a chair provided with two seats and backs facing in opposite directions, three rockers and three pairs of legs, a front and rear leg constituting a pair, the legs of the middle pair resting on a shorter rocker than the legs of the outer pairs, but the legs of the said middle pair being farther apart from each other, whereby the front of the seats projecting beyond the rear edge of the adjacent seat are properly supported, substantially as described. 2nd. As an improved article of manufacture, a chair consisting of two backs facing in opposite directions, two seats having their front edges facing in opposite directions, the front edge of each seat extending beyond a plane passing through the rear edge of the adjacent seat, three pairs of legs supporting said seats, and rockers supporting said three pairs of legs, substantially as described.

No. 41,449. Motor. (*Moteur.*)

Edmond C. Wheat, Colmesneil, Texas, U.S.A., 4th January, 1893; 6 years.

Claim.—1st. In a motor of the class described, the combination with the frame work, a main shaft journaled therein, a main gear and two pinions mounted on the shaft, and means for transmitting motion from the gear, of transverse shafts located at opposite sides of the main shaft, drums mounted thereon, cranks for the shafts, weights, guides, and cables passed over the guides and connected with the weights and drums, and gears mounted on the shafts and adapted to engage with the pinions of the main shafts, substantially as specified. 2nd. In a motor of the class described, the combination with the frame work, a counter shaft, a main shaft, a gear thereon, means for communicating motion from the gear to the counter shaft, and pinions mounted on the main shaft, of opposite weight operated shafts, movable boxes for the same, means for operating the boxes, and gears mounted on the weight operating shafts and engaging the pinions of the main shaft, substantially as specified. 3rd. In a motor of the class described, the combination with the frame work, the central main shaft, the large gear thereon, the small pinions on the main shaft, the counter shaft, and means for communicating motion from the large gear of the main shaft to the counter shaft, of the opposite pairs of boxes mounted for sliding on the frame, U-shaped bails connecting at their terminals to the boxes, levers fulcrumed on the frame work and connected to the bails, shafts located in each side of the main shaft and journaled in the boxes, said shafts terminating in cranks, gears loosely mounted in the shafts and adapted to engage the pinions of the main shaft, ratchet wheels mounted on the shafts rigidly, pawls pivoted to the gears and engaging the ratchet wheels, opposite guides, cables passed in reverse directions around the slidably shafts,

and weights connected to the outer ends of the cables, substantially as specified. 4th. In a motor of the class described, the combination with the frame work, the shaft 9, the gears 10, 11 and 12, mounted thereon, the counter shaft 53, and an intermediate train of gearing from the gear 10 to the gear on the counter shaft, of the boxes 29 mounted in ways upon plates 28 at opposite sides of the shafts 9, the winding shafts 30 and 32, mounted in the boxes *m*, the gears 44 and 45, loosely mounted on the shafts 30 and 32, the ratchet wheels 62, rigid on the shafts 30 and 32, the pawls 63, pivoted to the gears 44 and 45 and engaging the ratchet wheels, the ratchet wheels 61, mounted upon the shafts 30 and 32 at the inner sides of two of the boxes 29, the pawls 59, pivoted to the boxes for engaging the ratchet wheels and having inclined shoulders 60 at their front ends, the cam blocks 62, located in the paths of the shoulders, and means for moving the shafts 30 and 32 and their boxes, so as to throw the gears 44 and 45 into and out of engagement with the pinions 11 and 12 of the shaft 9, substantially as specified.

No. 41,450. Cash Indicator and Recorder.

(*Régistre et indicateur de monnaie.*)

John Sharpe, Toronto, Ontario, Canada, 4th January, 1893; 6 years.

Claim.—1st. In a cash recorder or indicator, a series of tubes suitably supported and containing a plurality of discs, a receptacle or receptacles for receiving the discs, and means whereby the discs are transferred one at a time from the tubes to the receptacle or receptacles, as and for the purpose specified. 2nd. In a cash recorder, a series of upper tubes supported in the frame of the machine and containing a plurality of discs, a series of lower tubes corresponding to the upper tubes, and a series of keys actuating means whereby the discs are transferred one at a time from the upper tubes to the lower tubes, as and for the purpose specified. 3rd. In a cash recorder, a series of upper tubes supported in cross bars in the frame of the machine, each of which contains a plurality of discs, a series of lower tubes corresponding to the upper tubes, each of which is located slightly to the rear, and to one side of its corresponding upper tube, and a series of key push bars provided with a notch designed to receive and transfer the discs from the upper to the lower tubes, as and for the purpose specified. 4th. A series of upper tubes A, supported in the cross bars in the frame of the machine, and containing a plurality of discs *a*, a series of lower tubes B, having a plurality of rows of holes obliquely arranged, and a graduated scale of numbers arranged on them, in combination with a series of key push bars, each of which has a notch *b*¹ and spring I, as and for the purpose specified. 5th. The combination with the tubes A, containing a plurality of discs *a*, and the tubes D, designed to receive the discs, of the key push bars H, rocking detents K, arm P, rods L, provided with indicating plates *l*, and pin *l*¹, and swinging hangers N, provided with a cross bar *n*, and dog O, and spring *r*, as and for the purpose specified. 6th. In a machine of the class described, the combination with the push bars H, having a shoulder *h*, of the rod S, secured at its end in the pivot arms *s*, and the hooked arm *s*¹, pivoted catch T and notch *t*, arranged as and for the purpose specified. 7th. In a machine of the class described, the combination with the push bars H, having a shoulder *h*, of the rod S, secured at its end in the pivot arms *s*, and the hooked arm *s*¹, pivoted catch T, notch *t*, and spring U, arranged as and for the purpose specified. 8th. The combination with the tubes A, designed to contain a plurality of discs *a*, of the tubes D, designed to receive the plurality of discs *a* from the tubes A, the tubes D, being supported in the base of the plate E of the frame, which base plate E has a slide *e*, extending from end to end of the base plate directly beneath the tubes, as and for the purpose specified.

No. 41,451. Press for Moulding Glass Insulators.

(*Presse pour le moulage des isoloirs en verre.*)

Lawrence Brickett Gray, Boston, Massachusetts, U.S.A., 4th January, 1893; 6 years.

Claim.—In a press for moulding insulators, the combination with a case A, having stops *a*³, of a head or block B, movable in said case, and having downwardly extending parts *b*³, *b*⁴, with inclined surfaces *b*⁵, the plunger members E, E¹, the upper parts of which have dovetailed tongue and groove connections with said parts *b*³, *b*⁴, and said members having projections *c*⁷, beneath said stops, D, D¹, having dovetailed tongue and groove connections with the inclined faces of said wedge block, substantially as set forth. 2nd. In a press for moulding insulators, the combination with a case A, of a sectional plunger consisting of two parts or members E, E¹, therein, and two members D, D¹, longitudinally and laterally movable in said case, a longitudinally movable head or block B, for operating said members E, and E¹, and a longitudinally movable wedge block C, for operating said members D, D¹, and said head or block B. 3rd. The combination with the case A, of the head or blocks B, movable in said case, and having the recess *b*², of the plunger members D, D¹, longitudinally and laterally movable in said case, and arranged when lifted, to enter at their upper parts in said case, the plunger members E, E¹, laterally movable in said case, but held from longitudinal movement therein, said members E, E¹, having dovetail tongue and groove connections with said

head B, and said members D, D', having similar connections with said wedge block C. 4th. The combination of the case A, having the stops a^3 , with the plunger members E, E', having the shoulders e^2 , and section e^2 , shaped as specified, with the actuating head or block B, shaped and connected with the said section e^2 , as specified as and for the purposes described. 5th. The press for moulding threads in glass and similar insulator and other mouldable material herein shown and described.

No. 41,452. Dumping Wagon. (Char à bascule.)

Samuel J. Forsgard, Waco, Texas, U.S.A., 4th January, 1893; 6 years.

Claim.—1st. In a dumping wagon, two dumping boxes or bodies, an arched bar arranged at the meeting ends of such bodies and adapted when raised, to tilt one of said bodies, and having arms that extend under the end of the other body, and means for throwing said bar, all in combination, substantially as shown and described. 2nd. The combination with a dumping body and the wagon frame, of an end gate held to the frame and mounted to be rocked, a link connected with the gate and with an operating lever, for rocking the gate, and catches adapted to automatically cause the gate to engage the body when the gate is brought to the closed position, substantially as described.

No. 41,453. Coupler Head for Air Brake Hose.

(*Joint pour boyaux de frein atmosphérique.*)

Samuel Masson Beery and John H. Brown, both of Chicago, Illinois, U.S.A., 4th of January, 1893; 6 years.

Claim.—In a coupling for air brake hose, the combination with a hollow head A, having openings in its back and face, of a nut B, screwed into the back opening, and having a threaded socket m in its inner face, and an adjustable clamp D, for a gasket C, said clamp being operative through the face opening in the gasket packed coupler head, and comprising a rotary screw stem n , in the nut socket m , and a spider l , carrying a clamping ring k , and confined and swivelled on the stem n , to rotate freely thereon, said ring bearing outwardly against the gasket flange about the inner margin of the face opening in the coupler head, substantially as and for the purpose set forth.

No. 41,454. Telegraphic Apparatus.

(*Appareil télégraphique.*)

Josiah Atkins Parker, St. Louis, Missouri, joint inventor with and assignee of Leland Laffin Summers, of Chicago, Illinois, U.S.A., 4th January, 1893; 6 years.

Claim.—1st. An electric telegraph in which the transmitting instrument has transmitting keys, each of which has two buttons, or their equivalent, adapted to receive the pressure of the like finger of either the right or left hand of the operator, so that the key may be operated by either hand at will. 2nd. An electric telegraph having circuit making and breaking keys, each of which has two buttons, or their equivalent, adapted to receive the pressure of the adapted to be excited by the keys and markers operated by the said having a number of divaricate circuit closing or breaking keys, each key having at the ends finger buttons for the corresponding fingers of the right or left hands, substantially as and for the purpose set forth. 3rd. The combination, in an electric telegraph apparatus, of divaricate circuit closing or breaking keys, each key having at the ends buttons for the corresponding fingers of the right and left hands, and electro magnets excited by the keys and having armatures whose levers have markers thereon adapted to mark a ribbon in a series of marks transverse to the ribbon, substantially as and for the purpose set forth. 4th. The combination in an electric telegraph, of keys or pairs of keys arranged for the thumbs and corresponding fingers of both hands, so that either of the thumbs or either of the corresponding fingers, by action upon its proper key, shall produce the same result as the thumb or corresponding finger of the other hand, and electric contacts varying in number for each key or pairs of keys, and a single line wire for connection with such electric contacts, substantially as set forth. 5th. The combination of two or more keys adapted to make and break electric circuit contacts of one polarity, varying in number, of another polarity varying in relative position in the path of keys, a single line wire and necessary electrical energy, battery or dynamo, substantially as set forth. 6th. The combination of the divaricate keys adapted respectively for the thumbs and like fingers of the two hands, an electric contact brush on each key, distinct electric contact pieces 8 for each key in the path of the brushes, and varying in number for the several keys, ground or equivalent connection to the contact pieces 8, a battery, and a line wire in electric connection with the contact pieces 8, substantially as set forth. 7th. The combination of the divaricate electric circuit making and breaking keys, the sets of insulated contact pieces 8 and 9 connected respectively with batteries sending positive and negative currents, a contact brush upon each key adapted for contact with the pieces 8 and 9 of each set, and a line wire in electric connection with all the keys, substantially as and for the purposes set forth. 8th. The combination of two or more keys adapted to make and break electric circuit, distinct, contact pieces 8

for each key in the path of brushes upon the keys, a battery with ground or equivalent connection, connected with the contact pieces, a line wire connected to the keys, a roller 41 with contact studs 48, 48', an escapement actuating the roller, a relay in connection with the line wire and actuating the escapement, brushes 56, 56' adapted for contact with the studs, and impression armatures 58 of relays connected with the brushes 56, &c., and studs 48 &c., by a local circuit and battery, substantially as and for the purpose set forth. 10th. In an electric telegraph, using a single line wire between stations; the combination of a number of transmitting keys adapted to be depressed simultaneously, and contacts of various polarity in the path of such keys, each key sending a different combination of the currents to line varying in number and character, substantially as set forth. 11th. The combination of two or more sets of contact pieces 8, 9, the sets having a variable number of the pieces 8, in connection with an electric battery sending a positive current, and pieces 9 in connection with a battery sending a negative current, two or more keys having brushes adapted for contact with the pieces 8, 9, and a single line wire connected to the several keys, and through the keys with the contact pieces, substantially as and for the purpose set forth. 12th. The combination with two or more sets of contact pieces 8, 9, the sets having a variable number of the pieces 8 in connection with a battery sending a positive current, and the pieces 9 in connection with a battery sending a negative current to the line, two or more keys, each key having an electric contact brush playing upon one of the sets of contact pieces only, a single line wire in connection with the keys and through the keys with the contact pieces, a polarized magnet 24 in the line acting only with a negative current, and a compound polarized magnet 27 in the line acting with both positive and negative currents, a roller 41 having studs 48, 48', 48'', 48''', 48''', arranged as set forth, the described means for turning the roller forward step by step, and backward by a single movement, the movable brushes, 56, 56', 56'', 56''', relays 52, 52', 52'', 52''', with impression armatures 58, substantially as and for the purpose set forth. 13th. In an electric telegraph, the combination of a transmitting instrument consisting of three or more keys arranged in pairs, for the corresponding finger of either hand to send same signal to line, contacts of varied polarity, a single line wire and receiving instruments responding to such varied polarity. 14th. In a system of exchange telegraphy, wherein a number of offices are adapted to be connected with each other through a central exchange, the combination of transmitting instruments having a number of keys arranged in pairs so that the corresponding finger of each hand sends the same signal, and which are further adapted to be depressed simultaneously in sending signals to line, connecting lines with each office, the exchange proper receiving instruments and batteries, or other source of electrical energy. 15th. The combination, in a telegraph system having a number of stations, of a single line wire extending to all the stations, a transmitting device consisting of a number of keys arranged in pairs so that either hand can send the same signal, a recording device at each station and an exchange system by which any two stations may be thrown into connection, for the purpose set forth. 16th. In a system of telegraphy, over a single line wire, using keys adapted to be pressed down simultaneously, an interlacing arrangement of electrical contacts by which no two signals are completed at the same time, and one series of contacts does not conflict with the other series although parts of one may be parts of another, substantially as and for the purpose set forth. 17th. In a system of telegraphy, over a single line wire employing transmitting instruments, of a number of keys arranged in pairs so that either hand can send the same signal, such keys being adapted to be depressed simultaneously in sending signals over the wire, contacts of varied polarity in the path of such keys for the purpose of defining the route of the electric current, and transmitting signals over the same, substantially as set forth. 18th. The combination, in a telegraph system having a number of stations, of a single line wire extending to all the stations, a transmitting device having a number of keys, each adapted to send a varying number of impulses of opposite polarity along the line wire by a single movement of the key, a selecting device actuated by the impulses of one polarity, and a recording device thrown into circuit with said selecting device by the impulses of the opposite polarity, substantially as set forth. 19th. The combination, in a telegraph system having a number of stations, of a single line wire extending to all the stations, a transmitting device having a number of keys, each adapted to send a varying number of impulses of opposite polarity along the line wire by a single movement of the key, a selecting device actuated by the impulses of one polarity, a normally open local circuit having within it said selecting device and being closed by the impulses of the opposite polarity, and a recording device including in and actuated by said local circuit, substantially as set forth. 20th. The combination, in a recording telegraph, of means for sending a succession of impulses of opposite polarity over the line, a number of relays having markers upon their armatures at the receiving station, a revoluble drum or cylinder having contact pins 48, 48', &c., rotated by the impulses of one polarity in the main line, the local circuit 57, the relay 67, actuated to close said circuit 57, by the impulses of the opposite polarity in the main line, the relay 55, having the contact brushes 56, 56', &c., actuated by circuit 57, to contact with said pins 48, 48', &c., the recording relays having connection with said contact brushes, and the local circuits 51 including within it the said brushes, cylinder and recording relays, substantially as set forth.

No. 41,455. Railway Rail. (*Rail de chemin de fer.*)

Plimmon Henry Dudley, New York, State of New York, U.S.A.,
9th January, 1893; 6 years.

Claim.—1st. A railway rail, the head of which is united with the web by fillets having a broad or open curve, the web being gradually thickened as it approaches the base, the gradual thickening of the web beginning at a point above the centre of the web, and the base increasing rapidly in thickness from its thick edges toward the web, substantially as set forth. 2nd. A railway rail, having the width of its head equal to about one-half the height of the rail, the depth of the head from the top to the intersection of the planes bounding the under sides of the head, about one-half the width of the head, the head being joined to the web by fillets having a broad or open curve, and the neutral axis of the rail lying below the middle point of the height of the rail, substantially as set forth. 3rd. A railway rail, having the width of its head equal to one-half or more of the height of the rail, the depth of the head about one-half its width, and the curves of the opposite sides of its web, taken in a vertical plane transverse to the rail drawn from centers above the middle point of the web, whereby the web is thickened more at its lower portion than at its upper portion, exclusive of the fillets, substantially as set forth.

No. 41,456. Machine for Reducing Crude Peat to Fuel. (*Machine pour reduire la tourbe crue en combustible.*)

The Ontario Peat Fuel Company, Toronto, Ontario, assignee of
Archibald A. Dickson, Côte St. Antoine, Quebec, both in Canada, 9th January, 1893; 6 years.

Claim.—1st. Two or more cylinders operating in connection with each other, one or more of the said cylinders being hollow, and covered by an absorbent material, and perforated to the interior for drainage, substantially as and for the purpose specified. 2nd. A machine for the manufacture of peat fuel from the crude material, consisting of a tapering case having a tapering screw, a pair of hollow cylinders covered with an absorbent material, and having perforations to the interior for drainage, and a spout connecting the bottom of the tapering case with the cylinders, substantially as and for the purpose specified. 3rd. A machine for the manufacture of peat fuel from the crude material, consisting of a tapering case having a tapering screw, a pair of hollow cylinders covered with an absorbent material, and having perforations to the interior for drainage, and a spout connecting the bottom of the tapering case with the cylinders, and a pair of rubber-faced rollers arranged below the absorbent rollers, and adapted to receive the material from the absorbent rollers, substantially as described. 4th. A machine for the manufacture of peat fuel from the crude material, consisting of a tapering case having a tapering screw, a pair of cylinders covered with an absorbent material, and having perforations for drainage, and a spout connecting the bottom of the tapering case with the cylinders, and a pair of rubber faced rollers arranged below the absorbent rollers and adapted to receive the material from the absorbent rollers, and a drying cylinder connected to said rubber-faced rollers, substantially as described. 5th. In a machine for reducing peat to fuel, a tapering case formed of a series of flanged plates arranged with openings at their meeting edges; substantially as and for the purpose specified. 6th. The rectangular tapering drainage case, having a tapering screw and corners provided with drainage holes, substantially as described. 7th. In combination with the vertically arranged tapering case and its conveyor screw vertically arranged, the cylinders having the absorbent covering and perforations to the interior, and a spout connected to the lower end of the conveyor case, and having a flattened mouth arranged between the rollers, substantially as described. 8th. In combination with the drying mechanism of a peat machine, the compressing mechanism consisting of a main driving shaft, a plunger operated thereby, guides for moving the material laterally to bring it in front of the plunger, and supplemental plungers feeding the material to the guides, substantially as described. 9th. The compressing mechanism, consisting of a plunger and guides and their operating toggles, said guides having curved wings 27, the supplementary plungers, and mechanism for operating said plungers, the parts being arranged to operate, substantially as described. 10th. In a peat machine and in combination with a suitable feed, a pair of rollers having perforations and covered with absorbent material, whereby the moisture is extracted from the material and discharged through the rollers, substantially as described. 11th. In combination, a tapering case having a tapering feed and compressing screw, a pair of cylinders in connection with the bottom of the feed case by means of a spout, a second pair of cylinders below the first pair, a drying cylinder adapted to receive the material after its passage through the second pair of rollers, and to agitate and dry the same, and a compressing mechanism adapted to receive the material from the drying cylinder, substantially as described.

No. 41,457. Treadle Apparatus for Driving Machinery. (*Appareil de pedales pour mecanismes de commande.*)

James Lyons Sampson, London, England, 9th January, 1893; 6 years.

Claim.—1st. In treadle apparatus for driving sewing or other machines, the combination, with a treadle, a crank and a rod that connects the said treadle and crank, of a spring or springs arranged between and so as to act against both the treadle and the connecting rod, so that energy will be stored in it during a portion of each half revolution of the crank, and such energy will be given out when the crank arrives on either of its dead centres, substantially as herein described for the purposes specified. 2nd. In treadle apparatus for driving sewing or other machines, the combination, with a treadle, a crank and a rod connecting them, of a coiled spring movable with said treadle and connecting rod, and having each of its ends arranged to act alternately against the treadle and the connecting rod, substantially as herein described for the purposes specified. 3rd. In treadle apparatus for driving sewing or other machines, the combination of a treadle provided with a pin or projection, a crank, a rod connecting said treadle and crank and provided with a pin or projection, and a spring mounted on the pin connecting said treadle and rod and having its ends arranged to act alternately on each of the pins or projections on the said treadle and rod, substantially as herein described for the purposes specified. 4th. In treadle apparatus for driving sewing or other machines, the combination of a pendulous treadle provided with a pin or projection, a crank, a rod connecting said treadle and crank and provided with a pin or projection, and a coiled spring mounted on the pin connecting said treadle and rod, and having its ends arranged to act alternately on each of the pins or projections on said treadle and rod, substantially as herein described for the purposes specified.

No. 41,458. Attachments for Printing Presses.

(*Attache pour presses à imprimer.*)

Emil Meier and Louis Weiss, both of New York, State of New York, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. In a printing press having a reciprocating table and distribution rollers to contact with the table, the combination, with the table, of a bar pivoted at one end of the table, so as to contact with the rollers, substantially as shown and described. 2nd. The combination, with the distribution rollers and the reciprocating table, of a bar pivoted at the edge of the table next the rollers, the said bar having its back edge incised from the middle towards the ends, substantially as described. 3rd. The combination, with the distribution rollers and the reciprocating inking table, of a support secured to the under side of the table and projecting from its free edge, and a bar pivoted to swing horizontally on the support, substantially as described.

No. 41,459. Apparatus for Rolling Plate or Sheet Glass. (*Appareil pour laminer les plaques de verre ou vitre.*)

James William Bonta, Wayne, Pennsylvania, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. In a plate glass rolling machine, the combination of a presser roller, a movable platen passing the glass under said roller, a vertically sliding frame having journals carrying a second platen, devices for bringing both of said platens together and locking their journals, means for raising and lowering said locked platens, devices for rotating the platens and for releasing the same with the unrolled side of the glass uppermost, and means for moving the platen containing the glass through or past the presser roller, substantially as set forth. 2nd. The combination of a presser roll, a power mechanism, a movable platen, a normally stationary platen, and devices for locking the platens together, raising and lowering them, and rotating them to reverse the sides of the plate glass relatively to the presser roll, substantially as set forth. 3rd. The combination of an adjustable presser roller for rolling plate glass, a movable platen passing in one direction under said roll, a normally stationary platen in line with said movable platen when it completes its movement for rolling the glass on one side thereof, devices for locking said platens together and for rotating them to bring said last named platen to position for passing the plate through or under the presser roll to roll the opposite side of the glass, substantially as set forth. 4th. In a glass plate rolling machine, a presser roll, two separate platens, locking devices for supporting said platens with the plate glass between them, and devices for rotating the platens, substantially as set forth. 5th. The combination of a vertically moving frame, journals on said frame for supporting a platen, actuating devices for raising and lowering said platen, and a second platen when brought into alignment therewith, and locking devices for securing said platens together and for rotating them, substantially as set forth. 6th. The combination of a vertically moving frame, journals secured thereto, tubular sleeves surrounding said journals, means for sliding said sleeves, and devices for raising and lowering said frame, substantially as set forth. 7th. The combination with the platens D, D', means for raising and lowering and for rotating them, of the laterally moving guides or supports C, substantially as set forth. 8th. In a plate glass machine, a platen supported on end journals, a sliding platen adapted to register with said journalled

platen, and devices for bringing said platens together, locking them and rotating the same, substantially as set forth. 9th. In a plate glass rolling machine, a presser roller, a reciprocating platen, a second platen supported upon a vertically sliding frame carrying gear wheels in engagement with said platen, means for locking said platens together, and actuating mechanism, substantially as set forth.

No. 41,460. Horse Attaching Device for Lawn Mowers. (*Appareil pour atteler les chevaux aux faucheuses de pelouses.*)

Jacob V. Rowlett, Richmond, Indiana, U. S. A., 9th January, 1893; 6 years.

Claim.—1st. In combination, with a hand lawn mower, a horse attaching device therefor comprising a draft bar and accessories, substantially as described, and supporting arms connected at one end to said bar, and at the other end to the mower at a point to the rear and above the axle of the drive wheel, for the purpose set forth. 2nd. In a lawn mower, a horse attaching device consisting of a draft bar and supporting arms therefor having clamps in their ends for connection with the handle brace, as described. 3rd. In combination, with a hand lawn mower, a horse attaching device therefor comprising a draft bar and accessories, substantially as described, supporting arms connecting said bar with the mower at a point to the rear and above the axle of the drive wheel, a set of rollers arranged on said bar and a draft chain adapted to pass a round said rollers, and operating in the manner and for the purpose set forth. 4th. In a horse attaching device for lawn mowers, the combination, with the draft bar, of the supporting arms therefor having connection with the handle brace, and the rollers *d, e, f,* and the draft chain adapted to pass around said rollers, and provided with hooks for connection with the traces, all substantially as described.

No. 41,461. Sectional Horse-shoe. (*Fer à cheval en section.*)

Charles Henry Doran, Olean, New York, U. S. A., 9th January, 1893; 6 years.

Claim.—1st. A horse-shoe formed in two independent sections, the toe end of one section having an arcuate convexity therein, and the corresponding end of the other section having an arcuate concavity fitting said convexity, the meeting faces of said sections being also oppositely bevelled or inclined, the said sections being free to move upon one another at their point of engagement, substantially as specified. 2nd. A horse-shoe comprising two sections *A, A'*, the toe end of one of the sections having an arcuate concavity *c*, the wall of which is inclined from top to bottom, the opposing section terminating at its toe end in an arcuate convexity of the same radius as the concavity, but reversely inclined on its face, said sections being free to move upon one another at their point of engagement, substantially as specified.

No. 41,462. Car Coupling. (*Attelage de chars.*)

George C. Harlin, Seattle, Washington, U. S. A., 9th January, 1893; 6 years.

Claim.—1st. The car coupling, having the draw bar provided with a worm and gear connection with its actuating shaft, substantially as set forth. 2nd. The car coupling, having the draw bar provided with a segmental gear and the actuating shaft provided with a worm adapted to mesh with said gear, substantially as specified. 3rd. The car coupling, having the draw bar provided with a segmental gear and a cam stop, the support for said draw bar having a slot to receive said cam stop and the actuating shaft, having a worm meshing with said gear, substantially as specified. 4th. The car coupling having its actuating shaft adapted to be operated by a drum shaft having a spline connection with the drum or spool, the drum having a chain or cable connection with the first named shaft, substantially as set forth. 5th. In a car coupling, the ordinary link receiving draw head having at one end a socket to receive said link and a pin adapted to effect engagement between the draw head and the bracket, substantially as specified. 6th. In a car coupling, the combination with a hollow pivotally secured, draw bar having a headed stem *a*, passing longitudinally therethrough and supported in bearings *b*, said draw bar being provided with engaging shoulders *Z*, and a *P*, on the inner end of said stem, of the worm and gear connection *d, e,* and an actuating shaft, as specified.

No. 41,463. Apparatus for Turning Bags. (*Appareil pour tourner les sacs.*)

Louis Evarest Barbeau, London, England, 9th January, 1893; 6 years.

Claim.—1st. A device for turning bags, consisting of a base and standards or uprights attached to said base, and over which the bag is reversed, substantially as set forth. 2nd. A device for turning bags, consisting of a base and standards or uprights attached to said base and made adjustable toward and from each other, substantially as set forth. 3rd. A device for turning bags, consisting of a base, a pair of standards pivoted to the base, and an adjustable connection whereby the upper ends of the standards can be adjusted toward and from each other, substantially as set forth. 4th. A device for

turning bags, consisting of a base, and a pair of crossed bars or standards attached to said base and adjustably secured together, substantially as set forth. 5th. A device for turning bags, consisting of a base, a pair of crossed bars or standards pivoted to said base and provided in their intersecting portions with slots, and a clamping bolt passing through said slots, substantially as set forth. 6th. A device for turning bags, consisting of a base, a pair of crossed bars or standards pivoted at their lower ends to said base, a clamping device whereby the standards are adjustably secured together and a spring connecting the standards, substantially as set forth. 7th. A device for turning bags, consisting of a base, standards rising from said base, and anti-friction balls or rollers arranged at the upper ends of the standards, substantially as set forth.

No. 41,464. Valve Operating Mechanism. (*Mécanisme pour actionner les soupapes.*)

John W. Ogden, New York, State of New York, U. S. A., 9th January, 1893; 6 years.

Claim.—1st. In combination in a valve or gate operating mechanism, a casing, one or more valve seats therein, one or more valves arranged to travel in guides in the said casing, one or more pairs of lazy tongs for withdrawing and replacing the said valve or valves, fulcrumed in the said casing, and secured by links to the said valve or valves, a movable head for operating the said lazy tongs, means (as a wheel and screw) for actuating the said head, toggles for forcing the said valve or valves against their respective seats, and one or more pins therefor, secured to the elbow or elbows of said toggles, substantially as and for the purpose set forth. 2nd. In combination with the stationary parts of a valve or gate operating mechanism, a valve or gate, lazy tongs carrying the said valve or gate and fulcrumed to the said stationary parts, toggles for forcing the said valve against its seat, an operating pin secured to the elbow of the said toggles, and means, as a wheel and screw, for simultaneously actuating the said lazy tongs and the said toggles, substantially as and for the purpose set forth. 3rd. In combination with the stationary parts of a valve or gate operating mechanism, a valve or gate, lazy tongs for withdrawing and replacing the said valve or gate, toggles for tightly closing the said valve or gate, and means for operating the said toggles and the said lazy tongs, substantially as and for the purposes set forth. 4th. In combination with the stationary parts of a valve or gate operating mechanism, a valve, a pair of lazy tongs for withdrawing and replacing the said valve, and means (as a wheel and screw) for actuating the said lazy tongs, substantially as and for the purposes set forth. 5th. In a valve or gate apparatus, the following elements in combination: a gate or valve, lazy tongs, and an actuating screw or other device for operating the lazy tongs, and through them the valve or gate, substantially as and for the purposes set forth. 6th. In combination with a valve or gate adapted to close orifices for the admission or emission of fluids or gases, a system of lazy tong levers, whereby the valve may be operated by the extension and contraction of said levers, substantially as and for the purposes set forth.

No. 41,465. Carbon Holder for Arc Lamps. (*Porte-carbone pour lampes à arc.*)

James J. Wood, Fort Wayne, Indiana, U. S. A., 9th January, 1893; 6 years.

Claim.—1st. A carbon holder consisting of a hollow shell, two clamping jaws adapted to grip the carbon between them at their lower ends and terminating at their upper ends in contact with the internal surface of said shell, reacting against one another and adapted to tilt in clamping the carbon, and a tightening device for acting on said jaws to press their lower ends together and their upper ends apart. 2nd. A carbon holder consisting of a hollow shell, two clamping jaws adapted to grip the carbon between them at their lower ends, crossing each other and terminating at their upper ends in contact with the internal surface of said shell, and a screw for acting on said jaws to press their lower ends together and their upper ends apart. 3rd. A carbon holder consisting of an internally spherical shell, two clamping jaws adapted to grip the carbon between them at their lower ends and terminating at their upper ends in contact with the internal surface of said shell, and a screw acting against one of said jaws and reacting against the other to press their lower ends together and their upper ends apart. 4th. A carbon holder consisting of an internally spherical shell, two clamping jaws adapted to grip the carbon between them at their lower ends, having their upper ends crossing each other and terminating in contact with the internal surface of said shell, and a screw for drawing said jaws together intermediate of their lower ends and their point of intersection. 5th. The combination of the hollow shell *B*, clamping jaws *C, C*, having heads *e, e'*, within said shell, and gripping portions *d, d*, and a tightening screw *D*, engaging said jaws between their heads and gripping portions, and adapted to press their lower ends together and their upper ends apart. 6th. The combination of the hollow shell *B*, having a flange *c*, surrounding its opening, clamping jaws *C, C*, having gripping portions *d, d*, at their lower ends, and laterally projecting and crossing heads *e, e'*, at their upper ends, the head of one jaw being bifurcated and that of the other entering the bifurcation, and a screw *D*, engaging the jaws to press their lower ends together and their upper ends or heads apart into frictional engagement with the inner surface of the shell.

No. 41,466. Rotary Engine, Pump and Blower.*(Machine rotative, pompe et soufflet.)*

Alexander Francis Garden Brown, Swindridge, Muir, Dalry Ayr, Scotland, 9th January, 1893; 6 years.

Claim.—1st. In a rotary engine, pump, or blower, the combination, with a piston rotating within a cylinder, of an oscillating abutment carrying an oscillating segment bearing on the piston, the steam distributing valves being formed thereby and automatically operated by the rotation of the piston, substantially as shown and described. 2nd. In a rotary engine, pump or blower, the combination, with a piston rotating within a cylinder, of a sliding abutment, divided by a web into steam and exhaust compartments, and carrying an oscillating segment bearing on the piston, the steam distributing valves being formed by the abutment and segment, and operated automatically by rotation of the piston, substantially as shown and described. 3rd. In a rotary engine, pump or blower, the combination of a series of pistons rotating within a cylinder and set one in advance of another, and a corresponding series of abutments, each carrying an oscillating segment bearing on one of the pistons, and operated thereby to automatically open and close steam and exhaust parts formed in the abutment and segment, substantially as shown and described. 4th. In a rotary engine, pump or blower, a combined packing and lubricating distributor composed of a packing ring surrounding the engine shaft and pressed by springs against the boss of the rotating piston, in conjunction with grooves formed on the face of said boss, substantially as shown and described.

No. 41,467. Bottle Filling Machine.*(Machine à emplir les bouteilles.)*

James Johnson Chavasse, Toronto, Ontario, Canada, 9th January, 1893; 6 years.

Claim.—1st. In a power filling machine, the main driving gear wheel journaled on the stationary shaft, the vertical standards secured at the bottom to the gear wheel and at the top to the extension arms, journaled on the top of the stationary shaft, the valve boxes secured in slots in the vertical standards, the sockets for securing the top of the bottle in position, and the saucers for supporting the lower end of the bottles, the said saucers being supported on levers pivoted on the standards and connected at their inner end to vertical rods adjustably supported in the gear wheel and disc immediately above the same secured to the standards, as and for the purpose specified. 2nd. In a power filling machine, the vertical standards secured on the gear wheel, the disc wheel secured on the standards immediately above the gear wheel, the valve box secured in a slot in the vertical standards, the syrup pipe secured at one end in the side of the valve box, and connected by passage ways and valves to the main passage way extending through the valve box into the socket within which the top of the bottle is held and at the other end to the main syrup pipe, and the aerated water branch pipe connected at one end to the main aerated water pipe and at the other to a passage way, at the other side of the valve box, which passage way is connected by a valve to the main passage way extending through the valve out into the socket, in combination with the pivoted lever having a saucer secured on the outer end thereof, and which is connected at its inner end to a vertical rod, which extends through the gear wheel and is raised by the operation of a cam, as and for the purpose specified. 3rd. The combination, with the valve box F, supported on the vertical standards L, and having separate passage ways and valves for the syrup and aerated water respectively connecting with the main passage way in the valve box, which extends out into the socket I, of the saucer K, supported on the outer end of the pivoted lever J, which is connected at its inner end to the rod L, the bottom of which in its normal position revolves on the horizontal top of the pedestal and is held close thereto by the spiral spring N, extending between the collars n , n^1 , as and for the purpose specified. 4th. The combination with the valve box F, supported on the vertical standards L, and having separate passage ways and valves for the syrup and aerated water respectively, connecting with the main passage way in the valve box, which extends out into the socket I, of the saucer K, supported on the outer end of the pivoted lever J, which is connected at its inner end to the rod D, which in its normal position revolves on the horizontal top of the pedestal, and is held close thereto by the spiral spring N, extending between the collars n , n^1 , and supported in position by the rod O, which extends through the collars down into the hollow portion of the rod L, as and for the purpose specified. 5th. The combination of the socket I, for holding the top of the bottle, the saucer K for supporting the bottom of the bottle, the said saucer being secured on the curved outer end of the lever J, and held against the bottom of the bottle by the tension of the spring N, on the top of the rod L, as and for the purpose specified. 6th. The socket I, for holding the top of the bottle, the saucer K, for supporting the bottom of the bottle, the said saucer being secured to the curved outer end of the lever J, and held against the bottom of the bottle by the tension of the spring N, in combination with the cam z , secured on the top of the pedestal, and designed to come in contact with the bottom of the rod L, as and for the purpose specified. 7th. The lever X, pivoted at its inner end to each of the arms E, and having a curved outer end which projects through the loop made in the upper end of the rod Z, which extends through the socket J, and has a crooked end z formed at its lower end, in combination with the pin x^1 , de-

signed to come in contact and to be raised by the cam x^2 , on the stationary disc W, as the said pin passes around in its revolution, as and for the purpose specified. 8th. The lever X, pivoted at its inner end to each of the arms E, and having a curved outer end which projects through the loop made in the upper end of the rod Z, within which loop is placed a spiral spring exerting a pressure on the top of the lever X, in combination with the pin x^1 , designed to come in contact and to be raised by the cam x^2 , on the stationary disc W, as the said pin passes around in its revolution, as and for the purpose specified. 9th. The lever X, pivoted at its inner end to each of the arms E, and having a curved outer end, which projects through the loop made in the upper end of the rod Z, within which loop is placed a spiral spring z^1 , exerting a pressure on the top of the lever X, the tension of the said spiral spring z^1 being increased or diminished by the internally threaded thumb nut z^2 , in combination with the pin x^1 , designed to come in contact and to be raised by the cam x^2 , on the stationary disc W, as the said pin passes around in its revolution, as and for the purpose specified. 10th. The syrup pump Q, connected by passage ways and valves to the syrup supply pipe t , and the discharge passage way g , and provided with the piston q , piston rod q^1 , the plate R, secured on the piston rod q^1 , and a spiral spring R^1 , situated on the rod q^1 , between the plate R, and the top of the syrup pump, in combination with the cam w^1 , situated on the under side of the stationary disc W, in the path of the top of the rod q^1 , as and for the purpose specified. 11th. The syrup pump Q, provided with piston q , piston rod q^1 , the plate R, secured on the piston rod q^1 and a spiral spring R^1 , situated on the rod q^1 , between the plate R and the top of the syrup pump, in combination with the adjustable thumb screw s , screwed into the outer end of the plate R, and having its upper end abutting the plate S, as and for the purpose specified. 12th. The syrup pump Q, provided with the piston rod q , operated as specified, in combination with the pipe r , leading to the passage way r^1 , which passage way extends downwardly to a point between the passage way r^6 , and r^7 , the vertical hole r^6 , forming a connection between the passage way r^6 , and passage way r^2 , leading from the syrup pipe t , and the valve r^4 , designed when resting on its seat to close this latter passage way, as and for the purpose specified. 13th. The syrup pipe Q, provided with piston rod q , operated as specified, in combination with the pipe r , leading to the passage way r^1 , which passage way extends downwardly to a point between the passage way r^6 and r^7 , the vertical hole r^6 , forming a connection between the passage way r^6 , and passage way r^2 , leading from the syrup pipe t , the valve r^4 , designed when resting on its seat to close this latter passage way, the horizontal diagonal passage way r^9 , extending from the junction of the passage way r^1 , r^6 and r^7 , to a point beneath the valve r^4 , and the valve r^4 , designed to be raised by the pressure of the syrup, so as to allow the syrup to flow through the passage way r^15 , to the main passage way g , as and for the purpose specified. 14th. The syrup pipe Q, provided with piston rod q , operated as specified, in combination with the pipe r , leading to the passage way r^1 , which passage way extends downwardly to a point between the passage way r^6 and r^7 , the vertical hole r^6 , forming connection between the passage way r^6 , and passage way r^2 , leading from the syrup pipe t , the valve r^4 , designed when resting on its seat to close this latter passage way, the horizontal passage way r^7 , forming a continuation of the passage way r^6 , and extending to a point beneath the valve r^4 , which valve is designed to be raised by the pressure of the liquid when there is no bottle in the machine, so as to connect with the passage way r^2 , and syrup pipe t , as and for the purpose specified. 15th. In combination with the rod v^6 , having a valve v^4 , situated at its bottom end and supported in position by the spiral spring v^5 , the passages ways v^1 , v^2 , g^2 , leading from the pipe v , to the passage way g , of the cams y , y^1 , designed to press the said valve v^4 downwardly, so as to permit of the free passage of the aerated water from the pipe v , to the passage way g , as and for the purpose specified. 16th. In combination with the rod u^1 , having situated at its lower end the sniff valve u , which is supported on the seat by the spiral spring u^5 , the passage way g^1 , the vertical hole u^2 , and the passage way u^4 , connecting to the main passage way g , in combination with the cams y , y^1 , designed to force the rod u^1 downwardly, and permit of a free passage way for the air from the passage way g , through the passage way g^1 , u^2 and u^4 , as and for the purpose specified.

No. 41,468. Spring Setting Machine.*(Machine pour assujettir les ressorts.)*

Edward Cliff, Newark, New Jersey, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. In combination with the frame and reciprocating spring holding bed, a series of bearing blocks distributed in front and lengthwise of said bed, flexible ties connecting said blocks, and spring couplings connecting said ties to the frame, as set forth. 2nd. In combination with the frame A and reciprocating spring holding bed B, the boxes C C pivoted to the frame at opposite ends of the said bed, pistons C¹ sliding in said boxes, springs a interposed between the pistons and their respective boxes, flexible ties D D¹, connected to said pistons, and bearing blocks $l l l$ connected to said ties, as and for the purpose set forth. 3rd. In combination with the frame A and reciprocating spring holding bed B, the boxes C C connected to the frame at opposite ends of said bed, pistons C¹ C¹, springs $a a$, hinges $c c$ connected to said pistons, flexi-

ble ties $D D^1$ connected to said hinges, and bearing blocks $l l l$ on said ties, as set forth. 4th. In combination with the frame A and reciprocating bed B , the arms $E E$ extending upwardly from the frame and connected to said frame, longitudinally adjustable spring couplings connected to said arms, a series of bearing blocks distributed in front and lengthwise of the bed B and flexible ties connecting said bearing blocks together and to said spring couplings, as set forth. 5th. In combination with the frame A and reciprocating bed B , the arms $E E$ extending upwardly from the frame and connected thereto adjustably longitudinally, the boxes $C C$ pivoted to said arms, pistons $C^1 C^1$ in said boxes, springs interposed between said pistons and boxes, flexible ties connected to said pistons and bearing blocks connected to said ties, as set forth. 6th. In combination with the frame and reciprocating spring holding bed, the flexible spring bending head, consisting of the separate wire cables $D D^1$ connected, respectively, to the frame at opposite ends of the aforesaid bed, a series of bearing blocks $l l l$ strung on said cables, and heads on the ends of the cables bearing on opposite ends of the series of bearing blocks, substantially as set forth. 7th. In combination with the frame and reciprocating spring holding bed, the flexible spring bending head, consisting of the series of bearing blocks $l l l$ having convex checks $l^1 l^1$ and perforations $l^{11} l^{11}$, and the wire cables $D D^1$, connected to the frame respectively at opposite ends of the spring holding bed and passing through the perforations of the said bearing blocks and tied at their free ends to the ends of the series of blocks, substantially as described and shown. 8th. In combination with the spring holding bed, the spring bending head provided with slots extending vertically through said head, and the water supply pipe P communicating with said slots, as set forth. 9th. In combination with the spring holding bed, the bearing blocks flexibly connected together and formed with convex checks $l^1 l^1$ and grooves $o o$, and the water supply pipe P having nozzles $P^1 P^1$ communicating with the grooves $o o$, substantially as described and shown. 10th. In combination with the frame A , reciprocating spring holding bed B and flexible spring bending head $D D^1$, the boxes $C C$, pistons $C^1 C^1$ springs $a a$ interposed between said boxes and pistons, the coupling bolts $b b$ passing through the pistons and boxes and connected at their inner ends to the flexible spring bending head and screw threaded at their outer ends, and adjusting nuts $n n$ on said outer ends of the coupling bolts, as and for the purpose set forth.

No. 41,469. Semi-Elliptic Spring.

(*Resort semi-elliptique.*)

Edward Cliff, Newark, New Jersey, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. A semi-elliptic spring composed of a plurality of leaves seated closely one upon the other of the same width and formed straight across the main portions of their widths, and each curved at its side edges toward the adjacent leaf, said curved edges extending throughout the main portion of the leaf and terminating with a close embrasure of the latter leaf, and a band closely embracing the spring, substantially as set forth. 2nd. A semi-elliptic spring composed of a plurality of leaves superposed one upon the other, all of the same width and formed straight across the main portions of their widths and each curved at its side edges toward the adjacent leaf, and a filler on the shortest leaf formed likewise straight across the main portion of its width and having the top and bottom of its side edges curved toward each other, in combination of a band closely embracing said spring, as set forth. 3rd. The combination, with the semi-elliptic spring, of separately formed bearing plates mounted on the end portions of the main leaf of said spring, locked against longitudinal movement on said leaf, and provided with flanges embracing the side edges of the leaf, substantially as set forth. 5th. The combination of the main leaf a , formed at its end with the upwardly projecting abutment b , and the shoulder c, c , and the plate P , mounted on said leaf and formed with respectively the abutment and downwardly projecting lugs e, e , engaging the abutment and shoulders of the aforesaid leaf, as set forth. 6th. The combination of the main leaf a , formed with end, and the plate P , mounted on the end portion of said leaf and formed with longitudinal concave ribs r, r , engaging the side edges of the leaf, and with the end shoulder d , and lugs e, e , engaging respectively the abutment and shoulders of the aforesaid leaf, substantially as set forth and shown.

No. 41,470. Hoof Parer and Nail Clincher.

(*Paroir de maréchal et appareil à river le clou.*)

Norman Michener, Pelham, Ontario, Canada, 9th January, 1893; 6 years.

Claim.—A combined hoof parer and nail clincher having the jaw A , terminated in a clinching head d , the inner face of which is adapted to act as a paring blade, and jaw B , fitted to receive a movable blade C , or clinching bar E , in combination with either the movable blade C , or clinching bar E , substantially as and for the purpose set forth.

No. 41,471. Machine for Attaching Leather.

(*Machine pour attacher le cuir.*)

Thomas Gare, Stockport, Chester, England, 9th January, 1893; 6 years.

Claim.—1st. In sprigging, nailing and riveting machines, feeding the object n under operation, by means of an awl e^1 , carried by a slide e , which is rendered laterally intermittently movable, substantially as set forth, and with reference to the figures generally. 2nd. In sprigging, nailing and riveting machines, a feeding device having a ratchet pawl lever m^3 , in combination with a stud m^3 , rendered relatively adjustable for the purpose of altering the amount of feed required, substantially as and for the purpose set forth, and with reference to figs. 13 and 14. 3rd. In sprigging, nailing and riveting machines, the combination of a stationary guide piece n , having a vertical passage n^2 , with a laterally movable throat g , operating against the same in such a manner that the two parts n and g together form a shear, substantially as and for the purpose set forth, and with reference to figs. 4, 5 and 6. 4th. In sprigging, nailing and riveting machines, the use of a double set of feed rollers l, l^1, l^2, l^3 , two throats g, g^1 , two awls e^1 and e^2 , and two drivers f, f^1 , the outer set of feed rollers l^2, l^3 , and outer awl e^1 , being adapted to be rendered inoperative, substantially as and for the purpose set forth, and with reference to figs. 11 and 12. 5th. In sprigging, nailing and riveting machines, the use of a guide a , rendered adjustable towards the side of the object n under operation, substantially as and for the purpose set forth, and with reference to figs. 13, 14 and 15. 6th. In sprigging machines, having a shear n and g , as specified in claim III, the use of a presser foot p, p^1 , formed in two parts p, p^1 , and rendered changeable in depth relative to the throat g , to permit of forming a raised wearing surface, substantially as set forth, and with reference to figs. 14 and 15. 7th. In sprigging, nailing and riveting machines, forming the tip of the horn or support l^1 , with a removable leather face i^1 , or a groove i^2 , as shown respectively in figs. 7 and 8 and 9 and 10, substantially as and for the purpose set forth. 8th. Manufacturing headed nails or rivets for boots or shoes, by forming bars or strips of metal in section equal to the longitudinal section or side of nails or rivets required, and by mechanically cutting the said bars or strips transversely, each cut producing a headed nail or rivet, substantially as set forth. 9th. In a nailing or riveting machine, the manufacture of headed nails as specified in the preceding claim, by the use of a shear n, g , the part n , of which is stationary, and the part g , rendered laterally movable thereon, serving also as a throat, and having a slot g^2 , to receive the cut nail or rivet from whence it is driven into the object under operation, substantially as and for the purpose set forth and with reference to figs. 17, 19 and 22. 10th. In a sprigging machine, the use of a shear n, g , as specified in the preceding claim, for the purpose of cutting sprigs from a bar or strip of flat section, substantially as set forth. 11th. In a nailing or riveting machine, the use of flat sectioned metal bars or strips adapted to be intermittently rotated, or rotary reciprocated, so as to alternately change the position of the top and bottom edge thereof, the nails or rivets being cut off by a shear n, g , with taper face actuating as specified in claim 9, substantially as and for the purpose set forth and with reference to figs. 23 and 24. 12th. In nailing or riveting machines, the use of a knife or punch q^1 , moved laterally by the action of the movable head b^1 , against the side of a head sectioned metal bar or strip K^2 , the latter being supported by a die q^2 , which receives the knife or punch q^1 , and also the nail or rivet cut with a head on all four sides, substantially as and for the purpose set forth and with reference to figs. 25, 26 and 27. 13th. In sprigging, nailing, riveting and pegging machines, the employment of a loose connection between the horn lever u , and respective cam lever v , consisting of a disc or segment x , guided vertically and eccentrically connected to the rod u^1 , of the horn lever u , in combination with a semi-circular strap w , vertically guided and connected to the cam lever v , which disc or segment x is adapted to grip the semi-circular strap w when required, and thus form a rigid connection between the horn lever u during the driving of the sprig, nail, rivet or peg whilst the connection between the horn lever u , and cam lever v , is rendered loose and accommodates the horn or support i , according to the varying thickness of the object under operation on being fed, substantially as set forth and with reference to figs. 2 and 3.

No. 41,472. Process of Purifying Brine.

(*Procédé pour purifier la saumure.*)

Caleb Grozier Collins, Kearney, New Jersey, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. The process of purifying brine, substantially as herein set forth, consisting in rendering the impurities insoluble by subjecting the brine to a current of electricity, having an electro motive force not exceeding two and one-half volts, sufficient to decompose the impurities in the brine, but below the intensity necessary to decompose the sodium chloride in the brine, whereby the impurities are rendered insoluble through decomposition, while sodium chloride is unaffected by the electric current. 2nd. The process of purifying brine, as herein set forth, consisting in rendering the impurities insoluble by subjecting the brine to a current of electricity, having an electro motive force not exceeding two and one-half volts in intensity, and then separating the brine from such precipitates by passing it through a filtering medium, substantially in the manner and for the purpose described. 3rd. The process of purifying brine, as

herein set forth, consisting in rendering the impurities insoluble by subjecting the brine to a current of electricity, having an electro motive force not exceeding two and one-half volts in intensity, and then separating the brine from such precipitates by passing it through a filtering medium while under the influence of an electrical current, not exceeding two and one-half volts in intensity, to insure the reprecipitation and removal of such impurities as tend to redissolve after passing beyond the influence of the first electrical current, substantially as described. 4th. The process of purifying brine, as herein set forth, consisting in rendering the impurities insoluble and simultaneously removing them from the brine by passing the latter through a filtering medium, in which it is subjected to a current of electricity, having an electro motive force not exceeding two and one-half volts in intensity, substantially in the manner and for the purpose described.

No. 41,473. Machine for Making Drains.

(*Machine pour faire les égouts.*)

Odilon B. H. Hanneborg, Urskog, Norway, 9th January, 1893; 6 years.

Claim.—1st. In a machine for making or laying drains, the arrangement of vertically rotating adjustable digging wheel which during the advance of the machine, digs the trench, a feeding chute for laying down the pipes and conveying mechanism for bringing the earth from the digging wheel over into the trench, which is thus again filled up immediately after the drain pipes have been laid down. 2nd. A drain making or laying machine, consisting of a transportable frame *b*, upon which is an adjustable frame *c*, carrying a vertically rotating digging wheel *h*, which, during the advance of the machine, digs the trench, a feeding chute *r*, fastened to the frame *c*, which feeding chute serves for laying down the pipes in the trench and conveying mechanism fastened to the said frame, and consisting of a cleaning apparatus *o*, the trough *p*, the endless band *q*, and a chute *r*, *r*¹, to bring the earth from the digging wheel *h*, into the trench which has just before been dug, thus again filling up the trench after the drain pipes have been laid down. 3rd. In a drain making or laying machine of the kind referred to in claims 1 and 2, the arrangement of the frame *c*, adapted to be regulated by means of arms *c*¹, forming nuts for the screw threaded spindles of the jack screw *d*, fastened on the frame *b*. 4th. In a drain making or laying machine of the kind referred to in claim 1 and 2, the feeding chute *r*, which is made open in order to better accommodate different dimensions of drain pipes, and in order that the position of the pipes in the trench may be controlled. 5th. In a drain making or laying machine of the kind referred to in claims 1 and 2, the cleaning apparatus in the form of a fan or wheel *o*, moved either by one of the moving axles of the machine or directly by the digging wheel *h*. 6th. In a drain making or laying machine of the kind referred to in claims 1 and 2, the chute *r*, *r*¹, made in two parts, the lower part *r*¹, of which may be short and bent aside in order that the earth brought over from the digging wheel *h*, may, if required, be laid along the edge of the trench. 7th. In a drain making or laying machine of the kind referred to in claims 1 and 2, the arrangement of iron plates *u*, *u*, fastened to the frame *c*, in order to keep the sides of the trench from falling in during the laying down of the pipes.

No. 41,474. Sled Rack. (*Ratelier de traineau.*)

William Albert Downey, Amherst, Nova Scotia, 9th January, 1893; 6 years.

Claim.—1st. The part called the centre piece (*a* fig. 1) substantially as and for the purposes hereinbefore set forth. 2nd. The part called the upright binder and guide piece *b* with shackles *c* and *f* (fig. 1) substantially as and for the purposes hereinbefore set forth. 3rd. The part called the adjustable and movable sides (fig. 1 *d*) substantially as and for the purposes hereinbefore set forth.

No. 41,475. Machine for Laying Railway Tracks.

(*Machine pour poser les rails de chemin de fer.*)

George Roberts, Tacoma, Washington, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. The combination in a track laying machine, with the locomotive, of the vertical engine, the steam pipes adapted to oscillate at their coupling joint and connecting said locomotive and engine steam chest, the engine shaft having the friction cups on each end, and the shafts mounted in line with said engine shaft and carrying the cups or discs adapted to be thrown into or out of connection with the cups on the engine shaft, substantially as described. 2nd. The combination, in a track laying machine, with the locomotive, of the vertical engine mounted on a car in advance of the locomotive, the steam pipe *D*, connected to the locomotive dome, the pipe *D*¹ connected to the steam chest of said engine, the pipe *E*, coupling pipes *D* *D*¹, so as to permit said pipes to move slightly at their connecting points with said pipe *E*, the engine shaft, the shafts *H* in line therewith the friction clutches connecting said shafts to said engine shaft, means for operating said clutches, the bevel pinions mounted on the ends of the shafts, the cross shafts having jaws formed in their ends, the bevel pinions thereon, and the connecting rods, substantially as described. 3rd. The combination, in a track laying machine, of the sectional tramways, the engine shaft, the shafts *H* in line with said engine shaft, the clutch devices connecting said shaft with the engine shaft, the cross shafts having

jaws formed on their ends, the tumbling rods having corresponding jaws coupled to said first named jaws, the connecting rollers mounted on the tramways, the rollers having their bearings in said tramways, and adjustable or flexible couplings between the sections of the tramway, substantially as described. 4th. The hereinbefore described trio tramway for track laying machines, consisting of the side beams mounted one above the other, the toothed wheels mounted on axles forming rollers, said axles being journaled in said tramways, the bevel pinions secured on the ends of said axles, and the sockets secured between the upper and lower beams at their ends, the bar similarly secured adapted to enter said socket, and a pin for coupling said socket and bar together, substantially as described. 5th. The combination, in a tramway for track laying machines, of the side beams arranged one above the other, the axles having their bearings between the edges of said beams, the toothed discs or wheels mounted on said axles, the bevelled pinions secured to the ends of said axles, the connecting rods running alongside said tramways, the pinions having round projections mounted on said rods, the bearings for said pinions and rods secured between the edges of said beams, and means for flexibly coupling the tramways together, substantially as described. 6th. The tramway for conveying rails in a track laying machine consisting of the side beams, the rollers having pinions mounted in said beams, means for rotating said rollers, and the divided rollers arranged in the delivery end of said tramway, substantially as described. 7th. The combination, in track laying machines, of the tramway supports consisting of the perforated upright having its lever end curved outwardly and upwardly and its upper end bent to form a hook, the bracket secured to said upright, the axle perforated at one end and having a square opening therein adapted to fit said upright, the pin for securing the axle to the upright, the rod or bar pivoted to the axle and having its lower end perforated and adapted to be pivotally connected to said upright, and the flanged rollers mounted on said axle, substantially as described. 8th. The combination, in a track laying machine, of a car, the rail tramway, the vertical stakes secured to said car and tramway, the track or way connecting said stakes, the bell crank lever the flanged wheel journaled to the lever, the perforated rod pivotally secured to the short end of said lever, and the tongs secured to said rod, substantially as described.

No. 41,476. Illuminating Tiles. (*Tile transparente.*)

Jacob Jacobs, New York, State of New York, U.S.A., 9th January, 1893; 18 years.

Claim.—1st. A lens for illuminating tiles, having its side periphery provided with a series of ribs, of which each lower one projects out beyond the one next above it, substantially as and for the purpose specified. 2nd. A lens for illuminating tiles, having its bottom made concave and provided with an annular downwardly extending rib around the concavity, and having its side periphery provided with a series of ribs, of which each lower one projects out beyond the one next above it, substantially as and for the purposes set forth. 3rd. A lens for illuminating tiles, having the lower portion to be received and supported within the light opening in a tile frame, its upper portion formed so as to have a scalloped outline, and its side periphery provided with rounded ribs, of which each lower one projects out beyond the one next above it, substantially as and for the purposes described. 4th. A lens for illuminating tiles, having its lower portion adapted to fit within a light opening in the tile frame, its top with scalloped outline, and its side periphery having the series of ribs, scalloped like the top, of which each lower one projects out beyond the next above it, substantially as and for the purpose specified. 5th. An illuminating tile in which the light openings contain lenses, each having its side periphery provided with a series of ribs projecting further outward, as the bottom of the lens is approached, substantially as and for the purpose described. 6th. An illuminating tile, in which the light openings in the frame are provided with lenses having tops made smaller in diameter than the bottoms, and their side peripheries provided with ribs, of which each succeeding lower one projects beyond that above it, substantially as and for the purpose set forth. 7th. An illuminating tile, in which are lenses, having the upper portion of their bodies provided with numerous peripheral scallops, whereby the reflecting capacity of the lens is augmented, substantially as and for the purpose specified.

No. 41,477. Illuminating Tiles. (*Tile transparente.*)

Jacob Jacobs, New York, State of New York, U.S.A., 9th January, 1893; 18 years.

Claim.—1st. As an improvement in illuminating tiles, a lens which is composed of a plate that is provided upon its upper face with bosses integral therewith, which resemble separately formed lenses, and between such bosses has other smaller bosses likewise integral, substantially as and for the purpose specified. 2nd. As an improvement in illuminating tiles, a lens which is composed of a plate that is provided upon its upper face with a series of large bosses, and between the same has other smaller bosses, and around its edge has a flange which has its upper edge flush with or upon the same plane with the upper ends or faces of said bosses, substantially as and for the purpose shown. 3rd. An illuminating tile which is composed of a metal supporting frame having light openings, glass plates that are fitted to and cemented within such openings, and are each provided upon its upper face with a series of large bosses and

smaller intermediate bosses, and an inclosing flange, and cement which is placed within and caused to fill the spaces between said bosses and flanges, and to cover the bars between the light openings of said frames, substantially as and for the purposes set forth.

No. 41,478. Illuminating Tiles. (*Tuile transparente.*)

Jacob Jacobs, New York, State of New York, U.S.A., 9th January, 1893; 18 years.

Claim.—As an improvement in illuminating tiles, a metal body or frame which is provided with round light openings that are arranged in parallel rows, and smaller square openings that are located midway between four contiguous light openings, in combination with lenses which are cemented within said light openings and lenses, or their equivalents, that are cemented within said intermediate openings, substantially as and for the purpose specified.

No. 41,479. Dress Shield. (*Protecteur de vêtements.*)

Edward Everett Pray, New York, State of New York, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. A shield for protecting garments, provided with an odorless deodorizing antiseptic agent, substantially as and for the purposes described. 2nd. A shield for protecting garments, having a layer of material impervious to moisture, and a layer of absorbent material impregnated with an odorless deodorizing agent or substance, substantially as and for the purposes described. 3rd. A shield for protecting garments, having a layer of absorbent material impregnated with boracic acid, substantially as and for the purposes described. 4th. A shield for protecting garments, having a layer of material impervious to moisture, and a layer of sterilized highly absorbent material impregnated with an odorless deodorizing agent, substantially as and for the purposes described. 5th. A shield for protecting garments, having a layer of material impervious to moisture, and a detachable layer of absorbent material impregnated with an odorless deodorizing agent or substance, substantially as and for the purposes described.

No. 41,480. Process of Extracting Gold and Silver from Ores. (*Procédé pour extraire l'or et l'argent des minerais.*)

Henry Parkes, Dalwhinny, England, and John Cunningham-Montgomery, Dalmore Stair, Ayr, Scotland, 9th January, 1893; 6 years.

Claim.—1st. The herein described method of extracting gold and silver from ores or compounds containing the same, consisting in heating the ore with a chloridizing agent in the presence of oxygen under pressure. 2nd. The herein described process for extracting gold and silver from ores or compounds containing the same, by an uninterrupted operation consisting in saturating the ore with chlorine, and subjecting the same to agitation in the presence of oxygen under pressure, the ore being subsequently filtered and washed and the precious metals recovered from the liquor by precipitation or other known means.

No. 41,481. Car Brake. (*Frein de char.*)

Sigismund B. Wortmann, New York, State of New York, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. In a car brake, the combination with an axle and a brake, of a power shaft, connected through intermediate devices with the brake, a loose gear carried by said power shaft, a clutch adapted to rigidly fasten the loose gear to the power shaft, and means for manually operating the clutch, substantially as described. 2nd. In a car brake, the combination with an axle and a brake, of a power shaft, geared loosely to said axle, a clutch carried by said power shaft, and a lever for manually operating the clutch to drive the shaft directly from the axle, substantially as described. 3rd. In a car brake, the combination with an axle and a brake bar, of a power shaft carrying a loose gear which meshes with a fixed gear on said axle, a sliding clutch keyed to the power shaft, and adapted to engage the loose gear, a horizontal lever engaging with the clutch, an upright lever connected to said horizontal lever, and connection intermediate of the power shaft and the brake bar, substantially as described. 4th. In a car brake, the combination with an axle and a bar or shaft, of the power shaft, the loose gear fitted on said shaft and engaging a fixed gear on the axle, the sliding clutch keyed to the power shaft the horizontal lever fulcrumed to the car body, and to the horizontal lever engaging the clutch, the hand lever connected to the horizontal lever, and the chain or other connection intermediate of the power shaft and the brake bar or shaft, substantially as described.

No. 41,482. Electric Heating Apparatus for Electric Railways. (*Appareil de chauffage électrique pour chemins de fer électriques.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 9th January, 1893; 6 years.

Claim.—1st. In an electric railway, a line working conductor, a vehicle, an electric motor to propel said vehicle, electrical connections or locate electric motor and working conductor, suitable means to create or locate electrical resistance or counter electro-motive force in said conductor between the connections, an electric heater to heat said

vehicle, and suitable means for supplying current to the heater from the line conductor. 2nd. In an electric railway, a permanently continuous line working conductor, a vehicle, an electric motor to propel said vehicle, electrical connections between said motor and working conductor, suitable means to create or locate electrical resistance or counter electro-motive force in said conductor between the connections, an electric heater to heat said vehicle, and suitable means for supplying current to the heater from the line conductor. 3rd. In an electric railway, a line working conductor, a vehicle, an electric motor to propel said vehicle, electrical connections between said motor and working conductor, suitable means to create or locate electrical resistance or counter electro-motive force in said conductor between the connections, an electric heater to heat said vehicle, suitable means for supplying current to the heater from the line conductor, and an automatic current regulator on the vehicle to control the current flowing through the heater independently of the motor. 4th. In an electric railway employing a constant or nearly constant current in the supply circuit, travelling vehicles, electric motors on said vehicles connected in the supply circuit in series to propel the vehicles, electric heaters to heat said vehicles, and suitable means for supplying current to the heaters from the supply circuit. 5th. In an electric railway employing a constant or nearly constant current in the supply circuit, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, and electric heaters to heat said vehicles and connected in the supply circuit in series. 6th. In an electric railway, a supply circuit extending along the way, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, and electric heaters to heat said vehicles and connected in the supply circuit in series. 7th. In an electric railway employing a constant or nearly constant current in the supply circuit, travelling vehicles, electric motors on said vehicles connected in the supply circuit in series to propel the vehicles, electric heaters to heat said vehicles, and suitable means for supplying current to the heaters from the supply circuit, and means to regulate the current flowing through the heaters. 8th. In an electric railway employing a constant or nearly constant current in the supply circuit, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, electric heaters to heat said vehicles and connected in the supply circuit in series, and means to regulate the current flowing through the heaters. 9th. In an electric railway, a supply circuit extending along the way, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, electric heaters to heat said vehicles, and connected in the supply circuit in series, and means to regulate the current flowing through the heaters. 10th. In an electric railway, employing a constant or nearly constant current in the supply circuit, travelling vehicles, electric motors on said vehicles connected in the supply circuit in series to propel the vehicles, electric heaters to heat said vehicles, and suitable means for supplying current to the heaters from the supply circuit, and means to automatically regulate the current flowing through the heaters. 11th. In an electric railway, employing a constant or nearly constant current in the supply circuit, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, electric heaters to heat said vehicles, and connected in the supply circuit in series, and means to automatically regulate the current flowing through the heaters. 12th. In an electric railway, a supply circuit extending along the way, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, electric heaters to heat said vehicles and connected in the supply circuit in series and means to automatically regulate the current flowing through the heaters. 13th. In an electric railway, employing a constant or nearly constant current in the supply circuit, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, electric heaters to heat said vehicles and connected in the supply circuit in series, and means to control the current flowing through the heaters, independently of the motors. 14th. In an electric railway, a supply circuit extending along the way, travelling vehicles, electric motors on said vehicles electrically connected to the supply circuit to propel the vehicles, and connected to the supply circuit in series, and means to control the current flowing through the heaters independent of the motors. 15th. In an electrically propelled vehicle, provided with a motor arranged to employ a constant or nearly constant current of varied electro active force, an electric heater carried by the vehicle to heat the same, a circuit on the vehicle including said motor and heater, and means to regulate the current flowing through the heater, independently of the motor. 16th. In an electrically propelled vehicle provided with a motor, arranged to employ a constant or nearly constant current of varied electro-motive force, an electric heater carried by the vehicle to heat the same, a circuit on the vehicle including said motor and heater, and means to automatically regulate the current flowing through the heater, independently of the motor. 17th. In an electrically propelled vehicle provided with a motor, arranged to employ a constant or nearly constant current of varied electro motive force, an electric heater, carried by the vehicle to heat the same, a circuit on the vehicle including said motor and heater in series, and means to automatically regulate the current flowing through the heater, independently of the motor. 18th. In an electric railway, a line working conductor, a travelling vehicle, an electric motor to propel said vehicle, an electric heater carried by

the vehicle to heat the same, an electrical connection between the vehicle and working conductor to supply current, and means to automatically regulate the current flowing through the heater, independently of the motor. 19th. In an electric railway, a line working conductor supplied with a constant or nearly constant current, travelling vehicles, electric motors on said vehicles connected in the line conductor in series to propel the vehicles, electric heaters to heat said vehicles, and suitable means for supplying current to the heaters from the line conductor.

No. 41,483. Toe Weight for Horses.

(*Contre-poids de sabot.*)

Cornelius W. Van Etten, Chicago, Illinois, U. S. A., 9th January, 1893; 6 years.

Claim.—1st. In a toe weight of the character described, the outer member provided with a series of recesses in its inner side, and a series of weights removably fitted in said recesses, as set forth. 2nd. The toe weight comprising two members detachably connected, the inner member consisting of a plate provided with screw holes, whereby it is adapted for permanent application to a hoof, and a central opening and upon its front face provided with a lug radially slotted and arranged over the central opening and the remaining member consisting of a weight having its near face recessed to fit the lug, and a transverse opening and a screw inserted through the opening and having its head removably mounted in the central opening of the plate in rear of the lug, and its neck resting in the radial slot in the lug, substantially as specified. 3rd. A toe weight consisting essentially of two members fitted detachably together, the inner members being rigidly secured to the hoof, and the outer member having a series of weight receiving recesses the mouths of said recesses facing the inner member so that the latter holds the weights in place, as set forth. 4th. A toe weight consisting essentially of two members, the inner member being rigidly and permanently secured to the hoof, while the outer member is provided with a series of weight receiving recesses and a screw removably fitted to the inner member, and passing through the outer member and secured by a nut, as set forth.

No. 41,484. Electric Battery. (Pile électrique.)

Daniel Martin Lamb, Boston, Massachusetts, U. S. A., 10th January, 1893; 18 years.

Claim.—1st. The hereinbefore described method of enveloping the individual granules or particles of the active material of an electric battery with a water repellent substance. 2nd. The hereinbefore described method of enveloping the individual granules or particles of the active material of an electric battery, with a resinous or waxy water repellent substance, by heating and stirring the mixture. 3rd. The hereinbefore described method of mixing the various ingredients of the active material of an electric battery with resin, all in the form of powder, and heating them sufficiently to melt the resin, whereby each granule or particle of the composition is enveloped in the resin, or equivalent resinous water repellent material. 4th. The method hereinbefore described of preparing active material for electric batteries, which consists in coating each separate granule with water repellent material, and then mixing such coated material with other uncoated ingredients. 5th. The method hereinbefore described of preparing active material for electric batteries, which consists in coating each separate granule with water repellent material, and then mixing said coated material with granulated black oxide of manganese and small lead shot. 6th. The hereinbefore described active material for an electric battery, consisting of a composition of pulverized ingredients in the form of granules or coarse powder, each of whose granules or particles is separately enveloped with a water repellent substance. 7th. As active material for an electric battery, compositions of matter, substantially such as described, in the form of powder, each separate granule or particle of which compositions is coated with resinous matter. 8th. Active material for an electric battery, consisting of a mixture of granules, each separately coated with water repellent material, and granules of black oxide of manganese not so coated. 9th. The hereinbefore described composition for active material for electric batteries, consisting of black oxide of manganese, sal ammoniac, sulphate of copper, and a bichromate such as potash or soda, pulverized or mixed in the form of granules, each coated with water repellent material. 10th. The hereinbefore described method of preventing clogging of the electrodes of an electric battery, by enveloping them in absorbent, fibrous or textile material. 11th. The combination, substantially as hereinbefore set forth, in an electric battery, of granulated active material, water repellent material enveloping each separate granule, electrodes, envelopes therefor of absorbent paper, and an exciting fluid such as water. 12th. The combination, substantially as hereinbefore set forth, in an electric battery, of granulated active material, the particles of which are separately enveloped in a water repellent substance, such as resin or paraffine, electrodes, their envelopes of absorbent or permeable material, and an exciting fluid. 13th. A battery cell consisting of the combination of a containing vessel, a series of independent cells therein, each enclosing a tubular zinc electrode and a carbon rod electrode, all the electrodes being connected in circuit, and the spaces between them and the cells being filled with granulated active material, having its individual particles each enveloped with water repellent

material, substantially as hereinbefore set forth. 14th. The hereinbefore described electric battery, consisting of a containing vessel, a series of independent cells therein, zinc and carbon electroded concentrically arranged in each cell, their connecting wires, active material, the granules of which are each separately coated with a water repellent material, filling the cells, absorbent material surrounding the cells, and an exciting fluid covering the active and absorbent material.

No. 41,485. Knitting Machine. (Machine à tricoler.)

Joseph Bennor, Macon, Georgia, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. In a knitting machine, the combination, with the needle beds, the needles, the knitting cams, and shifting devices therefor, of the sliding abutment bar so disposed that its ends normally project into the paths of said shifting devices, respectively, and provided with the openings or offsets, the pattern mechanism, and provisions intermediate the same and the abutment bar, whereby the latter may be moved endwise at predetermined intervals, substantially as described. 2nd. In a knitting machine, the combination, with the needle beds, the needles, the knitting cams, and shifting devices therefor, of the sliding abutment bar provided with the openings or offsets, the pivoted lever connected with said bar, and the pattern mechanism for operating said lever, substantially as described. 3rd. The combination of the knitting cams, the sectional carriage therefor, and devices adapted to guide the carriage in its longitudinal traverse, one of the sections of the carriage supporting the knitting cams, and being movable transversely in respect to the other section, and the latter being confined to a longitudinal path, together with means for the transverse adjustment of the cam supporting section, substantially as described. 4th. The combination of the sectional carriage and its guiding and operating devices, of the knitting cams on the lower section of the carriage, the eccentric in one of said sections, and means for connecting said eccentric with the other section and locking said eccentric in positions of adjustment, substantially as described. 5th. In a knitting machine, the combination, with the needle bed, its needles, the cam carriage and the knitting cams, of the oscillatory arm or sector mounted in the cam carriage, and provisions whereby said arm or sector is operatively connected with the knitting cams, together with means for operating said arm or sector, substantially as described. 6th. In a knitting machine, the combination, with the cam carriage, and the knitting cams therein, of the oscillatory sector provided with the operating arm, provisions whereby the sector is operatively connected with said cams, and tappet pin adapted to act upon said sector, substantially as described. 7th. In a knitting machine, the combination, with the cam carriage, and the knitting cams therein, of the oscillatory arm or sector, means whereby it is operatively connected with said cams, means whereby it is oscillated, and means whereby it is locked in positions of adjustment, substantially as described. 8th. In a knitting machine, the combination with the cam carriage, and the knitting cams therein, of the oscillatory arm or sector provided on one edge thereof with notches or recesses, means whereby this arm or sector is operatively connected with the cams, and means whereby it is oscillated, together with the spring controlled locking pin adapted to engage the said notches or recesses, substantially as described. 9th. In a knitting machine, the combination with the cam carriage and the knitting cams therein, of the vibratory guard cam mounted below the knitting cams, and means for operating said guard cam during the traverse of the carriage, substantially as described. 10th. In a knitting machine, the combination with the cam carriage and the knitting cams therein, of the guard cam pivotally mounted below the knitting cams, and the studded slide bar adapted to operate said guard cam, substantially as described. 11th. The combination with the supporting frame, the needle beds, the needles, and the knitting cams, of the fixed nut or boss secured to the frame, the shaft, the travelling screw thereon engaged with the said nut or boss, the vibratory needle actuating lever fulcrumed in proximity to the screw, provisions whereby this lever is impelled by and with the screw, and provisions whereby it is vibrated in its traverse, substantially as described. 12th. The combination with the supporting frame, the needle bed, the needle and the knitting cams, of the fixed nuts or bosses, the shaft, the travelling oppositely pitched screws thereon, the vibratory needle actuating levers fulcrumed in proximity to the screws respectively, provisions whereby the levers are impelled by and with the screws, and provisions whereby they are vibrated in their traverse, substantially as described. 13th. The combination with the supporting frame, the needle bed, the needles and the knitting cams, of the fixed nuts or bosses, the parallel shafts, the travelling screws on one of said shafts, the vibratory needle actuating levers fulcrumed on the other shaft, the plates mounted on said latter shaft, provisions whereby these plates and the levers are impelled by and with the screws, and provisions whereby the levers are vibrated in their traverse, substantially as described. 14th. The combination of the supporting frame, the fixed nut or boss, the shaft, the screw, provided with the grooved head and the end pin or roller, the plate engaging said groove, a supporting device for said plate, and the needle actuating lever fulcrumed in respect to said plate and pin or roller, substantially as described. 15th. The combination of the supporting frame, a shaft, a lever fulcrumed thereon and provided with a pair of needle operating teeth

or projections, means for reciprocating said lever lengthwise of the shaft, and means for oscillating said lever, substantially as described. 16th. The combination of the supporting frame, a shaft, a lever thereon, one of the arms of said lever being provided with needle operating teats or projections, and the other arm being bifurcated, means for acting upon the said latter arm in a manner to oscillate the lever, and a means for maintaining said lever in a normal position, substantially as described. 17th. In a knitting machine, the combination, with the supporting frame, a shaft, a needle operating lever thereon, and means for actuating said lever, of the spring pressed plunger, supported in proximity to said lever, and adapted to act upon a V-shaped cam surface on the edge thereof, together with means for supporting said plunger, substantially as described. 18th. The combination of the rock shaft, the yarn carrier thereon, means for reciprocating said carrier, and means for rocking or oscillating said shaft at predetermined intervals, substantially as described. 19th. The combination of the slide or carrier, and its supporting and operating parts, of the yarn guide, means whereby it is connected with said slide or carrier, and provisions whereby said guide is deflected from its direct path at the end of each reciprocation of the slide or carrier, substantially as described. 20th. The combination, with the needle beds, the needles and the knitting cams, of the slides or carriers, mounted above the needle beds in the respective beds, the longitudinal guide devices for said slides or carriers, the laterally movable yarn guides connected with the carrier, so as normally to be in line with each other longitudinally, and the end device adapted to deflect said yarn guide laterally at predetermined intervals, substantially as described. 21st. The combination of the shaft, the sleeve or block thereon, the yarn guide head depending from said sleeve or block and means for oscillating the said sleeve or block at predetermined intervals, substantially as described. 22nd. The combination, with the rock shaft, the yarn carrier thereon, and means for reciprocating said carrier, of the spring operating to maintain said rock shaft in a normal position, and the end device adapted to act upon said carrier to deflect it laterally, substantially as described. 23rd. The combination, with the needle beds, the needles and the knitting cams, of the rock shafts mounted above the respective beds, the yarn carriers on said shafts, the depending pins, the stops therefor, the spring and the end deflecting device, substantially as described. 24th. The combination of the needle beds, the needles and the knitting cams, of the rock shafts mounted above the respective beds, the sleeves or blocks on said shafts, the depending projections on said sleeves or blocks, the yarn guide heads connected with said projections, the spring adapted to maintain said shafts in a normal position, and the end pin adapted to act upon the said projections to deflect the guide heads and their connections laterally against the action of the said spring, substantially as described. 25th. The combination with the needle beds, the needles, the knitting cams, the yoke connecting the same, the yarn carrier and its supporting parts, of the transverse slide rod or bar mounted in respect to the path of said carrier, and means for operating the said rod or bar to engage it with or disengage it from said carrier, substantially as described. 26th. The combination with the needle beds, the needles, the knitting cams, the yoke connecting the same, the yarn carrier and its supporting parts, of the transverse slide rod or bar mounted in the said yoke, and adapted to be engaged with and disengaged from said carrier, the horizontal lever mounted in proximity to said rod or bar, and means for operating said lever, substantially as described. 27th. The combination with the needle beds, the needles, the knitting cams, the yoke connecting the same, the yarn carrier and its supporting parts, of the transverse slide rod or bar mounted in the said yoke, and adapted to be engaged with and disengaged from said carrier, the horizontal lever mounted in proximity to said rod or bar, connected therewith, and provided with the bifurcated end, and the pattern mechanism adapted to operate said vertical lever, substantially as described. 28th. The combination with the needle beds, the needles, the knitting cams, the yoke connecting the same, the yarn carrier provided with the up-projecting studs, the transverse slide bar provided with the depending lug, and means for operating said bar to move its lug between and away from said studs, substantially as described. 29th. The combination with the needle beds, the needles, the knitting cams and their supporting parts, of the reciprocative yarn carriers mounted above the respective beds, a transverse rod or bar, a support therefor and means for operating said rod or bar at predetermined intervals to engage it with and disengage it from said carriers, respectively, substantially as described. 30th. The combination of the needle beds, the needles, the knitting cams, and the yoke connecting the same, the reciprocative yarn carriers, their supporting parts, and means for laterally deflecting said carriers at one end of the machine, towards this end of the machine by the action of the yoke frame and having provisions whereby they are impelled in the opposite direction by the action of a movable member supported on the yoke, together with said member, and means for operating the same, substantially as described. 31st. The herein described yarn guide and latch controller for straight knitting machines, said guide comprising a centrally perforated end pointed head provided with the lateral lug at its upper end and with the securing rod projecting from said lug, substantially as described. 32nd. The combination of the series

of sinkers, their supporting frame provided with a corresponding series of transverse holes in line with said sinkers, the spiral springs in said holes, and means for confining them therein, together with a cam device for overthrowing said sinkers at predetermined intervals, substantially as described. 33rd. In a knitting machine, the combination, with the needle beds, the needles, the knitting cams, the sinkers and their supporting parts, of a grooved end-bevelled sinker actuating head, and means for supporting and operating the same in respect to the knitting cams, substantially as described. 34th. The combination, with the cam carriage and the arm extending therefrom, of the sinker actuating head having a sliding connection with said arm, substantially as described. 35th. The combination, with the supporting frame, of the series of sinkers and the rod upon which said sinkers are mounted so as to be operative independently of each other, said rod being applied to the under side of the said frame, together with the set screws bearing against the ends of the rod to secure it detachably in place, whereby the said rod equipped with the sinkers may be directly applied to or removed from the under side of said frame, substantially as described. 36th. The combination, with the needle bed and its needles, of a series of bits bearing upon the latter, and a series of springs acting upon said bits individually, together with means for supporting said bits and springs, substantially as described. 37th. The combination, with the needle bed and its needles, of the bar, the series of bits therein in line with the needles, and the series of spiral springs acting upon said bits, substantially as described. 38th. The combination, with the needle bed and its needles, the bit supporting bar with its slits or kerfs, the series of frictional bits therein, the springs acting upon said bits, and covering plate confining said springs, substantially as described. 39th. In a knitting machine, the combination, with the driving mechanism, a rock shaft mounted in proximity thereto and equipped with means whereby said mechanism may be thrown into or out of action, a locking lever, an arm upon the rock shaft adapted to be engaged by said lever, a drop rod adapted to operate said lever to release the rock shaft, means for conditionally supporting said rod, together with the take-up lever through which the yarn passes, and means, such as a spring, for maintaining said rock shaft in a normal position, substantially as described. 40th. In a knitting machine, the combination of the fast and loose pulleys, the rock shaft, the belt shipping frame thereon, the vertical arm on said shaft, the notched lever adjacent to said arm, the drop rod, means for conditionally supporting the same, the take-up lever adapted to operate said drop rod, and means, such as a spring, for maintaining the rock shaft in a normal position, substantially as described. 41st. The combination, with the take-up lever and the vertical supporting rod therefor, of the separate oppositely inclined fingers 35, supported in proximity to said lever, substantially as described. 42nd. The combination, with the take-up lever and the vertical supporting rod therefor, of the inclined fingers 35, adjustably supported in proximity to said lever, and means for adjustably securing said fingers in place, substantially as described.

No. 41,486. Bottle Cleaner and Washer.

(Appareil pour nettoyer et laver les bouteilles.)

Otto Eick, Philadelphia, Pennsylvania, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. In a bottle washing machine, in combination, a basket adapted to support the bodies of the bottles, and a plate, as K, provided with orifices adapted to receive the mouth pieces of the bottles, the upward extension of which orifices is limited by the upper surface of said plate K. 2nd. In a bottle washing machine, in combination, as K, provided with orifices, a hollow spindle adapted to revolve, a brush in the end of said spindle, a spring nozzle which surrounds said spindle and brush. 3rd. In a bottle washing machine, in combination, a plate, as K, adapted to move vertically provided with orifices, a guide, as M, secured to said plate, a spring secured to said guide, a nozzle resting in said guide, a spindle adapted to revolve, and a brush in the end of said spindle. 4th. In a bottle washing machine, a brush which consists of tubes of flexible material connected around a core. 5th. In combination, uprights, as L, L, a plate, as K, provided with collars as k, k, surrounding said uprights, and provided with orifices, a lever as R, connected to said plate K, a spring nozzle adapted to be moved by said plate, a spindle adapted to revolve, a brush at the end of said spindle, said nozzle surrounding said spindle and brush. 6th. In a bottle washing machine, in combination, uprights as L, L, a plate, as K, provided with collars as k, surrounding said uprights, a lever as R, connected to said plate K, orifices in said plate K, a guide as M secured to said plate, a spring secured in said guide, a nozzle resting in said guide, a spindle adapted to revolve, a brush on the end of said spindle, and means to admit water to said spindle, and means to cause said spindle to revolve. 7th. In combination, uprights as L, L, a plate as K, provided with orifices, a plate as P provided with sleeves which surround said uprights, and a lever or other devices as Q connected to said plate, whereby said plate may be moved vertically. 8th. In combination, uprights as L, L, a plate as K, provided with orifices, sleeves connected to said plate K, and surrounding said uprights, a plate as P provided with sleeves which surround said uprights, and a lever as R connected to both plates K and P, whereby said plates are caused to move vertically together. 9th. In combination, a plate as K provided with orifices, and plate as P, and means substantially as described to move the plate

P vertically, and means, substantially as described, to move plate P and plate K vertically together, a spindle adapted to rotate, a brush on the end of said spindle, and a spring nozzle surrounding said spindle. 10th. In combination, uprights as L, L, a plate as K, provided with orifices, sleeves connected to said plate K, and surrounding said uprights, a plate as P, provided with sleeves which surround said uprights, and a lever as R, connected to both plates K and P, whereby said plates are caused to move vertically together, a spindle adapted to rotate, a brush on the end of said spindle and a spring nozzle surrounding said spindle. 11th. In combination, a plate as K, provided with orifices, a plate as P, means substantially as described to move plate P and plate K vertically together, a spindle adapted to rotate, a brush on the end of said spindle, a spring nozzle surrounding said spindle, and means substantially as described to automatically admit the water to said spindle when the plates are moved downward, and to cut off the water when the plates are moved upward. 12th. In combination, uprights as L, L, a plate as K, provided with orifices, sleeves connected to said plate K, and surrounding said uprights, a plate as P, provided with sleeves which surround said uprights, and a lever as R connected to both plates K and P, whereby said plates are caused to move vertically together, a spindle adapted to rotate, a brush on the end of said spindle, a spring nozzle surrounding said spindle, a water reservoir connection between said water reservoir and the spindles, a source of water supply, connection between said source and said reservoir, a valve as C, connection substantially as described, between said valve and the lever R, whereby when said lever is operated the water is admitted or shut off from said spindles. 14th. In a bottle washing machine, a brush which consists of a series of rubber tubes closed at one end and connected to each other, substantially as and in the manner described. 15th. In a bottle washing machine, a brush which consists of a series of rubber tubes closed at one end, and containing weighty material at their closed end. 16th. In a bottle washing machine, a brush consisting of rubber tubes as t, t, t, t , closed at one end, and provided with weighty material in their closed end, a surface as t' , common to all the tubes, said tubes being wound round a threaded core as j , and provided with a central hollow water plug as J. 17th. In a bottle washing machine, in combination, a spindle as E, the interior end of said spindle being threaded, a brush consisting of rubber tubes t, t, t, t , closed at one end and provided with weighty material in their closed end, a surface as t' , common to all the tubes, said tubes being wound around a central water plug J, the threaded end of said brush being adapted to be secured in the threaded end of the spindle. 18th. In a bottle washing machine, a brush which consists of tubes of flexible material, with a flexible piece connecting said tubes, said flexible tubes being connected around a core.

No. 41,487. Pump. (*Pompe*.)

Charles Hodgson, Jacksonville, Florida, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. A pump for raising water near a railroad, comprising pump barrel closed at both ends, connected to a reservoir and provided with a delivery pipe, a piston fitting in said pump barrel, a flexible piston rod connected to each side of said piston and passing through stuffing boxes in said pump barrel, and means for attaching said piston rod to a car on said railroad, substantially as described. 2nd. In a pump for raising water near a railroad, the combination with a pump barrel connected to a reservoir, of a piston fitting in said barrel, a wire rope connected to both ends of said piston and forming a flexible piston rod, and means for connecting said rope to a car on said railroad, substantially as described. 3rd. In a pump for raising water near a railroad, the combination with a pump barrel connected to a reservoir and discharging into a tank, of a piston fitting in said barrel, a wire rope connected to both ends of said piston, running over sheaves or drums, and forming an endless flexible piston rod, and means for connecting said rope to a car on said railroad, substantially as described. 4th. In a pump for raising water near a railroad, the combination with a pump barrel connected to a reservoir and discharging into a tank, of a piston fitting in said barrel, two wire ropes under tension, each secured at one end to said piston passing through stuffing boxes in the opposite ends of said pump barrel, running over drums, and secured together at their opposite ends with a turnbuckle, and means for connecting said rope to a car on said railroad, substantially as described. 5th. In a pump for raising water near a railroad, the combination of the pump barrel A, piston P, wire rope R, drum D, and D^1 , and pipes C, C^1 , C^2 and C^3 , having valves V opening upward, substantially as described. 6th. In a pump for raising water near a railroad, the combination of the pump barrel A, piston P, wire rope R, stuffing boxes S, turnbuckle H, drums D and D^1 , and pipe C, C^1 , C^2 and C^3 , having valves V opening upward, substantially as described.

No. 41,488. Sulky Plow. (*Charrue à sidge*.)

Ephraim Stock, Hams Fork, Wyoming, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. The combination, with a plow-beam carrying a plow-share, of a tongue having a bearing thereon pivoted to the said beam, and a flexible coupling connected to the said beam and passing over the said bearing on the tongue, to which coupling draft strains may be applied as described. 2nd. The combination, with a plow-beam carrying a plow-share, of a tongue having a bearing thereon pivoted to the said beam, a flexible coupling connected to the said beam and passing over the said bearing on the tongue, to which coupling draft strains may be applied, and means whereby the said plow-beam and tongue may be locked in any desired position, as described. 3rd. The combination, with a plow-beam carrying a plow-share, of a tongue having a bearing thereon pivoted to the said beam, a flexible coupling connected to the said beam and passing over the said bearing on the tongue, to which coupling draft strains may be applied, a cross bar having its one end secured to the tongue and its opposite end bent upwardly, a rack bar contained in the said upwardly bent end of the cross bar, a wheel carried on the lower end of the said cross bar, a segmental rack engaging the said rack bar, means for locking the said rack in any desired position, an L-frame pivoted in the rear of the said cross bar, one arm thereof being bifurcated and the opposite arm being provided with a suitable lock, and a wheel mounted within the bifurcated arm of the said frame, as described.

No. 41,489. Step Ladder. (*Echelle à marches*.)

John E. Gordon, Lexington, Kentucky, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. A ladder consisting of the sides, the steps, the horizontal wheels or rollers connected with said sides, and the downwardly depending arms secured to the sides and having vertical wheels or rollers journaled in their lower ends, substantially as described. 2nd. The combination with the ladder consisting of the sides, the steps, and the wheels at the upper end thereof, and the depending arms having rollers at their lower ends, of the shelving having a projecting cover and a downwardly depending flange, and the grooved track at the lower end of said shelving, substantially as described.

No. 41,490. Organ. (*Orgue*.)

James Bailie Hamilton, 14 Upper Cheyne Row, Middlesex, England, 10th January, 1893; 6 years.

Claim.—1st. In pipe or reed organs or like musical instruments, the combination of levers carried by the action rods themselves, one arm being connected to the valves and the other ends being acted upon by an obstructor brought or turned into the obstructing position when the stop is to be brought into action. 2nd. In pipe or reed organs or like musical instruments, the connection of the stops of one manual with the keys of another, as well as the connection of one manual to another by means of levers carried by the action rods themselves or their equivalents in operation, one arm of each lever being connected to the valves or arranged to make contact with the keys or valves, and the other ends being acted upon by an obstructor brought or turned into the obstructing position when the stop is to be brought into action, as set forth. 3rd. In pipe or reed organs or like musical instruments, the combination with the valves, the keys, the action rods, levers pivoted to such rods and connections between said levers and valves, of a series of T-shaped cams (one cam for each rod) strung upon an axis with intervening spaces, a series of pins, one pin set in each cam and overlapping another cam, a spur on each action rod arranged to operate the cam of the adjacent note in the direction of the overlaps of said pins, and mechanism for restoring the parts to their normal position after deflection by the keys, as set forth.

No. 41,491. Apparatus for Uncoupling Cars.

(*Appareil pour découpler les chars*.)

Sigismund B. Wortmann, New York, State of New York, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. The combination with a draw head and an axle, of a shaft having a loose gear wheel geared to said axle, a clutch carried by said shaft and adapted to engage the gear wheel, a pin lifting device and mechanism operated by the shaft to operate the pin lifting device, substantially as described. 2nd. The combination with a draw head an axle, of a shaft carrying a cam or projection, a pin lifting lever, and an operating lever adapted to be operated by the cam or projection to lift the pin support, substantially as described. 3rd. The combination with a draw head, of a pivoted pin support engaging the pin in said draw head, a shaft having a cam or projection thereon, and a lever connected to the pin support and arranged within the path of said cam or projection, substantially as described. 4th. The combination with a draw head, of a pivoted pin support fitted to the pin, a shaft having a cam, a lever connected to the pin support and adapted to be operated by the cam, and mechanism for clutching the shaft to one of the axles of the car, substantially as described. 5th. The combination with a draw head, of a pivoted pin support fitted to the pin, a shaft having a cam, a lever connected to the pin support and having a shoe arranged in the path of the cam, a gear wheel loose on the shaft and geared to an axle, and a

clutch also carried by the shaft, substantially as described. 6th. The combination with a draw head, of a pin lifting lever H, pivoted to the drawhead and having the supports h, engaging with the pin, a shaft having a cam or projection, the lever G, connected to the lever H, and having a shoe in the path of the cam, a gear c, rigid with an axle, another gear loosely fitted on the shaft to mesh with the gear c, and having the serrated hub, and the clutch keyed to the shaft and adapted to be shifted by a hand lever to engage the loose gear on said shaft, substantially as described.

No. 41,492. Car for Electric Railways.

(*Char pour chemins de fer électriques.*)

Mark Wesley Dewey, Syracuse, New York, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. In an electric railway, a working conductor arranged along the railway, a vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, a shunt circuit around the motor on the vehicle, an electric signal device at each end of the vehicle, and connected in the shunt circuit in series, means to cut one or the other of said signal devices out of circuit, and a plurality of circuit makers in multiple arc connection with the shunt circuit, and distributed equal distances apart through the interior of the vehicle. 2nd. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, a normally open shunt circuit around the motor on the vehicle, an electric signal bell in said shunt circuit, and a plurality of circuit makers in multiple arc connection with said shunt circuit, and distributed through the interior of the vehicle. 3rd. In an electric railway, a working conductor arranged along the railway, a travelling vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, a shunt circuit around the motor on the vehicle, a plurality of electric signal devices in circuit, and located at each end of the vehicle, and a plurality of circuit makers and breakers in multiple arc connection with said shunt circuit, and distributed through the interior of the vehicle, and means to cut one or more of the said signal devices out of circuit. 4th. In an electric railway, a working conductor arranged along the track, a travelling vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, a normally open shunt circuit around the motor on the vehicle, an intermittent electric signal device, a plurality of circuit makers and breakers, and a rheostat in said shunt circuit, a normally closed branch of said shunt circuit, an electric signal device adapted to operate continuously in said branch, and means to cut the latter device out of circuit to prevent the operation of the same, as set forth. 5th. In an electric railway, an electrically propelled vehicle, an electric motor to propel said vehicle connected with the vehicle conductor, a source of electric energy, a normally open shunt circuit around the motor on the vehicle, a plurality of electric signal devices in said shunt circuit in series, and located at each end of the vehicle, and a plurality of circuit makers and breakers in multiple arc connection with said shunt circuit, and distributed through the interior of the vehicle, as set forth. 6th. In an electric railway, an electrically propelled vehicle, an electric motor to propel said vehicle connected with the vehicle conductor, a source of electric energy, a normally open shunt circuit around the motor on the vehicle, a plurality of electric signal devices in series in said shunt circuit, a plurality of circuit makers and breakers in multiple arc connection with said shunt circuit, and a shunt path containing a circuit maker and breaker around each of the signal devices, as set forth. 7th. In an electric railway, a working conductor arranged along the railway, a vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, a shunt circuit around the motor on the vehicle, an electric signal device at each end of the vehicle, and other of said signal devices out of circuit, and a plurality of circuit makers in multiple arc connection with the shunt circuit, and distributed equal distances apart through the interior of the vehicle, and on each side of the same. 8th. In an electric railway, a working conductor arranged along the railway, a vehicle, an electric motor to propel said vehicle, an electric connection between said motor and working conductor, a shunt circuit around the motor on the vehicle, an electric signal device connected in the shunt circuit, and a plurality of circuit makers in multiple arc connection with the shunt circuit, and distributed equal distances apart through the interior of the vehicle and on each side of the same.

No. 41,493. Loader and Unloader for Hay Racks.

(*Appareil à charger et décharger les râteliers à foin.*)

Frederick Glasscoe Anderson, New Oxley, Alberta, North-west Territories, Canada, 10th January, 1893; 6 years.

Claim.—1st. In a hay rack loader and unloader, the tilting lever balanced medially to vibrate at its front end from the horizontal position downward, substantially as shown and described. 2nd. The combination of the tilting lever, medially balanced and supported on a bearing post, the bearing post supporting said lever balanced medially thereon, and the shorter forward post to limit the depression of and support the front end of said lever, substantially as shown and described. 3rd. In combination, the tilting

lever medially balanced and supported, the bearing post supporting said lever thereon, the shorter post in front of said bearing post to limit the depression of said lever at its front end, and the rear post having means to stop the rear end of said lever at the horizontal line, substantially as shown and described.

No. 41,494. Folding Bed. (*Lit pliant.*)

John Daniel Ennes, Norfolk, Virginia, U. S. A., 10th January, 1893; 6 years.

Claim.—1st. The supporting frame having curved tubes E on either side, in combination with the bed connected with said supporting frame by legs M, said bed turning upon the upper ends of said legs and said bed having tubular runners m, which slide on the curved portions of said tube E, substantially as set forth. 2nd. The vertical supporting frame for a folding bed, composed of the combination of the side horizontal tubes A, A, connected by the cross tubes B, the vertical tubes D, connected to said tubes A, A, the curved vertically extending tubes E, connected to said tubes D, the rearwardly curved horizontal tube F, connected at opposite ends to said tubes E, the short horizontal cross tubes G, G, connected to the said tubes A, A, at the rear of the frame, the vertical tubes H, H, connecting said tubes G, G, to said tube F in the rear of the frame, the vertical tube H¹ at the rear of the frame, connected to the said tube F, the cross tube I at the top and rear of the frame, connected to said tube H¹, and the tubes K, connected at their lower ends to said tubes E, and bent backward and connected at their upper ends to said tube I, substantially as set forth. 3rd. The supporting frame comprising lower cross tube B, and curved vertically extending tubes E, E, in combination with the bed frame, the rear legs M, M, swivelled at their upper ends to the bed frame and at their lower ends to said cross tube B, runners m, m, swivelled to the bed frame, and sliding on the curved portions of the tubes E, E, the front legs O, O, swivelled to the bed frame, the cross tube P, connected to said legs O, O, and the tube Q, journalled at opposite ends to the tube P, and the tube B, substantially as set forth.

No. 41,495. Game Apparatus. (*Appareil de jeu.*)

John Andrew Scott, Calgary, Alberta, Canada, 10th January, 1893; 6 years.

Claim.—1st. A game apparatus, comprising a base board having circumferentially arranged compartments thereon which represent numbers of different value, an inclined centre piece arranged within and concentric with the compartments, and a revoluble perforated table supported above the centre piece, the table having a detachable ball holding box thereon, substantially as described. 2nd. A game apparatus, comprising a base having a circumferential flange, a plurality of compartments arranged upon the plate next the flange, the compartments being open at their inner ends, an inclined centre piece arranged upon the base within and concentric with the compartments, a post supported upon the centre piece, and a revoluble perforated table held to turn on the post and provided with a circumferential flange, substantially as described. 3rd. A game apparatus, comprising a base having a circumferential flange, a plurality of vertical partitions arranged circumferentially upon the base so as to form a series of compartments, the compartments having open inner ends, an inclined centre board arranged upon the base concentric with the series of compartments, a post supported upon the centre piece, an inclined and perforated table held to turn on the upper end of the post, the table having a circumferential flange and exterior handles, and a detachable ball box carried by the table, substantially as described. 4th. The combination with the base having an inclined centre piece, the circumferential compartments and the centre posts, of the revoluble perforated table held to turn on a tenon on the post, the table having a circumferential flange, and the open topped ball box having a perforated cross brace at the top and a central handle, the handle brace and the top of the tenon being bored out to receive a flag staff, substantially as described. 5th. In a game apparatus, the combination with the inclined revoluble table having perforations thereon, of the curved guard plates arranged upon the table adjacent to the perforations, substantially as described. 6th. A game apparatus, comprising a base having thereon a plurality of circumferential compartments bored to represent different values and lettered to indicate the towns and provinces of the Dominion of Canada, an inclined centre piece arranged upon the base within and concentric with the series of compartments, and a revoluble table supported above the centre piece, the table having a circumferential flange, and holes to permit the passage of a ball through it, substantially as described.

No. 41,496. Brake. (*Frein.*)

George Martin Brill, Philadelphia, Pennsylvania, U.S.A., 10th January, 1893; 6 years.

Claim.—1st. In a brake mechanism, the combination of a transverse brake beam P, having brake shoes, transverse equalizing levers V, secured to the brake beams, upright brake levers T, fulcrumed to the truck, and longitudinal brake rods X, X¹, Y, Y¹, secured to the said equalizing levers at their extremities, and to the upright brake levers above and below their fulcral points, the said upright brake rods being secured to the longitudinal brake rods between their connection with the equalizing levers, substantially as described. 2nd. In a brake, the mechanism for securing the

simultaneous action of all the brake shoes at one time, in which the transverse brake beams and longitudinal brake rods are normally disposed in rectangular form, comprising brake beams, and shoes secured to the truck, transverse equalizing levers secured to the brake beams, and longitudinal brake rods secured to the equalizing levers at each side of the point of the union of said levers to the brake beams, and to upright brake levers fulcrumed between the equalizing levers, the said brake rods being secured to the brake levers above and below their fulcral points, substantially as described.

No. 41,497. Apparatus for Mutilating the Threads of Bolts. (*Appareil pour mutiler les filets de boulons.*)

Samuel Rufer, New Philadelphia, Ohio, U.S.A., 11th January, 1893; 6 years.

Claim.—The combination with a lever having a transverse aperture near its upper end, and a jaw grooved longitudinally on its inner face, of a lever fulcrumed thereto and provided at its upper end with a knife edge for mutilating the threads of the bolt with which it is brought into engagement, substantially as specified.

No. 41,498. Device for Distributing Fungus and Insecticide Powder. (*Machine à soupoudrer les plantes pour la destruction des insectes.*)

Christian H. Joosten, New York, State of New York, U.S.A., 11th January, 1893; 6 years.

Claim.—In a device for distributing fungus or insecticide powder, the combination, with a bellows, a receptacle attached to the fixed side of the bellows, a communication being established between the receptacle and the interior of the bellows, and a nozzle projecting from the lower end of the receptacle beyond the bellows, of a partition located in the receptacle above its connection with the nozzle, said partition being provided with a series of apertures arranged in groups, a slide or damper consisting of a hub and a series of wings, the latter being adapted to be carried beneath the apertures in the partition and close to them or partially close to them, as desired, a scale located upon the outer face of the receptacle, a pointer carried by the slide or damper, an agitator held to revolve over the apertured partition, the said agitator consisting of a hub and a series of wings radiating therefrom, the wings having a grater like surface, a spider fixedly secured above the agitator, a shaft connected with the agitator and extending down through the damper or slide, the apertured partition and the bottom of the receptacle, a crank arm formed at the lower end of the shaft, and a link connection between the crank arm and the movable portion of the bellows, as and for the purpose set forth.

No. 41,499. Method of Rolling Plate or Sheet Glass.

(*Méthode de laminer les plaques de verre ou vitre.*)

James William Bonta, Wayne, Pennsylvania, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. The method herein described for rolling plate glass which consists in first rolling one side of the plate, then rotating said plate to reverse its sides, and then rolling the other side of the plate, substantially as set forth. 2nd. The method of rolling plate glass, which consists in first rolling the plate on one side, then placing it between platens, then raising both platens, then rotating the same, then lifting one of said platens, and then rolling the other side of the plate, substantially as set forth.

No. 41,500. Combined Bill and Letter File and Perforating Appliance. (*Serre papier et appareil pour perforer.*)

John Walter Grantland, Philadelphia, Pennsylvania, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. A combined portable bill and letter file and perforating appliance, comprising a main frame provided with receiving pins and a covered chamber provided with punch apertures, transfer wires connected with crank arms and afforded a rotary movement on or about the axes of their vertical shanks, an operating rod or arm accessible from the exterior of the chamber and a swinging frame pivotally connected with said cover and having spring strippers and punches, substantially as and for the purposes set forth. 2nd. A combined portable bill and letter file and perforating appliance provided with a main frame having receiving pins, transfer wires provided with crank arms and having a rotary movement about the axes of their vertical shanks and an operating rod or arm connected with the respective crank arms and accessible from the exterior of the device, substantially as and for the purposes set forth. 3rd. A combined portable bill and letter file and perforating appliance provided with a main frame having receiving pins and a chamber, crank arms journaled in said chamber and having transfer wires, pins projecting from said crank arms and a recessed operating rod mounted in said chamber and accessible from the exterior thereof, substantially as and for the purposes set forth. 4th. A combined portable letter and bill and letter file and perforating appliance provided with a main frame having a covered chamber, receiving pins provided with sockets, transfer wires having a rotary movement

about the axis of their vertical shanks, a spring actuated swinging perforating device pivotally connected with the main frame and the extremities of the spring adapted to operate as a stripper and guides and punches interposed between said perforating device and the cover of said chamber, substantially as and for the purposes set forth. 5th. A combined portable bill and letter file and perforating appliance provided with a main frame having receiving pins, transfer wires having a rotary movement about the axis of their vertical shanks and crank arms connected therewith, an operating rod, slots in said operating rod and pins in said crank arms and one of said pins being at a greater distance from the axis of its complementary crank arm than the other pin is with respect to the axis of its complementary crank arm, substantially as and for the purposes set forth. 6th. In a portable bill and letter file and perforating appliance having a main frame provided with receiving pins and transfer wires having a rotary movement about the axis of their vertical shanks, of an operating rod or arm accessible from the exterior of the main frame and suitable connections between said rod or arm and transfer wires, substantially as and for the purposes set forth. 7th. A combined bill and letter file and perforating appliance provided with receiving pins and transfer wires having a movement about the axis of their vertical shanks, and a spring controlled rod or arm suitably connected with said transfer wires and accessible from the exterior of the housing, substantially as and for the purposes set forth. 8th. A combined bill and letter file and perforating appliance provided with a main frame having a covered chamber and receiving pins, transfer wires, means for affording said transfer wires a range of rotary movement about the axis of their vertical shanks, a swinging perforating device pivotally connected with trunnions and spring strippers, and complementary dies or guides and punches interposed between the swinging perforating device and cover of said chamber, substantially as and for the purposes set forth. 9th. A combined portable bill and letter file and perforating appliance having a main frame provided with receiving pins and a chamber, crank arms mounted in said chamber, and provided with offsets forming bearings which are journaled in seats formed in the main frame, transfer wires connected with said crank arms, and an operating rod or arm accessible from the outside of said chamber, substantially as and for the purposes set forth. 10th. A combined bill and letter file and perforating appliance having a covered chamber, trunnions and dies, crank arms mounted in said chamber and provided with transfer wires having a range of rotary movement about the axis of their vertical shanks, and a spring controlled perforating device connected with said trunnions and provided with punches, substantially as and for the purposes set forth. 11th. In a combined bill and letter file and perforating appliance having a covered chamber provided with guides, transfer wires having means for affording the same a range of rotary movement on or about the axis of their shanks, and a spring controlled operating rod or arm concealed within said chamber, and accessible from the exterior thereof for actuating said transfer wires, substantially as and for the purposes set forth. 12th. A combined bill and letter file and perforating appliance provided with receiving pins, transfer wires, a chamber for the reception of the working parts of the device provided with a detachable cover, trunnions, guides and dies, and a spring controlled swinging perforated device provided with punches, and said device detachably connected with said trunnions, substantially as and for the purposes set forth. 13th. In a combined bill and letter file and perforating device, crank arms seated in a housing and connected with each other by means of a rod, and one of said crank arms provided with an arm adapted to be actuated from the outside of the housing so as to cause transfer wires suitably connected therewith to engage with and to be disengaged from receiving pins connected with the main frame of the housing, substantially as and for the purposes set forth. 14th. A combined bill and letter file and perforating device comprising a housing with a detachable cover, crank arms seated therein, and connected with each other by means of a rod, transfer wires connected with said crank arms and guided by said cover, and one of said crank arms having a rod or arm for actuating said transfer wires, and operated from the exterior of the housing, a swinging perforating device provided with spring strippers and punches, and complementary dies or guides in said cover, substantially as and for the purposes described.

No. 41,501. Digester for Paper Pulp.

(*Pourrissoir de pâte à papier.*)

Charles Curtis, Newton, Massachusetts, and Nathaniel Morrison Jones, Bangor, Maine, all in the U.S.A., 11th January, 1893; 6 years.

Claim.—1st. The improved pulp digester herein described, comprising in its construction a metal shell and a lining composed of compressed carbonized cement, as set forth. 2nd. The improved pulp digester herein described, comprising in its construction a metal shell and a lining composed of compressed cement, as set forth. 3rd. In a digester, the combination of an outer shell, a flanged collar secured thereto, an inwardly extended cylinder in said collar concentric with and of a smaller diameter than said collar, an inner lining composed of moulded blocks, and a flange screwed upon the inner end of said cylinder, and bearing on the inner surface of the inner lining, substantially as described. 4th. In a digester, the combination of an outer shell, an outwardly extended collar thereon having a flange, an inwardly extended cylin-

der in said collar concentric with and of a smaller diameter than said collar, a cement lining between the shell and cylinder, said cylinder being provided with corrugations to engage the said cement lining, an inner lining composed of moulded blocks, and a flange screwed upon the inner end of said cylinder and bearing on the inner surface of the inner lining, substantially as described. 5th. In a digester, an outer shell *a*, and inwardly extended collar *f*, having a flange *f*¹, an inwardly extended externally corrugated cylinder *g*, having a flange *g*¹, provided with openings for the insertion of the cement lining between said cylinder and collar, an inner lining composed of moulded blocks, a flange secured to the inner end of the cylinder and bearing on the said inner lining, and an outer cement lining interposed between the shell and cylinder and engaged with the corrugations of the cylinder. 6th. A digester, comprising in its construction an external metal shell, a lining composed of moulded blocks or sections, and an inner lining composed of independent plates or sheets of metallic acid resisting material, each of said plates or sheets being engaged independently with one of the said blocks or sections, as set forth. 7th. A digester, composed of a shell, a cement lining, and a series of independent metallic acid resisting lining plates, each connected to the cement at a number of points between its edges, as set forth. 8th. The combination with a digester shell and a cement lining thereof, of a series of metallic acid-resisting lining plates, each having a plurality of fastening devices secured to it and to the cement lining at points within the edges of the plates, as set forth. 9th. A digester lining block, composed of cement, having a metallic acid resisting lining plate attached to its inner surface by a plurality of fastening devices projecting from the back of said plate at points between the edges thereof. 10th. The combination of a metallic acid resisting lining plate, a series of fastening devices projecting from the back of the plate, and a cement support formed upon said fastening devices, as set forth.

No. 41,502. Poke for Horses. (*Carcan à cheval.*)

William A. Boyd, Township of Metcalfe, Ontario, Canada, 11th January, 1893; 6 years.

Claim.—1st. The skeleton frame blinder *e, f, g, d, h, i, k*, covered with cotton, linen or any opaque material, constructed substantially as and for the purposes hereinbefore set forth. 2nd. The combination, with the neck yoke *a, b, c*, of the skeleton frame blinder *e, f, g, d, h, i, k*, covered with cotton, linen or any opaque material, substantially as and for the purposes hereinbefore set forth.

No. 41,503. Governor for Hydraulic Motors.

(*Gouverneur pour moteurs hydrauliques.*)

Jules Clement, Romont, Switzerland, 11th January, 1893; 6 years.

Resumé.—Mécanisme d'encliquetage se composant principalement des pièces oscillantes K et M, dont la première animée d'un mouvement oscillatoire permanent porte deux cliquets *a* et *a*¹, maintenus soulevés par deux arrêts *c* et *c*¹, en combinaison avec un taquet *G*, actionné par la régulateur qui, en libérant l'un ou l'autre des cliquets produit l'oscillation de la seconde pièce M, et provoque par un embrayage ou autrement l'ouverture ou la fermeture de l'organe de réglage.

No. 41,504. Diaphragm for Electrolytic Cells.

(*Diaphragme pour cellules électrolytiques.*)

Ernest A. Le Sueur, Ottawa, Ontario, 11th January, 1893; 6 years.

Claim.—1st. A diaphragm for an electrolytic cell, consisting of a layer, sheet or film of dried and coagulated albumen, substantially as shown and described. 2nd. A diaphragm for an electrolytic cell, consisting of a layer, sheet or film of dried and coagulated albumen, combined with a sheet of supporting and strengthening material, substantially as shown and described. 3rd. The process of making a diaphragm for an electrolytic cell, consisting in first drying a layer, sheet or film of albumen and then coagulating it by heat, substantially as shown and described.

No. 41,505. Wardrobe Bed. (*Lit garde-robe.*)

Douglas D. Cook, Grand Rapids, Michigan, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. The combination with a stationary article of furniture, a bed frame pivoted therein, and a stationary track arranged in front thereof, of a movable article of furniture and rollers for supporting the same upon said track. 2nd. The combination, with a bed casing, a bed frame pivoted therein, and a stationary track provided with rails and arranged in front thereof, of an extension cabinet laterally movable on said track. 3rd. The combination, with a stationary article of furniture, a bed frame pivoted therein, and a stationary track arranged in front and at the base thereof, of a movable article of furniture and rollers for supporting the same upon said track, substantially as and for the purpose specified. 4th. The combination, with a stationary article of furniture, a bed frame pivoted therein, and a stationary track arranged in front and at the base of the lower portion thereof, of a movable article of furniture and rollers for supporting the same and permitting of its sidewise or lateral reciprocation upon said track, substantially as and for the purpose specified. 5th. The combination, with a bed casing, a bed frame pivoted therein, and a stationary

track secured in front and at the base of the lower portions thereof, of the cabinets and the rollers for supporting the same and permitting of their sidewise or lateral reciprocation upon said track, substantially as and for the purpose specified. 6th. The combination, with the bed casing, the bed frame pivoted therein, the wardrobes, and the stationary track secured in front and at the base of the lower portions thereof, of the cabinets and the rollers for supporting the same and permitting of their sidewise or lateral reciprocation upon said track, substantially as and for the purpose specified. 7th. The combination, with a bed casing, a bed frame pivoted therein, and a track secured in front and at the base of the lower portions thereof, and comprising a stationary rail and extension rails at the outer ends thereof, of the cabinets and the rollers for supporting the same and permitting of their sidewise or lateral reciprocation upon said track, substantially as and for the purpose specified. 8th. The combination, with the bed casing, the bed frame pivoted therein, the wardrobes and the track secured in front and at the lower portions thereof, and comprising the stationary rail and extension rails, at the outer ends thereof, of the cabinets and the rollers for supporting the same and permitting of their sidewise or lateral reciprocation upon said track, substantially as and for the purpose specified. 9th. The combination with the bed casing, the bed frame, the wardrobes, and the track comprising the stationary rail, the extension rails hinged to the outer ends thereof and the forwardly projecting sills having rollers at their front ends, of the cabinet and the rollers secured thereto for supporting the same and permitting of their sidewise or lateral reciprocation upon said track, substantially as and for the purpose specified. 10th. The combination, with the bed casing, the bed frame, the wardrobes, and the track comprising the stationary rail, the extension rails hinged to the outer ends thereof and provided with legs at their outer ends, the springs for holding said extension rails in raised position, and the forwardly projecting sills having rollers at their front ends, of the cabinets secured thereto for supporting the same and permitting of their sidewise or lateral reciprocation upon said track, substantially as and for the purpose specified. 11th. The combination with a bed casing, a bed frame pivoted therein, and a stationary track provided with two grooved or channelled side rails and a central rail, of a horizontal extension track provided with two rails and a laterally movable wardrobe provided with a truck at its bottom formed of two side sills and a central sill having rollers journaled therein, substantially as and for the purpose specified. 12th. The combination with a bed casing, a bed frame pivoted therein, and a stationary track provided with two grooved or channelled side rails and a central rail having its left end inclined and its upper surface arranged in a slightly higher plane than the upper surfaces of said side rails, of a horizontal extension track provided with two rails and a lateral movable wardrobe provided with a truck at its bottom formed of two side sills and a central sill having rollers journaled therein, substantially as and for the purpose specified. 13th. The combination with a bed casing, a bed frame pivoted therein, and a stationary track provided with two grooved or channelled side rails having vertical plates at their right ends and a central rail having its left end inclined and its upper surface arranged in a slightly higher plane than the upper surfaces of said side rails, and a horizontal extension track, provided with two rails having stop points near their outer ends, of a laterally movable wardrobe provided with a truck at its bottom, formed of two side sills and a central sill having rollers journaled therein, substantially as and for the purpose specified. 14th. The combination, with a bed casing, a bed frame pivoted therein, and a stationary track provided with two grooved or channelled side rails, having vertical plates at their right ends, and a central rail having its left end inclined and its upper surface arranged in a slightly higher plane than the upper surfaces of said side rails, and a horizontal extension track provided with two rails having stop points, legs and a transverse rod or handle, of a laterally movable wardrobe provided with a truck at its bottom formed of two side sills and a central sill having rollers journaled therein, substantially as and for the purpose specified. 15th. The combination, with the bed casing, the bed frame, the wardrobes, and the track, comprising the grooved sill I, the stationary rail J, the extension rails J¹, hinged to the outer ends thereof, and the forwardly projecting sills H, having the rollers M, at their front ends, of the cabinets C, C¹, each provided at its lower end with the front sill N, and the rear sill L, the latter having the peripherally grooved rollers K, journaled upon its rear side, whereby said cabinets are permitted to be reciprocated sidewise or laterally upon said track and in front of said bed casing, bed frame and wardrobes, substantially as and for the purpose specified. 16th. The combination, with a stationary article of furniture, a bed frame pivoted therein, and a stationary track arranged in front and at the base thereof, of a movable article of furniture, rollers for supporting the same upon said track, and means for connecting, guiding and holding said articles of furniture together, substantially as described. 17th. The combination, with a stationary article of furniture, a bed frame pivoted therein, a stationary track arranged in front and at the base thereof, a laterally movable article of furniture, and rollers for supporting the same upon said track, of means for connecting, guiding and holding said articles together, substantially as and for the purpose described. 18th. The combination, with the bed casing A, provided on its top with the long strip T, which projects beyond its front edge and is formed with a tongue upon its under surface, of the bed frame B,

pivoted in said casing, the cabinets C, C', formed on their tops with the grooves S, into which said tongue projects, the rollers for supporting said cabinets, and the track secured in front of the lower portion of said casing, whereby said cabinets are accurately guided as they are moved back and forth over said track and held firmly in place in front of said bed casing, substantially as described. 19th. In a wardrobe bed, the combination, with the bed casing A, having the sheaves D, attached to its sides near its lower front portion, of the bed frame B, formed with the slots E, near the front edges and along the lower portions of its side rails, and provided on the rear side of its lower end with the series of weights F, with the headboard G, above the same, and at the front of its upper end with the cross piece O, the cross piece P, hinged thereto and having the legs R, and the catch Q, for holding the latter cross piece in place, substantially as and for the purpose described. 20th. The combination, with a bed casing, a bed frame pivoted therein, and a stationary track provided with rails and arranged in front thereof, of a laterally movable wardrobe provided with a series of rollers at its bottom, and the angular plates 29 and 30, which are respectively secured near the adjacent edges of said wardrobe and bed casing, substantially as and for the purpose described. 21st. The combination, with a bed casing, a bed frame pivoted therein, and a stationary track provided with rails and arranged in front thereof, of a laterally movable wardrobe provided with a series of rollers at its bottom, the finger levers 31, having the cam slots 32, and the studs of pins 33, substantially as and for the purpose described.

No. 41,506. Spark Arrester. (*Arrête-étincelle.*)

Nathaniel W. Spencer, Centralia, Illinois, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. An attachment for the smoke stack of a locomotive, comprising a portion for connection with the smoke stack, a hood, a discharge spout and an interposed flaring mouth, as set forth. 2nd. An attachment for the smoke stack of a locomotive comprising a portion for a connection with the smoke stack, a hood, carried thereby and having contracted outlet, a shield, a spout, a mouth piece, and means for moving the shield vertically, as set forth. 3rd. An attachment for a smoke stack of a locomotive, comprising a tubular portion to connect with the smoke stack, a hood carried thereby and having contracted outlet, a spout and interposed mouth, a shield vertically movable over the upper end of the smoke stack, and connections extending to the cab whereby said shield is under the control of the person in the cab, substantially as specified. 4th. The combination with the smoke stock and the short tube, detachably connected therewith, of the hood carried by said tube and having contracted outlet at the rear, a spout with flaring mouth supported from the smoke stack, a vertically movable shield under the control of the engineer, and a reticulated connection between the hood and mouth, as set forth. 5th. The combination with the smoke stack, of a bracket secured thereto, a spout with flaring mouth supported from said bracket, a hood supported above the smoke stack, a shield vertically movable around the smoke stack, a lever pivoted on the bracket, and having operating means extending to the cab, and carrying means for actuating said shield, as set forth. 6th. A smoke stack attachment provided with a vertically movable shield with operating means under the control of the person in the cab, as set forth.

No. 41,507. Method of Making Cement.

(*Méthode de fabrication du ciment.*)

Calvin Tomkins, New York, State of New York, U.S.A., 11th January, 1893; 6 years.

Claim.—An improved process in manufacturing cement which consists in subjecting highly heated slag as it comes from the furnace and before it has been allowed to cool, to a bath of hydrate of lime and drying and pulverizing the same, substantially as described.

No. 41,508. Apparatus for Turning Railway Switch Rails. (*Appareil pour tourner les rails d'aiguille de chemin de fer.*)

John Denniston Stone, Syracuse, New York, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. The combination with a frog and a switch rail thereof, of brackets having openings therein secured upon the sides of said frog, shanks adapted to travel in said openings, and a flexible connection between said shanks, and adapted to move laterally the switch rail. 2nd. The combination with a frog, of brackets having openings therein, secured upon the sides of said frog, shanks adapted to travel in said openings, and a flexible connection between said shanks, and adapted to move laterally the switch rail. 3rd. The combination, with a frog, of brackets having openings therein, secured upon the sides of said frog, shanks adapted to travel in said openings, anti-friction rollers upon the lower side of the opening in the frog, a flexible connection between said shanks, passing through said openings and over said rollers, and adapted to move the switch rail laterally. 4th. The combination, with a frog and a switch rail, of brackets having openings therein, secured upon the sides of the frog, shanks adapted to travel in said openings, treads upon said shanks, a flexible connection between said shanks, and means upon the car for depressing said treads, as set forth.

No. 41,509. Adjuster for Car Brakes.

(*Appareil pour ajuster les freins de chars.*)

Felix Cyr and Joseph W. Cyr, both of Aurora, Illinois, U.S.A., 11th January, 1893; 18 years.

Claim.—1st. In an automatic brake adjuster or "take-up," the slide rod *d*, bent out of line and provided at such bent portion with a series of figures *b, b'*, of different lengths, and a series of slits *c, c'*, between such figures, the parts *g, g'*, of such slits being substantially in line with each other and adapted for a loop or clevis, all as set forth. 2nd. In combination with rod *d*, provided with the slits and fingers, as described, the clevis *D*, and the notched pieces *K*, all as set forth. 3rd. In combination, the part *A*, having the fingers and slide rod as described, clevis *D*, notched piece *K*, spring *N*, and cylinder levers *H, I*, all substantially as and for the purposes set forth. 4th. In combination with the brake rods and brake levers, and with the piston cylinder, and its levers *H, I*, the fingered part *A, b, c, d*, having the construction described, the clevis *D*, part *K*, having a notched slot *m*, and the spring *N*, connected to lever *I*, the combination being and operating, substantially as set forth.

No. 41,510. Autographic Register.

(*Registre autographique.*)

Samuel D. Cochrane, Wyoming, Ohio, U. S. A., 11th January, 1893; 6 years.

Claim.—1st. The method of preparing and storing the record strip of autographic registers, consisting in folding it back and forth in bellows folds before it is placed within the register, and then placing it in the register and passing it up over the writing tablet and back into the register, where it automatically resumes its folded position. 2nd. In an autograph register, the combination, with the tablet face and the feed rollers, of the record strip *K*, previously folded into bellows folds and placed in the machine at one side of the tablet face, said strip being led over the tablet face and between the feed rollers and deposited upon the opposite side thereof, whereby the supply of record strip is carried in the machine in the folded form described, and automatically resumes such folded form after having been passed over the writing tablet and between the feed rollers. 3rd. In an autographic register, the combination, with the tablet face and feed rollers, of means for supporting the check strip or strips carried in the form of a roll *E*, and the record strip *K*, previously folded into bellows folds and placed in the machine at one side of the tablet face, said strip being led over said tablet face, and between the feed rollers with the check strip or strips from the roll *E*, and thence deposited in the machine, where it resumes its folded position, substantially as described. 4th. In an autographic register, the combination, with the feed roll *H*, of the roll *I* in frictional contact therewith, the crank *U*, carried by said roll *H*, the pitman *V*, arms *P, Q*, and the guiding finger *R, S*, substantially as described, and for the purpose specified.

No. 41,511. Medecine for Cancerous Sores.

(*Médecine pour les plaies cancéreuses.*)

Albert Adam Kiewicz, Vienna, Austria, 11th January, 1893; 6 years.

Claim.—As a remedy for cancerous sores, the employment of neurine or a neurine salt in solution, injected subcutaneously either alone or in combination with carbolic acid.

No. 41,512. Square for Carpenters' Use.

(*Equerre de charpentier.*)

Thomas Spurr Morse, Lenox, Massachusetts, U.S.A., 11th January, 1893; 6 years.

Claim.—In a folding framing square, the combination with the blade having a recess in its outer longitudinal edge at its connected end, and also having said end recessed, the spring catch seated in the recess in the longitudinal edge of the blade, and connected at its lower end to said blade, the locking tongue formed on the inner longitudinal edge of said catch, adjacent to the free end thereof, and having its longitudinal edge bevelled, and a notch formed in the free end of the spring catch; of the tongue having the recessed inner end pivotally connected to the blade, and the bevelled notch formed in the inner end of said tongue and adapted to be engaged by the bevelled tongue of the spring catch when the tongue is adjusted at right angles to the blade, substantially as and for the purpose set forth.

No. 41,513. Machine for Cutting Wood.

(*Machine pour couper le bois.*)

William Merrill, Saginaw, East Side, Michigan, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. The combination in a machine for cutting wood of the frame carrying a series of throat plates, and a wheel mounted on the frame and carrying cutters projecting from its periphery, substantially as set forth. 2nd. The combination in a wood cutting machine of the frame, the shaft mounted on the frame and carrying a wheel having cutters projecting from its periphery, with a series of throat plates secured to the front portion of the frame, and with their upper inner portion arranged to stand in close proximity to the

line of travel of the said cutters, substantially as set forth. 3rd. In a wood cutting machine, the combination of the frame, the wheel mounted on a transverse shaft journalled upon the frame and provided with a series of forwardly inclined openings 9 the knives resting within said openings and with their cutting edges projecting beyond the periphery of the wheel, the tapering keys 13, passed into said openings and provided on their inner ends with outwardly turded portions 14, the bolts 15, passed through the portion 14, and tapped into the rim for tightening the keys, a throat plate upon the front portion of the frame, and the cover for inclosing the wheel, substantially as described. 4th. In a wood cutting machine the combination of the frame, the shaft journalled on the frame, the wheel mounted on the shaft and provided with a series of wedge shaped openings, the knives within the said openings and with their edges projecting beyond the periphery of the wheel, the wedge shaped keys within the openings beside the knives, the screws for actuating the wedges to secure the knives, and the throat plates secured to the front portion of the frame, the feed spout above the throat plates, and the wheel cover provided on its front portion with an extension for forming the sides and top of said feed spout, substantially as set forth. 5th. In a machine for cutting wood, the combination of the wheel carrying knives projecting from its periphery, the frame carrying a throat plate and provided above the throat plate with an inclined extension for the bottom of the feed spout, with a wheel cover hinged in the rear end of said frame and provided on its front end with an extension which forms the sides and top of the feed spout, substantially as set forth. 6th. The combination in a wood cutting machine of the frame carrying a throat plate on the inner side of its front end the shaft journalled transversely upon the frame, a cylindrical wheel mounted upon the shaft and provided on its periphery with a series of cutters projecting from the periphery of its rim and each cutter extending as described over a portion of the transverse dimension of the rim, for the purpose set forth, substantially as described.

No. 41,514. Apparatus for Fastening Carpets.
(Appareil pour assujettir les tapis.)

Adelaide Lois Colcleugh, Mount Forest, Ontario, Canada, 11th January, 1893; 6 years.

Claim.—1st. The combination of socket H, flange I, and arm F, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the moulding D, with brad E, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, with the socket H, the flange I, and the arm F, of the combination of the moulding D, and the brad E, substantially as and for the purpose hereinbefore set forth.

No. 41,515. Type-writer. (Clavigraphie.)

The Philadelphia Type-writer Company, Philadelphia, Pennsylvania, assignee of Byron Aden Brooks, Brooklyn, New York, all in the U.S.A., 11th January, 1893; 6 years.

Claim.—1st. In a type-writing machine, the combination of gear arms, a type wheel shaft, a pinion carried by said shaft, said arms being brought independently in gear with said pinion to rotate said type wheel in either direction from a fixed point, and subsequently to return said type wheel to its initial point, substantially as described. 2nd. In a type-writing machine, a pinion on the shaft of a pinion when at rest, combined with a device, substantially as detailed as described, for holding the type wheel in its initial position, substantially as described. 3rd. In a type-writing machine, a type wheel, gear arms, and a series of key levers, each lever provided with two projections, one for actuating said type wheel and the other for arresting its motion, combined with intervening mechanism, substantially as described, for stopping said type wheel by said arresting projections. 4th. In a type-writing machine, key levers provided with two projections, one for actuating the type wheel and the other for arresting it, combined with a pair of gear arms brought in vibrating arm also in gear with the shaft carrying said type wheel, and a lever. 5th. In a type-writing machine, the combination of key levers, a type wheel shaft, a vibrating arm attached by intermediate gearing to said shaft, and a pair of gear arms normally out of gear with a pinion on said shaft, each of said key levers being provided with two projections, one for operating said gear arms and one for arresting the motion of said vibrating arm, substantially as described. 6th. In a type-writing machine, a series of key levers, wheel and one for arresting its motion, combined with gear arms and with a vibrating arm attached by intermediate gearing to a pinion on the shaft of said type wheel, substantially as described. 7th. In a type-writing machine, the combination of a travelling paper carriage, a trip bar attached thereto, and means, substantially as described, for operating said trip bar. 8th. In a type-writing machine, a travelling paper carriage, feed rolls thereon, a platen bar bar, and a trip bar for releasing it, whereby the paper is struck sharply against the printing type, substantially as described. 9th. In a type-writing machine, the combination of a travelling paper carriage, a bar for striking the paper against the face of the printing type, a trip bar attached to the carriage and means, substantially as described, for operating the same. 10th. In

a type-writing machine, a paper carriage, a trip bar and a bar for pressing the paper against the face of the printing type, both attached to the paper carriage, combined with a universal bar extending beneath all the key levers and connecting mechanism, substantially as described. 11th. In a type-writing machine, key levers, a type wheel shaft, a mutilated pinion on said shaft, and a plurality of independent gear arms, to engage said pinions singly, each of said key levers being provided with a projection for operating one of said gear arms to rotate said type wheel shaft, the mutilated portion of said pinion at such time being opposite to and out of engagement with the other gear arm, substantially as described. 12th. In a type-writing machine, the combination of paper feed rolls, a travelling trip bar attached to the paper carriage and a stationary tripping device operating said trip bar, substantially as described. 13th. In a type-writing machine, the combination of a trip pawl and a spacing dog, both connected to and operated by a vibrating bar extending beneath all the key levers, substantially as described. 14th. In a type-writing machine, key levers, a type wheel shaft, a vibrating arm attached to the intermediate gearing to said shaft, and a pair of gear arms normally out of gear with a pinion on said shaft, each of said levers being provided with two projections, one for operating said gear arms and one for arresting the motion of said vibrating arm combined with locking mechanism, substantially as described.

No. 41,516. Beverage. (Brewage.)

The Truro Condensed Milking and Canning Company, assignee of Samuel James Thomas, all of Truro, Nova Scotia, Canada, 11th January, 1893; 6 years.

Claim.—The herein described composition of matter to be used as a beverage, consisting of any of the teas ordinarily used in infusions, cane sugar, milk and water, compounded substantially in the proportions, in a similar manner, with the result, and for the purposes set forth.

No. 41,517. Fire Escape. (Appareil de sauvetage.)

Levi A. Haight Tyndall, and William C. Haynes, Scotland, all in South Dakota, U.S.A., 11th January, 1893; 6 years.

Claim.—In a fire escape, having a descending rope and a belt or strap to support the body, the friction block A, provided with two holes therethrough, said holes being made to diverge from the central portion of the top edge of said block, substantially as described and for the purpose herein set forth.

No. 41,518. Safety Envelope. (Enveloppe de sureté.)

William McDonnell, Lindsay, Ontario, Canada, 11th January 1893; 6 years.

Claim.—1st. A safety envelope having body portions g and g^1 , provided with small cuts or slits f^1 , f^2 , f^3 , for the reception of the projecting tongues c , c^1 , c^2 , as shown and described. 2nd. A safety envelope having body portion g and g^1 , provided with mouth or sealing flap b , side flap c^1 , c^2 , c^3 and c^4 , and d , as described and for the purpose set forth. 3rd. A safety envelope, having body portion g and g^1 , mouth or sealing flap b , and side flaps e^1 , e^2 , e^3 and e^4 , the sealing and side flaps being made to form the projecting tongues c , c^1 , c^2 , as described and for the purpose set forth. 4th. In a safety envelope, formed of the portions g and g^1 , sealing flap b , and side flaps c^1 , c^2 , gummed on the inside surface of the blank, and end flap d , side flaps e^3 and e^4 , and projecting tongues c , c^1 and c^2 , gumme on the opposite or outside surface of the blank, as described and for the purposes set forth. 5th. In a safety envelope, the combination of the body portions g and g^1 , having slits f^1 , f^2 and f^3 , with the c^1 and c^2 , and b , provided with the projecting tongues c , c^1 , c^2 , substantially as described and for the purpose set forth. 6th. In a safety envelope, the combination of the body portions g and g^1 , having slits f^1 , f^2 , f^3 , side flaps e^1 , e^2 , e^3 and e^4 , and tongues c^1 , c^2 , with the end flap d , and the overlapping sealing flap b , having tongues c , thereby forming a double edge envelope, as described. 7th. In a safety envelope, a body portion g^1 , having therein formed the slit f^1 , and flap d , made to adhere to the inside of the body portion, and overlapping, closing or sealing flap b , having tongue c substantially as shown.

No. 41,519. Air Brake and Signal for Railway Trains. (Frein atmosphérique et signal de chemin de fer.)

Harry Rowan Mason, Chicago, Illinois, U. S. A., 11th January 1893; 6 years.

Claim.—1st. The combination, in an engineer's brake valve device of a main air passage and supplemental air passage between the main reservoir and brake pipe, an engineer's brake valve between the main reservoir and brake pipe operative at will to direct the air pressure through either the main passage or supplemental passage, and an auxiliary valve in the supplemental passage operating by abnormal reduction of back pressure in the brake pipe to shut off communication between the latter and the main reservoir through the supplemental passage, the said auxiliary valve being exposed to back pressure from the brake pipe, substantially as and for the purpose set forth. 2nd. The combination, in an engineer's brake valve device, of a main air passage and a supplemental air passage both leading to the brake pipe, a passage A^1 leading from the main reservoir, an engineer's brake valve operative at will to direct the air

pressure from the passage A¹, to either the said main or supplemental passage, and an auxiliary valve in the supplemental passage operating by abnormal reduction of back pressure in the brake pipe to shut off communication between the latter and the main reservoir through the supplemental passage, the said auxiliary valve forming the sole obstruction in the said supplemental passage, whereby it is permanently exposed to back pressure from the brake pipe, substantially as and for the purpose set forth. 3rd. An engineer's brake valve device, having the inlet A², from the main reservoir A, a direct outlet passage, and a supplemental outlet passage, which communicate with the brake pipe C, a regulating valve in the valve device operating to direct the air pressure from the inlet A², to either of said outlet passages, and when registering with the supplemental passage, to close the direct passage, and an auxiliary valve in the supplemental passage, forming the sole obstruction in that passage and operating by abnormal reduction of back pressure in the brake pipe to shut off communication between the latter and the main air reservoir through the supplemental passage, substantially as described. 4th. An engineer's brake valve device, having the inlet A², from the main reservoir, a direct outlet passage, a supplemental outlet passage, both of which lead to the brake pipe C, an exhaust port *g*, a service stop inlet port H¹, and service stop outlet port *g*¹, a regulating valve in the valve device affording at will communication between the inlet A², and either the direct outlet passage or supplemental outlet passage, between the direct outlet passage and port *g*, or between the service stop inlet and outlet ports, and an auxiliary valve in the supplemental outlet passage, forming the sole obstruction in that passage and operating by abnormal reduction of back pressure in the brake pipe to shut off communication between the main reservoir and brake pipe through the supplemental outlet passage, substantially as described. 5th. In an air brake system for railway trains, the combination with the brake pipe of signalling mechanism upon or near the engine cab, connected directly with the brake pipe, and actuated by a reduction of pressure therein, and a conductor's signalling valve upon the car of the train connected with the brake pipe, and provided with air escape regulating mechanism, whereby in each operation of the conductor's signalling valve only a limited reduction of the pressure in the brake pipe can be effected, without reference to the time which the conductor's signalling valve is caused to remain open, substantially as described. 6th. In a train signalling system, the combination with the conduit pipe charged with artificially created fluid pressure, of a conductor's signalling valve upon a car of the train, having an inlet port from the said conduit pipe, and an exhaust port to the outside air, and air escape regulating mechanism between the said ports, whereby in each operation of opening the conductor's signalling valve only a limited reduction of the pressure in the conduit pipe can be effected, without reference to the time which the conductor's signalling valve is caused to remain open, substantially as described. 7th. In an air brake system for railway trains, the combination with the brake pipe of signalling mechanism upon or near the engine cab, connected directly with the brake pipe and actuated by a reduction of pressure therein, and valve mechanism upon a car of the train connected with the brake pipe, and provided with an expansion chamber, whereby it is capable with each operation of effecting a reduction of pressure in the brake pipe, limited by the capacity of the expansion chamber, which is less than the reduction necessary to apply the brakes, substantially as described. 8th. In an air brake system for railway trains, the combination with the main reservoir, engineer's valve and brake pipe, of a supplemental air reservoir near the engineer's valve in the line of the brake pipe, whereby when an exhaust port in the engineer's valve is open, pressure in the brake pipe and supplemental reservoir will be reduced simultaneously to prevent rebound of pressure in the brake pipe, substantially as described. 9th. In an air brake system for railway trains, the combination with the main air reservoir, engineer's brake valve and brake pipe, of a branch passage extending from the brake pipe to the service stop inlet port of the engineer's brake valve, a supplemental air reservoir communicating with the brake pipe through said branch passage to be supplied with pressure from the brake pipe, a valve device interposed in the branch passage between the brake pipe and supplemental reservoir, and through which the pressure passes, and signal mechanism upon the said valve device, actuated automatically by the said valve device when the pressure in the supplemental reservoir exceeds that in the brake pipe, substantially as described. 10th. In an air brake system for railway trains, the combination with the main air reservoir, engineer's brake valve and brake pipe, of a service stop, outlet port, and a service stop inlet port in the engineer's brake valve, a branch passage extending from the brake pipe to the service stop inlet port, through which air is vented from the brake pipe when the service stop inlet and outlet ports are brought into communication, a signal valve in the said branch passage, signal actuating mechanism in the signal valve, a supplemental reservoir in the said branch passage between the service stop inlet port and the signal actuating mechanism, and receiving its pressure from the brake pipe, the signal actuating mechanism being operated by the retrogression of pressure from the said supplemental reservoir to the brake pipe, substantially as described. 11th. In an air brake system for railway trains, the combination, with the main air reservoirs, engineer's brake valve, and brake pipe, of a supplemental air reservoir communicating with the brake pipe, to be supplied with pressure therefrom, a valve device located between the brake pipe and supplemental reservoir, and

through which the pressure passes, a movable diaphragm in the said valve device, only partly closing communication between the brake pipe and supplemental reservoir, and to be moved from its normal position by pressure against it from the supplemental reservoir in excess of the pressure in the brake pipe, and signal mechanism upon the said valve device actuated by movement of the diaphragm, substantially as described. 12th. In an air brake system for railway trains, the combination, with the main air reservoir, engineer's brake valve, and brake pipe, of a supplemental air reservoir communicating with the brake pipe, to be supplied with pressure therefrom, a valve device located between the brake pipe and supplemental reservoir, and through which the pressure passes, a port in the said valve device communicating with a signal, and a movable diaphragm in the said valve device normally closing the said port, and partly closing communication between the brake pipe and supplemental reservoir, and to be moved from its normal position by pressure against it from the supplemental reservoir in excess of the pressure in the brake pipe, whereby the said port is opened and air escapes to the signal to actuate the same, substantially as described. 13th. In an air brake system for railway trains, the combination, with the main air reservoir, engineer's brake valve, and brake pipe, of a supplemental air reservoir communicating with the brake pipe, to be supplied with pressure therefrom, a valve device located between the brake pipe and supplemental reservoir, and through which the pressure passes, a passage in the valve device affording constant communication between the brake pipe and supplemental reservoir, a passage E¹⁰, in the valve device to supplement the other said passage, a movable diaphragm in the valve device normally closing the passage E¹⁰, and to be moved from its normal position by pressure against it from the supplemental reservoir in excess of the pressure in the brake pipe to open the passage E¹⁰, and permit the retrogression of pressure from the supplemental reservoir to the brake pipe through the passage E¹⁰, as well as the other passage, and signal mechanism upon the said valve device actuated by movement of the diaphragm, substantially as described. 14th. In an air brake system for railway trains, the combination, with the main air reservoir and brake pipe, of a direct air passage and a supplemental passage between the main reservoir and brake pipe, an engineer's valve device operative at will to direct the air pressure from the main reservoir through either the direct passage or supplemental passage at will, a valve in the supplemental passage normally held away from its seat and seating in the direction of the brake pipe, and exposed to back pressure therefrom, a normally open feed passage from one side of the said valve to the other, and a passage *p*¹¹ supplementing said feed passage arranged to be opened by movement of the said valve toward its seat, whereby a limited reduction of back pressure in the brake pipe will cause the said valve to be moved in the direction of its seat to open the supplementing passage *p*¹¹, and thereby increase the feed of air from the main reservoir to the brake pipe, and whereby a sudden great reduction of back pressure in the brake pipe will cause the said valve to be forced to its seat to shut off communication between the main reservoir and brake pipe, substantially as described. 15th. In an air brake and signalling mechanism for railway trains, the combination, with the brake pipe, signal and signal actuating mechanism, of a reservoir having constant communication with the brake pipe and a valve located between the brake pipe and reservoir, and arranged to permit a more rapid passage of air from the brake pipe to the reservoir than in the reverse direction, substantially as described. 16th. In an air brake system for railway trains, the combination, with the main air reservoir, engineer's valve and brake pipe, of a supplemental air reservoir communicating with the brake pipe, to be supplied with pressure therefrom, a signal operating diaphragm between the said supplemental reservoir and brake pipe, partly closing communication between the brake pipe and supplemental reservoir, an open passage and valve mechanism between the brake pipe and supplemental reservoir, whereby the retrogression of air from the supplemental reservoir to the brake pipe is rendered slower than the passage of air from the brake pipe to the supplemental reservoir, substantially as described. 17th. In an air brake system for railway trains, the combination, with the main air reservoir, engineer's valve and brake pipe, of a supplemental air reservoir communicating with the brake pipe, to be supplied with the pressure therefrom, a signal operating diaphragm between the supplemental reservoir and brake pipe only partly closing communication between the brake pipe and supplemental reservoir, whereby an open passage is maintained between the two, and to be moved from its normal position by pressure against it, from the supplemental reservoir in excess of the pressure in the brake pipe, and a valve in the said open passage operating, substantially as described. 18th. In an air brake and signalling mechanism for railway trains, the combination, with the brake pipe, of a supplemental reservoir communicating with the brake pipe to be supplied with pressure therefrom, a valve device located between the brake pipe and supplemental reservoir, having an outlet port to the signal, a diaphragm in the valve device normally closing said outlet port and to be moved from its seat by pressure from the supplemental reservoir in excess of the pressure in the brake pipe, a yielding stop in the path of the diaphragm, a passage from the supplemental reservoir to the brake pipe, normally closed and to be opened by movement of the diaphragm to the yielding stop and again closed by further movement of the diaphragm against the resistance of the stop, substantially as described. 19th. In an air brake system for

railway cars, the combination, with the main reservoir, and brake pipe, of an engineer's brake valve, having service stop inlet and outlet ports, and a regulating valve arranged to afford momentary communication between the said ports while the valve is being turned from "release" to "running position," substantially as described.

No. 41,520. Device for Flushing Sewers.

(*Appareil pour nettoyer les égouts.*)

William D. Van Duzee, Minneapolis, Minnesota, U. S. A., 11th January, 1893; 6 years.

Claim.—1st. The combination with a sewer pipe, of a receptacle such as a man hole extension at the head of the same, a gate for opening and closing the sewer pipe, a water pressure motor for operating said gate having a water chest in connection with the head of water, a valve in said water chest, and a float for controlling the valve, substantially as and for the purpose specified. 2nd. The combination with a sewer pipe, of a receptacle such as a manhole extension at the head of the same, a cylinder having its axis in line with the axis of the gate, a piston in the cylinder having its stem connected to the gate, a valve chest for the cylinder in communication with the head of water, a valve in the same, and a float for controlling said valve to shift the pressure to the opposite sides of the piston to open or close the gate. 3rd. The combination with the sewer pipe, of the fixed spider or skeleton yoke spanning the mouth of the same, of the gate movable within said yoke as a guide, substantially as described. 4th. The combination with the sewer pipe, of the fixed spider or skeleton yoke spanning the mouth of the pipe, the gate movable within said yoke, the cylinder having its axis in line with the axis of the gate, the piston having its stem extended through the head of the yoke and connected to said gate, the keeper projecting from the wall of the pipe to the centre of the same, and the rod projecting from the back of the gate and working through said keeper, substantially as described. 5th. The combination with the sewer pipe, of the spider or skeleton yoke for spanning the mouth of the pipe, having an expanded disc like center, of the cylinder projecting from said disc as one of its heads, the valve chest formed integral with the cylinder and the valve therein, substantially as described. 6th. The combination with a water motor provided with a float controlled valve, of the vertical valve stem provided with lugs, and the cup valve movable on said stem between the said lugs, substantially as described.

No. 41,521. Strap or Trunk Hinge. (*Penture de coffre*.)

George Ira Mallory, assignee of George Beacock, both of Brockville, Ontario, Canada, 11th January, 1893; 6 years.

Claim.—1st. A strap or trunk hinge, having one member A, of uniform width, and the other member B, having a strap portion E, coinciding with a cut out portion D, of the member A, both members having coinciding zig zag ends bent tubular and connected by a pintle C, as set forth. 2nd. The art or mode of making blanks for the manufacture of strap or trunk hinges, which consists in die cutting from a bar or strip of steel or metal, one member alternately from a portion of the other member, or one member interveningly by the other member, whereby both members are cut simultaneously by a single stroke of a die cutting one member, and without waste of material, substantially as described.

No. 41,522. Car Coupler. (*Attelage de chars*.)

The Eureka Coupler and Buffer Company, Minneapolis, assignee of George C. McMichael, St. Paul, both in Minnesota, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. In a car coupler, the combination, with the swinging knuckle arranged thereon and having the locking finger, of a lock for said finger, a spring for automatically forcing out said finger when released, and said knuckle having the forward part provided with the tangentially arranged stop edges or surfaces, substantially as described. 2nd. The combination, with the draw bar, of the swinging pivoted knuckle having the locking finger, a lock therefor, a spiral spring arranged on the draw bar and having the forwardly extending free end engaging said locking finger and adapted to force it out when released, substantially as described. 3rd. The combination, with the draw bar, of the swinging coupler part, a lock thereon, and a spring arranged in said bar, said spring being coiled in a part, substantially as described. 4th. The combination, with the draw bar having the coupler head and a swinging knuckle, of a being fastened spring 21, arranged therein, one end of said spring to engage the knuckle and the other end having an unturned arm adapted to engage the finger of said knuckle, a post or lug 24, and a locking device, substantially as and for the purpose specified. 5th. The combination, with the draw bar, of the head and the swinging knuckle thereof, a stop formed upon said knuckle, a locking device to engage the finger of the knuckle, the spiral spring arranged with-coiled in a single plane, the free and unturned end of the spring adapted to engage the rear side of said finger, and the arrangement of the finger and knuckle and spring being such that when said finger is in its open position the spring still presents a curved side thereto, whereby damage to the spring upon the return of the finger is prevented, substantially as and for the purpose specified. 6th. As an

article of manufacture, the spring for a car coupler, having the flattened spiral form and the downwardly and upwardly turned fixed and free ends, respectively, substantially as described. 7th. As an article of manufacture, the car coupler spring having the spiral form described and coiled in a single plane, said spring having the end 22, provided with the hole for a fastened pin, and also provided with the projecting arm on its free end, substantially as described. 8th. The combination, with the draw bar, provided with the barrel or hood, of a cushion spring or springs arranged in said barrel, a chafing plate on the car, and a stud projecting from said chafing plate, substantially as described and for the purpose specified. 9th. The combination, with the car coupler having the barrel, with the cushion spring or springs in said barrel, and a chafing plate arranged on the car, substantially as described. 10th. The combination, with the car, of a draw bar and the swinging knuckle thereof, the gravity locking block, the transverse shaft upon which said block is secured, the downwardly turned crank arm 15 thereof, the operating bar arranged on the car and having the crank arm 18, and the link or links extending between the arms 15 and 18, whereby the draw bar is attached to the car regardless of the tail fastening of said bar, substantially as described. 11th. The combination of the draw bar having the integral spring barrel 27, and its strengthening rib or ribs 28, with a buffer spring or springs provided in said barrel, as and for the purpose specified. 12th. The combination, with the draw bar, of the coupler part thereof, the barrel formed integrally therewith and having the strengthening rib 35, and a buffer spring or springs arranged in said barrel, substantially as described.

No. 41,523. Gunpowder. (*Poudre*.)

Charles Herbert Curtis, London, England, assignee of George G. André, Glenlean, Scotland, 11th January, 1893; 6 years.

Claim.—Smokeless gunpowder consisting of a nitro-cellulose base, composed of soluble and insoluble nitro-cellulose, in combination with nitro-glycerine in or about the proportions named, substantially as set forth.

No. 41,524. Gunpowder. (*Poudre*.)

Charles Herbert Curtis, London, England, assignee of George G. André, Glenlean, Scotland, 11th January, 1893; 6 years.

Claim.—1st. The method of treating an explosive, consisting of trinitro-cellulose and dinitro-cellulose in intimate mixture and in the proportions stated with a solvent which only dissolves or gelatinizes the latter, and which cements together the particles of trinitro-cellulose, and on removal of the solvent renders them hard, substantially as set forth. 2nd. The method of manufacturing an explosive consisting in mixing trinitro-cellulose and dinitro-cellulose in the proportions named, granulating the compound while wet, drying the granules and treating same with a solvent which only dissolves or gelatinizes the dinitro-cellulose, and which cements together the particles of trinitro-cellulose, and on removal of the solvent renders them hard, substantially as set forth. 3rd. The method of manufacturing an explosive, consisting in mixing trinitro-cellulose and dinitro-cellulose in the proportions named, granulating the compound while wet, drying the granules, and treating the same with a solvent having nitro-glycerine dissolved in it, which solvent dissolves also or gelatinizes the dinitro-cellulose, and thereby cements together the particles of trinitro-cellulose, and on removal of the solvent renders them hard, substantially as set forth.

No. 41,525. Method of and Apparatus for Roasting Ores. (*Methode et appareil de grillage des minerais*.)

Leon Bemelmans and George W. Silcox, both of Brussels, Belgium, 11th January, 1893; 6 years.

Claim.—1st. The process of roasting ores containing sulphur and recovering the sulphur, which consists of the following steps: first, subjecting said ores while at a dull red heat to the action of steam; second, burning the sulphuretted hydrogen thus produced with a limited supply of air and with admixture of carbonic acid, whereby carbonic oxide is generated and the liberation of the sulphur assured; third, condensing said sulphur, substantially as described. 2nd. The process of roasting ores containing sulphur and recovering the sulphur, which consists of the following steps: first, subjecting said ores at a dull red heat to the action of steam; second, burning the sulphuretted hydrogen thus produced with a limited supply of air sulphuretted hydrogen thus produced with a limited supply of air under the retort in which the first step takes place and in the presence of carbonic acid; third, condensing the sulphur thus set free by bringing the products of combustion into contact with a vessel containing water; fourth, introducing the steam thus generated into the above mentioned retort, substantially as described. 3rd. The process of roasting ores containing sulphur and recovering the sulphur, which consists of the following steps: first, subjecting said ores at a dull red heat to the action of steam; second, reverting the volatile oxides thus formed into sulphides, in the presence of molten sulphur in which said sulphides are dissolved; third, condensing the excess of steam; fourth, burning the sulphuretted hydrogen remaining with a limited supply of air, and in the presence of carbonic acid; fifth, condensing the sulphur thus liberated, substantially as described. 4th. As a step in the process of recovering sulphur from sulphuretted hydrogen, oxidizing the hydrogen of said sulphuretted hydrogen, and cooling the products of such

oxydization in the presence of carbonic oxide, substantially as described. 5th. In an ore roasting furnace, the combination of the inclosing walls, the combustion chamber, one or more retorts over said combustion chamber, the condenser containing molten sulphur, and the uptake leading from each retort to said condenser, both condenser and uptake being within the walls of the furnace, substantially as described. 6th. In an ore roasting furnace, the combination of one or more retorts, the steam inlets to said retorts, the steam condenser, the combustion chamber under said retorts, the connections from said retorts through the steam condenser to the lower part of the combustion chamber, the carbonic acid generator, and the connection from said carbonic acid generator to the upper part of the combustion chamber, substantially as described. 7th. In an ore roasting furnace, the combination of one or more retorts, the steam inlet to said retorts, the steam condenser, the combustion chamber under said retorts through the steam condenser to the lower part of the combustion chamber, the pipe which may introduce fuel gas into said connections, and valves controlling said connections and said pipe, substantially as described. 8th. In an ore roasting furnace, the combination of one or more retorts, the steam inlet to said retorts, the steam condenser, the combustion chamber under said retorts, the connections from said retorts through the steam condenser to the lower part of the combustion chamber, and the combined sulphur condenser and steam generator, substantially as described. 9th. In an ore roasting furnace, the combination of the retorts, a false floor for said retort permeable to steam, the steam inlet and the combustion chamber from which said retort is heated, substantially as described. 10th. In an ore roasting furnace, the combination of one or more retorts provided with steam inlets, the superheater in the inclosed space surrounding said retorts, the combustion chamber opening into one end of said inclosed space, the condensing chamber opening out of the other end of said retort inclosing space, the by-pass leading direct from the combustion chamber to the condenser and the damper controlling said by-pass, substantially as described.

No. 41,526. Car Coupler. (*Attelage de chars.*)

Gordon W. Brady and John E. Wade, both of Brooklyn, New York, U.S.A., 11th January, 1893; 6 years.

Claim.—1st. In a coupler, a drawhead provided with a link opening the side walls, of which converge at their rear ends, substantially as shown and described. 2nd. A car coupler, the drawhead of which is provided with a link chamber, the side walls of which extend from the outer face of the coupler inward in direction of the centre, the narrowest lateral point in the chamber being of greater width than the width of the link the chamber is adapted to receive, as and for the purpose specified. 3rd. In a car coupler, a drawhead provided with a slot communicating with an interior link chamber, the forward wall of the slot being provided with an angular recess, and a coupling dog pivoted in the slot of the drawhead, and having formed thereon a lug corresponding in shape to the contour of the said recess, which recess is adapted to receive the lug, substantially as shown and described, whereby the dog cannot be forced upward out of coupling position when under tension of a link, even though its pivot pin be removed, as and for the purpose set forth. 4th. In a car coupler, the combination, with a drawhead provided with a link chamber and a longitudinal slot connecting with said chamber, the forward wall of which slot is provided with an angular recess in its lower portion, of a dog pivotally located in the slot of the drawhead, the pivot pin of the dog being located near its upper forward corner, the forward edge of said dog being provided with a lug corresponding in shape to that of the angular recess in the drawhead, which recess the lug enters when it is in its coupling position, substantially as and for the purpose specified. 5th. The combination, with a drawhead provided with a link chamber, a longitudinal slot produced in its upper surface and extending downward into the chamber, said slot having an angular recess produced in the lower portion of its forward wall, the rear wall being stepped, of a dog pivotally located in the slot, the pivot pin of the dog passing through the upper forward portion thereof, said dog having its rear wall stepped to conform to the contour of the rear stepped wall of the recess in which it is pivoted, a finger projecting downward from the forward portion of the dog, adapted to be seated in the angular recess of the drawhead when in its coupling position, as and for the purpose specified. 6th. In a link car coupler, a coupling dog comprising a body, a finger projected downward from the forward end of the body, and a lug formed upon the upper forward portion of the body, the rear end of the body being stepped and the upward forward portion provided with an opening for the reception of a pivot pin, as and for the purpose set forth.

No. 41,527. Salt Feeder for Stock.

(*Appareil d'alimentation du sel pour le bétail.*)

John Hurdle, Polo, Illinois, U.S.A., 11th January, 1893; 6 years.

Claim.—The herein described stock salter, consisting of a box having an opening in its front and having its rear wall inclined and extending beyond and in front of the opening, the vertical series of transverse shafts located in the side wall of the box immediately in rear of the opening, the series of independent roller sections mounted on the shafts and of such combined diameter as to close the opening,

and the tray having its opposite sides inwardly extended to embrace the extended portion of the rear wall and pivoted thereto and supported in a horizontal position, substantially as described.

No. 41,528. Escapement for Watches.

(*Echappement pour montres.*)

Halrey Park, Brantford, Ontario, Canada, 12th January, 1893; 6 years.

Claim.—1st. The combination of the detents C, D, and the detent staff A A, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the detent staff A A, the arm and pin h with the lever fork H, substantially as and for the purposes hereinbefore set forth.

No. 41,529. Method of Making Hydrogen Gas.

(*Méthode de fabrication du gaz hydrogène.*)

William Hawkins and Thomas Hawkins, 38 Queen's Road, Buckland, Portsmouth, Hants, England, 12th January, 1893; 6 years.

Claim.—1st. The manufacture and use of a metallic block produced by heating iron and steel scraps and subjecting the same to pressure so as to form a spongy mass and galvanizing or otherwise coating the block, the said block to be used in the production of evolution of hydrogen gas, substantially as hereinbefore described. 2nd. The manufacture and use of an apparatus to be employed in the production of hydrogen gas consisting of two or more generating chambers in combination with corresponding acid tanks, pipes from the said acid tanks to the generating chambers for the passage of the acidulated water, other pipes for the passage of the gas from the said generating chambers and an open pipe from the generating chambers to the said tanks, the whole being constructed and operating, substantially as described and illustrated. 3rd. The manufacture and use of apparatus suitable for being employed in the production of hydrogen gas, and consisting of two or more generating chambers in combination with an acid tank, a pipe from said acid tank to a pump, a discharge pipe from said pump communicating with each of the generating chambers, a pipe for the passage of gas from the said generating chambers and an open pipe from each chamber to the said tank, the whole being constructed and operating, substantially as described and illustrated.

No. 41,530. Grain Scouring Machine.

(*Machine à nettoyer les grains.*)

Peter Provost, Menominee, Michigan, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. In a grain scouring machine, the combination of a stationary and a revolving scouring disc having their opposing faces covered with wire cloth, a supporting ring, a series of openings located in said ring and at the periphery of said discs, and regulating slides arranged in the said openings, substantially as and for the purpose set forth. 2nd. In a grain scouring machine, the combination of a stationary and a revolving scouring disc, an annular rim supporting the former and having the downwardly extending annular flange bearing against the edge of the latter, said flange being provided with a series of openings, and the regulating slides mounted in the said openings, substantially as and for the purpose set forth. 3rd. In a grain scouring machine, the combination of an annular supporting flange, the conical foraminous hopper supported upon said flange, the supporting rim mounted upon the flange at the upper edge of said hopper and having a depending annular flange at its inner edge, provided with a series of openings, the regulating slides mounted in said openings, the scouring disc mounted upon the annular supporting rim and having a central grain inlet, and a revolving scouring disc arranged below and bearing against the depending annular flange of the supporting rim, substantially as and for the purpose set forth. 4th. The combination of a supporting flange having a bevelled inner edge, the foraminous hopper having at its upper edge, a flange resting upon the bevelled supporting ring or flange, and the superimposed supporting rim provided with annular supporting feet of unequal height and with an annular depending flange having a series of openings provided with regulating slides, substantially as and for the purpose set forth. 5th. In a grain scouring machine, the combination of a casing, a stationary supporting rim, a foraminous hopper mounted upon the latter, and the superimposed supporting rim supporting a stationary scouring disc having a central grain inlet, said supporting rim being provided with a depending flange having a series of openings and regulating slides, and a revolving scouring disc mounted upon a central shaft and provided at its outer edge with a flange bearing against the under side of the depending flange of the supporting rim, substantially as herein set forth. 6th. In a grain scouring machine, the combination of a casing, a series of scouring devices, each comprising a stationary and revolving disc and a foraminous hopper, and a series of spouts and regulating slides for conveying the grain direct to each scouring mechanism independently of the rest and thence to the outlet, or from each scouring mechanism to the scouring mechanism located next below, as may be desired, substantially as and for the purpose herein set forth. 7th. In a grain scouring machine, the combination of the casing, the fan case having a central inlet, the vertical shaft carrying the fan, a series of stationary scouring discs supported upon rims having openings provided

with regulating slides, the stationary foraminous hoppers, the scouring discs and spreaders, arranged upon the revolving shaft, and a series of conducting tubes and regulating slides, all arranged as herein described, and the spouts located exteriorly upon the casing and having their upper ends connected with the inlet of the fan case, and having the triangular abutments and the sub-compartments formed in the outer chamber of each of the said spouts and having the hinged doors, substantially as and for the purpose herein set forth. 8th. In a grain scouring machine, the combination, with a revolving disc carrying a woven wire scouring disc, of a rim provided with annular interior flanges forming a groove into which discharges the said scouring disc, the flanges being formed with slots and openings for the passage of the grain, and a fixed wire disc supported on the top of the said rim, substantially as shown and described. 9th. In a grain scouring machine, the combination with a revolving disc carrying a woven wire scouring disc, of a rim provided with annular interior flanges forming a groove into which discharges the said scouring disc, the flanges being formed with slots and openings for the passage of the grain, a fixed wire disc supported on the top of the said rim, and a spider wheel bolted to the said rim and provided with a webbing for carrying the fixed wire disc, substantially as shown and described. 10th. In a grain scouring machine, the combination with a revolving disc carrying a woven wire scouring disc, of a rim provided with annular interior flanges forming a groove into which discharges the said scouring disc, the flanges being formed with slots and openings for the passage of the grain, a fixed wire disc supported on the top of the said rim, a spider wheel bolted to the said rim and provided with a web for carrying the said fixed wire disc, and downwardly extending projections arranged on the said spider wheel to engage the said rim, substantially as shown and described. 11th. In a grain scouring machine, the combination with a casing provided with two inclined partitions arranged as described, of a suction fan provided with inlet channels into which open the lower ends of the said partitions, a fixed conical sieve arranged in the said casing above the top partition, a ring secured on the top of the said casing and provided with slots and openings for the passage of the grain, a scouring disc supported on top of the said ring, and a revoluble disc made of wire netting and located below the said fixed scouring disc, substantially as shown and described. 12th. In a grain scouring machine, the combination with the rim 16, provided with the annular interior flanges 92 and 93, of which the flange 93 is provided with slots and an opening, of the spider wheel 90, bolted to the rim 16, and provided with a web, lugs 91 projecting from the said spider wheel, and a scouring disc 24, made of woven wire and secured on the under side of the said spider wheel, substantially as shown and described. 13th. In a grain scouring machine, the combination with the rim 16th, provided with the annular interior flanges 92 and 93, of which the flange 93 is provided with slots and an opening, of the spider wheel 90, bolted to the rim 16, and provided with a web, lugs 91 projecting from the said spider wheel, a scouring disc 24 made of woven wire and secured on the under side of the said spider wheel, and a solid disc 29 carrying the woven wire disc 32, located below the disc 24, and the annular flange 95 projecting from the under side of the said disc 29, substantially as shown and described.

No. 41,531. Generator for Hot Air.

(Générateur à air chaud.)

John Stacey, Listowel, Ontario, Canada, 12th January, 1893; 6 years.

Claim.—1st. The combination with an ordinary cooking or box stove, of a heater supported above the fire chamber, and comprised of a casing having a bottom plate, a vertical passage way leading to the central chamber, and a passage way leading from the central chamber to the smoke pipe, and a chamber surrounding the central chamber, extending downwardly to the bottom plate, and having a distributing pipe or pipes, as and for the purpose specified. 2nd. The combination with an ordinary cooking or box stove, of a heater supported above the fire chamber and comprised of the casing A, having a bottom plate B, and the passage way E, leading into the chamber F, passage ways G, leading from the chamber F, to the chamber H, and the opening or pipe L, leading from the bottom of the pipe or pipes J¹, as and for the purpose specified. 3rd. The combination with an ordinary cooking or box stove, of a heater supported above the fire chamber, and comprised of the casing A, having a bottom plate B, and the passage way E, leading into the chamber F, and passage ways G, leading from the chamber F, to the chamber H, and the opening or pipe L, in the bottom plate, chamber J, having a pipe or pipes J¹, and the lip M, extending downwardly from the bottom plate B, to the inner lining N, as and for the purpose specified. 4th. The combination with an ordinary cooking or box stove, of a heater supported above the fire chamber, and comprised of the casing A, having a bottom plate B, and the passage way E, leading into the chamber F, and passage ways G, leading from the chamber F, to the chamber H, the opening or pipe L, in the bottom plate, chamber J, having a pipe or pipes J¹, and fresh air openings or pipes K, and the lip M, extending downwardly from the bottom plate B, to the inner lining N, as and for the purpose specified.

No. 41,532. Process of Untinning the Waste of Tin Plates. (*Procédé pour recouvrer l'étain des rebuts de fer-blanc.*)

Hans Christian Wilhelm Harnisen, Lüneburg, German Empire, 12th January, 1893; 6 years.

Claim.—1st. The process of separating the tin from tinned waste, which consists in placing the tinned waste in a mixture of water, sulphuric acid and nitric acid, and letting the same remain therein until the tin from the tinned waste has been dissolved into stannous sulphate, substantially as described. 2nd. The process of freeing the tin held in solution as stannous sulphate as stated, which consists in mixing stannous sulphate with a heated mixture of nitric acid and water, whereby the dissolved tin precipitated as meta stannic hydrate, substantially as described. 3rd. The process of utilizing tinned waste, which consists in separating the tin from tinned waste by subjecting the latter to the action of a dilute mixture of sulphuric acid and nitric acid, whereby the iron is freed from the tin and the tin is dissolved into stannous sulphate, and bringing the latter into a vessel containing a heated mixture of dilute nitric acid, whereby the dissolved tin is precipitated as meta stannic hydrate, as set forth.

No. 41,533. Snow Plow. (*Charrue à neige.*)

Arthur Gardiner, Terrace, Utah, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. In a snow plow, the combination, with a casing having one flaring outer end, of horizontal partitions located in said flaring end of the casing, and twisted blades journaled in the casing between the partitions, substantially as shown and described. 2nd. In a snow plow, the combination, with a casing having one open, outwardly flaring end, an exit opening at the top, and horizontal partitions located in the flaring end of the casing, of twisted blades pivoted between the partition, and a conveyer wheel held to revolve at the rear of the partitions and twisted blades, said wheel having a series of openings in its front face and a series of hinged paddles, substantially as shown and described. 3rd. In a snow plow, the combination, with a circular casing having one end enlarged and flaring and provided in its top with an opening having a hood, the ends of which are inclined, and a lid hinged in said hood, of horizontal partitions having outer sharpened edges located in the flaring end of the casing, twisted blades pivoted between the partitions, a conveyer wheel held to revolve in the rear of the partitions and twisted blades, and provided with openings in its front face, stop rods arranged concentrically near its periphery, and paddles hinged between the faces of the wheel between its hub and the stop rods, the upper ends of the paddles being adapted to engage with the stop rods, and a driving mechanism for the conveyer wheel and twisted blades, substantially as shown and described.

No. 41,534. Package for Butter.

(*Vaisseau pour le beurre.*)

Charles Lyman Kneeland, Lansing, Michigan, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. In a butter package, the combination with the jar, of the outer casing and supports, consisting of metal bars having their ends secured to the casing and extending down the sides thereof and across its bottom, and supporting said jar in a position detached from the sides and bottom of the casing. 2nd. In a butter package, the combination with the jar, of the outer casing and supports therein, consisting of metal bars having their ends secured to the casing and extending down the sides thereof, and across its bottom, and supporting the jar in a position detached from the casing, and bearing in-bowed springs secured within said casing at its top, and bearing inwardly against said jar. 3rd. In a butter package, the combination with the jar, of the outer casing provided with ears 1 and 2, the lever 3 adapted to engage therewith, said lever being bent centrally, as set forth.

No. 41,535. Lawn Tennis Court Marker.

(*Marqueur de terrain pour jeu de paume.*)

Herman Reichwein, Spring Lake, New Jersey, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. A lawn tennis court marker, comprising a casing open at its base, a dust box reciprocating in the casing and provided with a lid and a foraminated bottom, a supporting wheel journaled at the front of the casing and having a circularly arranged series of pins on one face, a vertical arm pivoted at the rear of said wheel, and having a spring pressed finger at the upper end in the path of said pins, and a link bar connecting the dust box with said arm, substantially as described. 2nd. In a lawn tennis court marker, the combination, with a casing open at its base and provided with a lid and handle bars and a supporting wheel journaled at the front of the casing and having a circularly arranged series of pins on one face, of a dust box reciprocable in the casing and having a foraminated bottom, a vertical arm pivoted at the rear of the supporting wheel, having a spring pressed finger at its upper end in the path of said pins, and a link bar connecting the dust box with the lower end of said arm, substantially as described.

No. 41,536. Harvester for Cotton.*(Moissonneuse pour coton.)*

Gerard Beekman, New York, State of New York, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. In a cotton harvesting machine, having flexible rotary picking stems, the herein described mechanism for actuating said stems, consisting of one or more main rotary supports for moving the pickers orbitally, and suitable means for conveying the said main supports along the rows of cotton plants, and mounted upon each said main support, a series of subordinate supports having independent oscillatory motion, each bearing a group of said picking stems, and means for rotating the stems individually, substantially as hereinbefore set forth, with reference to the annexed drawings. 2nd. As a means of conveying and actuating the rotary supports, and the pickers and picker actuating mechanism thereon, such as described in claim 1, a vehicle or carriage provided with a central traction wheel and framework adapted for clearance between the rows of plants the said picker supports depending from said framework to engage with the plants, substantially as hereinbefore set forth with reference to figures 1 and 2 of the annexed drawings. 3rd. In combination with the pickers and picker supporting and actuating mechanism described in claim 1, suitable means for causing the individual rotation of the picking stems to cease during a part of their orbital rotation rotary stripping brushes for removing the cotton from the picking stems when they cease said individual rotation and reciprocating feeders and a transmitter each provided with upwardly disposed barbs all co-operating to collect and deliver the cotton into a suitable receptacle, substantially as hereinbefore set forth with reference to figures 1 to 6 inclusive in the annexed drawings. 4th. The herein described oscillatory supports 3, for the flexible rotary picking stems provided with elastic tubular arms 5, for projecting said stems elastically outward and means for moving said supports in an orbit retrogressively at substantially the same rate of speed as the motion of the harvester forward over the ground so as to touch and enter the plants the tendency of said supports 3, being to oscillate or move in such a manner that the pickers shall accommodate themselves to the variable structure of the plants and also remain in contact with the cotton a sufficient length of time to extract it when engaged but when disengaged sweep through the plants in search of cotton to seize upon. 5th. The herein described character of main rotary support 2, for orbitally moving the picking mechanism said support being suspended at its upper part from the frame of the machine and at its lower part trifurcated or otherwise subdivided into depending rigid arms diverging as in figure 7, or otherwise separated apart from the axis of rotation as in figure 12, bearing the picking devices and adapted to clear the lower limbs of the plants when such arms or the picking devices thereon are recovered forwardly in their orbital motion, as set forth. 6th. The hereinbefore described arrangement of the subordinate supports bearing the groups of pickers in a plurality of circular series one above another upon the main rotary support as illustrated in figures 12 and 16 of the annexed drawings. 7th. In combination with the main rotary support carrying several circular series of subordinate supports one above another as in figures 12 and 16, the herein described arrangement of said subordinate supports in vertical alignment and the driving shafts 25 extending through those that are vertically aligned adapted to individually rotate all the picking stems thereon. 8th. The combination with the herein described subordinate supports and picking devices thereon of driving shafts extending vertically through them forming means of support and axis of oscillation and means such as springs or equivalent devices for counteracting the tendency of the fractional transmitting mechanism with the supports to oscillate them in one direction. 9th. The herein described construction of the driving shafts 25, in separate sections certain members being mounted in the main support 2 and other members providing a means of mounting the subordinate supports 3, so as to render them removable and free to oscillate, for the purposes set forth. 10th. In a machine for harvesting cotton, the herein described means of mounting and rotating the flexible picking stems, consisting in a suitable support, and bobbins thereon, with means for rotating the same, each bobbin bearing two such picking stems projecting in both directions of its axis, substantially as hereinbefore described with reference to the annexed drawings. 11th. In combination with bobbins 30, and the picking stems connected therewith, the herein described means for rotating the same, consisting in friction rollers 26, bearing on said bobbins, and transmitting motion to the said stems by frictional contact, means being provided to support the said bobbins in a suitable position. 12th. The herein described mechanism for rotating the picking stems, consisting in bobbins attached to the stems, frictional driving rollers, engaging with the bobbins and spindles, for confining the bobbins and maintaining their frictional contact with said driving rollers, together with means for relieving the bobbins from their confinement between said spindles and rollers when the pickers touch the stripping brush, substantially as and for the purposes hereinbefore set forth. 13th. The means hereinbefore variously described for maintaining or relieving the pressure of the spindle 31, upon the bobbins 30, for the purposes set forth. 14th. The means hereinbefore variously described for relieving the pressure of the several vertical series of bobbins 30, in each support 3, in sequential order when they touch the stripping brush, for the purpose set forth. 15th. The combination with the picking stems 1, the bobbins 30, the driving rollers 26, the spindles 31, with

means for relieving said bobbins from confinement, for the purpose set forth, when the driving shafts bearing the said driving rollers are depressed, and means for depressing said driving shafts when the pickers actuated thereby pass the stripping brush, substantially as hereinbefore variously described with reference to figures 12 to 17, inclusive of the annexed drawings. 16th. The herein described specific mechanism for imparting or arresting the rotation of the picking stems, consisting in bobbins 30, of spherical or other suitable form, and means for supporting them in position, and the tapered driving roller 26 mounted upon the longitudinally movable driving shaft, which by its longitudinal motion is adapted to engage or disengage the said rollers with the said bobbins, substantially as and for the purposes set forth in figures 18 and 20 of the annexed drawings.

No. 41,537. Flue Cleaner. (Nettoyeur de tubes.)

Perry A. Burgess and Wm. Kernaghan, both of Steamboat Springs, Colorado, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. A flue cleaner, comprising a blade, a handle hinged to one side of the blade at about its centre, and an adjusting rod having one end hinged to the blade at one side of its centre, and in the same horizontal plane with the handle, and its other end detachably connected to the handle, substantially as described. 2nd. A flue cleaner, comprising a blade, a handle hinged to one side of the blade at about its centre, an adjusting rod having one end hinged to the blade at one side of its centre and in the same horizontal plane with the handle, and its other end detachably secured to the handle, and a guide secured to the handle and through which the adjusting rod works, substantially as described. 3rd. A flue cleaner, comprising a blade, a handle pivotally connected therewith, an adjusting rod also pivotally connected with the blade at one end and detachably connected with the handle at its opposite end, the handle being formed of sections provided at their adjacent ends respectively with eyes and spring prongs to enter therein, and an arm on one section having a keeper to embrace the other section, substantially as set forth. 4th. A flue cleaner, comprising the scraping blade provided with a handle pivotally connected therewith and having an aperture and a guide between the blade and aperture, and a rod pivotally connected with the blade to one side of the handle, extending through the guide and having its inner end bent at an angle to enter the said aperture, substantially as set forth. 5th. The combination with the handle having terminal eyes at the ends of the handle sections, spring prongs to engage the eyes, and an elongated arm terminating in a keeper adapted to embrace the handle, substantially as described.

No. 41,538. Nut Lock. (Arrête-écrou.)

John W. Pugh and Squire B. Hopkins, both of Grand Rapids, Michigan, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. The combination, in a nut lock, of a washer having extended ends provided with locking devices, and a cap having an aperture to fit over the nut, and extended ends provided with locking devices, each end of both the cap and the washer to be bent at right angles, and to interlock with the corresponding ends of the other, substantially as and for the purpose set forth. 2nd. The combination, in a nut lock, of a washer having extended ends and provided with backwardly projecting points, and a cap fitted over the nut, the ends of each bent at right angles and interlocked with the corresponding end of the other, substantially as specified. 3rd. The combination, in a nut lock, of a washer having extended ends, one of which is provided with a slot, the other with any suitable locking device, and a cap having an aperture to fit over the nut, and both ends extended beyond the nut, one end of said cap fitted to enter the slot in the washer, and the other end with a locking device to correspond with the opposite end of the washer, the ends of each bent at right angles and interlocked with the corresponding end of the other, substantially as and for the purpose set forth. 4th. The combination, in a nut lock, of a washer having extended ends, one end provided with a slot, the other with an aperture for a rivet, and points bent back from the surface of the washer, and a cap provided with an aperture to fit over the nut, and projecting ends fitted to interlock with the ends of the washer, and a rivet, substantially as and for the purpose set forth.

No. 41,539. Dynamo Electric Machine.*(Machine dynamo-électrique.)*

Robert Lundell, Brooklyn, and Edward H. Johnson, New York, both in the State of New York, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. An electric motor having a rotary armature and two overlapping field magnet poles, all surrounded by a single field magnet coil, substantially as described. 2nd. An electric motor having the axis of its field magnet and armature coils inclined at an angle to each other, with field magnet poles included in the angular space between said coils, substantially as described. 3rd. Two semi-spherical field magnet cores having internally projecting overlapping pole pieces and a single field magnet coil, substantially as described. 4th. Two semi-spherical field magnet cores having internally projecting overlapping pole pieces integral therewith, substantially as described. 5th. A pair of semi-spherical field magnet cores having internally projecting overlapping pole pieces integral therewith, and

rotary armature, and a single surrounding field magnet coil, substantially as described. 6th. A pair of semi-spherical field magnet cores inclosing a single field magnet coil and a rotary armature, the effective poles of the field magnet lying between the armature and the surrounding field magnet coil, substantially as described. 7th. Two hemispheres made of magnetic material having internal overlapping pole pieces cast integral therewith, and a single field magnet coil which surrounds the pole pieces, and a rotary armature, substantially as described. 8th. Two hemispheres of magnetic material having internal overlapping pole pieces integral therewith, and means for holding the said hemispheres together, substantially as described. 9th. Two hemispheres of magnetic material having each an internal semi-cylindrical pole piece integral therewith, and each overlapping the other, substantially as described. 10th. Two hollow hemispheres of magnetic material having each a semi-cylindrical pole piece integral with its inner face, said pole pieces overlapping each other, a rotary armature journaled in the opposite hemispheres and lying between the pole pieces, in combination with a single field magnet coil, substantially as described. 11th. An electric motor having all of its parts inclosed in a two-part magnetic shell, which sustains the journal bearings of the armature shaft and the commutator brushes, the latter being adjustably secured in insulating sleeves, substantially as described. 12th. An iron-clad electric motor, consisting of two hemispheres of magnetic material having the journal bearings of the armature shaft in the opposite hemispheres, and commutator brushes secured in one of said parts in insulating sleeves, substantially as described.

No. 41,540. Grand Stand. (Grande estrade.)

Pascal P. Cuplin, West Bend, Iowa, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. A revolving grand stand, substantially as shown and described. 2nd. A grand stand comprising a movable base, and the usual superstructure carried on the base, substantially as shown and described. 3rd. A grand stand comprising a reservoir, a revolvable base held to float in the reservoir, and the usual superstructure carried on the base, substantially as shown and described. 4th. A grand stand comprising a revolvable base, a gear mechanism for revolving the base, and the usual superstructure mounted on the base, substantially as shown and described.

No. 41,541. Accident Preventive Guard for Street Cars. (Garde pour chars de rue.)

Peter Meegan, Hamilton, Ontario, Canada, 12th January, 1893; 6 years.

Claim.—1st. The combination of a low table D, projecting in front of a street car and supported by two bent bars J, the upper parts thereof being elongated and T-headed, to slide into the T-headed interior of the longitudinal casings c, suspended from floor of car, substantially as and for the purpose hereinbefore set forth. 2nd. The castings c, provided with inner shanks e, to slide in hangers F, attached to floor of car platform and provided with spiral springs s, to press on said shanks in combination with the pivots H in bearings I, secured to cross piece of car, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the casings c, supported by the hangers F and end bearings I from car floor, the bent T-headed slide bars J, adapted to support the table D, the spiral side springs S¹, attached to said casings and slide bars and capable of being detached, and the elongated slots K, substantially as and for the purpose hereinbefore set forth.

No. 41,542. Liquid Dispensing Apparatus. (Appareil de distribution des liquides.)

William Mills Fowler, New York, State of New York, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. The combination with a stationary measuring receptacle, a supply reservoir in communication therewith and means for cutting off communication between the liquid supply and the interior of the receptacle, of a recording mechanism under the control of the means for cutting off the said supply, substantially as set forth. 2nd. The combination with the stationary measuring receptacle, and a connection for the attachment of a removable supply reservoir thereto in communication with the interior of the measuring receptacle under the force of gravity, of means for locking the removable supply reservoir in position, means for regulating the flow of liquid from the supply reservoir to the measuring receptacle and means for regulating the discharge of the liquid from the measuring receptacle, substantially as set forth. 3rd. The combination with the seat or projection for the reception of the nozzle of the supply reservoir, a measuring receptacle and a casing surrounding the measuring receptacle, of a locking bar or rod adapted at its upper end to engage the bottom of the supply reservoir and extending at its lower end within the casing, and a locking device in engagement with the bar within the casing to prevent its removal therefrom, substantially as set forth. 4th. The combination, with a suitable casing, a measuring receptacle fixed inside through the casing and a connection extending from the mouth of a supply reservoir, of a locking bar or rod provided at its upper end with an overhanging arm adapted to engage the bottom of a supply reservoir and extended within the casing, the said bar being provided with a series of ratchet teeth within the casing, a pawl adapted

to engage said ratchet teeth and prevent the movement of the bar or rod away from the position to hold the reservoir and at the same time permitting its free movement in the opposite direction, and means for swinging the pawl out of engagement with the bar or rod, substantially as set forth. 5th. The combination with a suitable casing, provided with a door and means for locking the door closed, of a measuring receptacle fixed within the casing and provided with a connection extending through the casing to receive the mouth of a supply reservoir, a locking bar or rod adapted at its upper end to engage the bottom of the reservoir, and provided at its lower end within the casing with a series of ratchet teeth and a pawl pivotally secured to the said door and adapted when the door is closed to engage the ratchet teeth and lock the said bar against removal from the casing, substantially as set forth. 6th. The combination with the fixed portions of the casing of a door at one side of the casing provided with a lock for securing it in closed adjustment, a sliding section of the casing located opposite the door, and a sliding bolt extending from the door across within the casing into engagement with the said sliding section, the arrangement of the bolt being such that when the door is locked the said bolt will be secured in engagement with the sliding section, substantially as set forth. 7th. The combination with a suitable casing, a measuring receptacle fixed therein and provided with a connection at its upper portion extending through the casing into position to communicate with the supply reservoir and with a connection at its lower portion extending through the casing to connect with a discharge spout, of a pair of valves, one located in each of said connections, an operating lever, a connection between the operating lever and the two valves for simultaneously operating them, and a recording mechanism under the control of the said lever, to be operated simultaneously with the operating valves, substantially as set forth. 8th. The combination with the casing, the measuring receptacle fixed therein and provided with suitable connections for receiving its supply from the supply reservoir and for discharging its contents, of a pair of rotary valves, one adapted to control the admission of the liquid into the receptacle and the other to control the discharge of the liquid from the receptacle, operating wheels fixed to the valves, and a rocking wheel in engagement with the two valve operating wheels for simultaneously rotating them, substantially as set forth. 9th. The combination with the casing, a measuring receptacle fixed therein and its connection through the casing for establishing communication between it and the supply reservoir and discharge spout, of a pair of rotary valves, one for controlling the entrance of the liquid into the measuring receptacle and the other for controlling the discharge of the liquid from the receptacle, gear wheels on the valve, a gear wheel in position to intermesh with the said last named gear wheel and thereby simultaneously operating the valves, substantially as set forth. 10th. The combination with the casing, the measuring receptacle fixed therein and its connections with the supply and discharge, of the valves for regulating the supply and discharge, an operating lever, a rocking shaft, to which the operating lever is fixed, means for connecting the said rocking shaft with the valves for simultaneously operating them, and a pair of feed rollers, one carried by said rocking shaft and the other by a frictional contact therewith, one of said rollers being provided with series of type and means for supplying the material to be printed between the two rollers, substantially as set forth. 11th. The combination, with the dispensing mechanism, the operating lever and the rock shaft for connecting the operating lever with the dispensing mechanism, of a type carrying roller loosely mounted upon said rock shaft and provided with a series of ratchet teeth, pawls adapted to engage said ratchet teeth, one of the pawls being carried by the rock shaft and serving to advance the roller and the other being pivoted to the casing and serving as a stop and means for supplying the material to be printed to the face of the type roller whereby the operating of the dispensing mechanism feeds and prints the strips, substantially as set forth. 12th. The combination, with the dispensing mechanism and the rock shaft, and operating lever for operating the said mechanism, of a type carrying roller loosely mounted on said rock shaft and provided with a series of ratchet teeth, a pawl carried by said rock shaft in position to engage the ratchet teeth on the roller to advance it, means for preventing the retrograde movement of the roller when the rock shaft is rocked in the opposite direction, and means for presenting the material to be printed to the face of the type roller, substantially as set forth. 13th. The combination, with the dispensing mechanism and the means for operating it, of a double recording mechanism under the control of the means for operating the dispensing mechanism, a receptacle provided with a lock adapted to receive one of said records and another receptacle provided with a lock adapted to receive the other of said records, substantially as set forth. 14th. The combination, with the dispensing mechanism, and the reciprocating operating lever for controlling the said mechanism, of a recording mechanism under the control of said lever during its stroke in one direction and a cutter under the control of said operating lever during its stroke in the opposite direction, substantially as set forth. 15th. The combination, with the casing and the dispensing and recording mechanism located therein, of the operating lever located upon the outside of the casing and the cap inclosing the body of the operating lever and secured to lock together with the lever, substantially as set forth. 16th. The combination, with the measuring receptacle, its supply reservoir and means for con-

trolling the entrance of the liquid from the supply reservoir to the receptacle and its discharge therefrom, of an air tube extending from said receptacle into position at or above the surface of the liquid in the supply reservoir, and a liquid conduit extending from the top of said receptacle downwardly therein and forming an extension of the communication between the interior of the reservoir and the receptacle, substantially as set forth.

No. 41,543. Churn. (Baratte.)

Daniel H. Parker, Pleasantville, Pennsylvania, U.S.A., 12th January, 1893; 6 years.

Claim.—In a churn, the body provided near the top with a projection a^2 , in combination with the lid of the churn located upon said projection, the dasher holder B, provided with the journals b and b^1 , and the wheel b^2 , and located and working in suitable bearings upon said projection and in the sides of the body of the churn, the lower portion of said dasher holder being U-shaped and the upper ends thereof bent outwardly at right angles, providing journals for same, one or both of said ends being continued sufficiently far to be formed into a crank handle b^3 , and the dasher C, having upon its side edges the vertical grooves, whereby the same is rigidly located within the U-shaped dasher holder, substantially as described and for the purpose set forth.

No. 41,544. Gate. (Barrière.)

Alfred Peterson, Orion, Illinois, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. The combination of the two gate sections A and B, hinged together, the section B, being hinged to a post, the bell crank lever attached to the section B, the latch device connected to one arm of said lever and having one end working in a notch in the adjacent uprights of the two sections and extending across the same, the two oppositely extending gate swinging devices connected to the other arm of the lever, and the rod extending between the section A, and a relatively fixed point. 2nd. The combination of the two gate sections A and B, hinged together, the section B, being hinged to the post, the bell crank lever attached to the section B, the stop device to limit its motion, the sliding latch bar capable of a vertical motion, the locking bar to co-operate with said latch bar, the rod connecting the latter and one arm of said bell crank lever, the two crank shafts on opposite sides of the gate, the connections between said shafts and the other arm of said bell crank lever, including upon one side a bell crank lever G, and a vertical rod g^1 , connecting one arm thereof with the bell crank lever on the section B, and the rod extending from the section A, to a relatively fixed point.

No. 41,545. Saddle for Velocipedes. (Selle de vélocipèdes.)

Henry Cutler, Toronto, Ontario, Canada, 12th January, 1893; 6 years.

Claim.—1st. A saddle for velocipedes, comprising a seat, a plate secured to the rear end and under side of the seat, a spring supporting the rear end of the seat, a plate secured to the front end of the seat, said plate having a hooked projection, an L-shaped spring having an eye at the upper end of its short arm into which is hooked the said plate, and a coupling bracket securing together the L-shaped spring, and the spring supporting the rear end of the seat, and means for moving the said L-shaped spring longitudinally, substantially as and for the purpose specified. 2nd. In a saddle for velocipedes, in combination with the seat, of a plate secured to the under and rear side thereof, a spring upholding the rear end of said seat, said spring comprising a stem, the rear end of which is secured to said plate, and which is coiled one and one-half times to form the spring coils, said coils preferably located in front of the middle of the seat, a spring support upholding the front end of the seat, means for coupling together the two springs, means for horizontally adjusting the spring upholding the front end of the seat, means for securing the saddle springs to the saddle pillar, and means for tilting the seat to any desired inclination, substantially as and for the purpose specified. 3rd. In a saddle for velocipedes, the combination of the seat 1, a plate 2 secured to the under side of the seat, a spring 6 supporting the rear end of the seat, said spring comprising a stem 6^a, extending forwardly to the front middle of the seat, and coiled thereat one and one-half times to form the loops and to bring the ends 5^a of the spring to the rear of the coupling bracket 14, a flat L-shaped spring 10, a plate 7 secured to the front end of the seat 1, means for fastening said plate to said flat spring, a coupling bracket 14, securing together the springs 10 and 6, means for longitudinally adjusting the said springs, and means for securing the saddle to the saddle pillar, substantially as and for the purpose specified. 4th. In a saddle for velocipedes, the combination of a seat 1, a plate 2 formed on the under side and at its rear end, a spring 6 comprising a stem 6^a, means for securing the said stem to the said plate, said spring coiled in front of the middle of the seat, the ends 5^a of the said spring extending rearwardly, a flat spring 10, an eye 9 formed in the upper front end 10^b of the spring, a plate 7 secured to the front of the seat, said plate having a hooked projection to hook into the said eye 9, a slot 11 formed in the arm 10^a of the said spring 10, a coupling bracket 14, a set screw passing through said slot into said coupling bracket, and a clasp to secure the saddle springs to the saddle pillar, substantially as and for the purpose specified.

No. 41,546. Plate Frame for Pianos.

(*Planche pour cadres de pianos.*)

John B. Mitchell, Bowmanville, Ontario, Canada, 12th January, 1893; 6 years.

Claim.—An independent plate frame composed of the parts marked G, J, D, H, E and F in combination with the heavily ribbed iron frame represented by the letter A, and the hardwood frame D, sounding board C, lining B and piano case K, forming a sounding chamber at the back of the case, substantially and for the purposes hereinbefore set forth.

No. 41,547. Extension Key for Transposing Music.

(*Clé u rallonge pour transpositeur de musique.*)

John Bracken and John Kennedy, both of Toronto, Ontario, Canada, 12th January, 1893; 6 years.

Claim.—1st. As an improved method of transposing music for piano and organ, a set of extension keys supported on the keys proper and so arranged as to be laterally adjusted to the right and left as and for the purpose specified. 2nd. A set of extension keys B adjustably supported on the keys proper A by the arms C pivoted on the keys A in combination with the cross bar D, arranged as and for the purpose specified. 3rd. A set of extension keys B adjustably supported on the keys proper A by the arms C pivoted at one end on the keys A and having at the other end pins C which extend through slots b in the extension keys B in combination with the cross bar D, arranged as and for the purpose specified. 4th. A set of extension keys B adjustably supported on the keys proper A by the arms C pivoted on the keys A in combination with the cross bar D, pins d projecting into the cross bar D, from the extension keys B, as and for the purpose specified. 5th. A set of extension keys B adjustably supported on the keys proper A by the arms C pivoted on the keys A in combination with the cross bar D, pins d projecting into the cross bar D, from the extension keys B and pin I, arranged as for the purpose specified. 6th. A set of extension keys B adjustably supported on the keys proper A by the arms C pivoted on the keys A in combination with the cross bar D, spindle E, with knob A and slot G, as specified. 7th. A set of extension keys B adjustably supported on the keys proper A by the arms C pivoted on the keys A in combination with the supporting pin j held in position by springs J as specified.

No. 41,548. Marine Engine. (Machine marine.)

The Economy Engine and Machine Company, Gananoque, Ontario, Canada, assignee of Joel Tiffany Case, Bristol, Connecticut, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. The combination of an engine having steam chests upon opposite sides and lateral passages 14, the reversing box C, having central cylindrical chamber, live and exhaust steam chambers 17 and 18, chambers 15, 15, and side passage ways 16, 16, leading therefrom to said lateral passage ways 14, and the reversing valve 25, within said reversing box, substantially as described and for the purpose specified. 2nd. The combination of an engine having steam chambers upon two sides, the reversing box having live and exhaust chambers on diametrically opposite sides, and chambers 15, 15, intermediate said live and exhaust chambers, and the reversing cylindrical valve having solid middle portions and ends, and side passages outside said solid middle portion and between its cylindrical solid ends, substantially as described and for the purpose specified. 3rd. The herein described engine case having steam chests upon opposite sides and provided with a lateral passage connecting the two, and the valve 29, at one end of said passage, substantially as described and for the purpose specified.

No. 41,549. Coin Controlled Machine.

(*Machine actionnée par une pièce de monnaie.*)

William M. Ducker, New York, and Henry D. Dumont, Brooklyn, New York, U.S.A., 12th January, 1893; 6 years.

Claim.—1st. In a coin controlled machine, the combination, with a plunger and an operating slide adapted to be connected by an inserted coin, of a wedging latch pivoted at y , to the operating slide, and means, substantially as described, for automatically forcing said wedging latch laterally between the pivot y , and a laterally projected part of the plunger when the plunger and slide move back together, for the purpose set forth. 2nd. In a coin controlled machine, the combination, with a plunger and an operating slide adapted to be connected therewith by an inserted coin, of automatic means for wedging apart the said plunger and slide longitudinally, so as to release the coin, said means comprising a wedging latch pivotally attached to the operating slide and having an inclined face as described, for moving the free end of the latch into and across the path of the stud n , when the plunger forces back the operating slide. 3rd. In a coin controlled machine, the combination, with a plunger and an operating slide adapted to be connected with the plunger by an inserted coin, of automatic means for wedging apart the plunger and slide longitudinally, so as to release the coin, said means comprising a jointed latch pivoted to the operating slide and having an inclined face at its free end, a stud n , on the plunger, and a stud m fixed in position and situated normally under that portion of the latch which is pivoted to the slide, whereby the plunger forces back

said slide, the free jointed portion l^2 , of the latch will be drawn over and forced upward by the stud m , into the path of the stud n , and the inclined face therein is caused to impinge on the said stud n , as set forth. 4th. In a coin controlled machine, the combination, with a plunger and an operating slide adapted to be connected together by an inserted coin, of a jointed wedging latch comprising the part l^1 , pivotally secured at y , to the operating slide, and the part l^2 , jointed to the part l^1 , and having an inclined face l^3 , the stud m , which supports the part l^1 , of the latch normally, and the laterally projecting stud n , on the plunger, the part l^2 , of the latch being normally below the path of the stud n , all operating substantially as and for the purposes set forth. 5th. In a coin controlled machine, the combination, with a plunger e , having a slender operating extremity, of a larger tubular or hollow operating slide b , axially aligned, or substantially so, with the plunger and adapted to be connected with the plunger by an inserted coin, and means for releasing the coin when the plunger nears the end of its travel, as set forth. 6th. In a coin controlled machine, the combination, with a plunger e , having a slender operating extremity and an operating slide b , having in it a hollow capable of receiving the plunger which is aligned with it, said plunger and slide being adapted for connection by an inserted coin, and a fixed coin support g , formed of material thinner than the coin for which the machine is adapted, substantially as shown and specified. 7th. In a coin controlled machine, the combination, with a frame, of a tubular guide d , fixed therein, a cylindrical plunger e , mounted therein, the retracting spring f , within said guide and embracing the plunger, the tubular cylindrical operating slide aligned with the plunger, and the retracting spring c , embracing said slide, of automatic means for releasing the coin, and a delivery mechanism actuated by the operating slide, substantially as set forth. 8th. In a coin controlled machine, the combination, with the spring retracted operating slide, a coin support below the coin slot, and the plunger guide, of the spring retracted plunger provided near its operative end with a disc o , of rubber or like yielding material, substantially as and for the purposes set forth.

No. 41,550. Lubricating Compound.

(Composition lubrifiante.)

John Brough Wallace, John Wesley Stemm, Arthur W. Ball and Charles A. Allen, all of Galion, Ohio, U. S. A., 13th January, 1893; 6 years.

Claim.—The herein described antifriction lubricating composition consisting of slaked lime, calcined magnesia, pulverized soap stone, (or french chalk), chloride of lime, water and lime, compound in the manner and in about the proportions, substantially as specified.

No. 41,551. Nut Lock. (Arrête-écrou.)

Thomas McDonald, jr., Allegheny City, Pennsylvania, U. S. A., 13th January, 1893; 6 years.

Claim.—1st. In a nut lock, the combination of the spring plate or washer C , the lock plate C^1 , having the cam part b , substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the nut B , and rail A , of the plates C , C^1 , substantially as and for the purpose hereinbefore set forth.

No. 41,552. Driver for Lathes or Planing Machines.

(Chasoir pour tours ou machines à raboter.)

Alexander E. Brown, Cleveland, Ohio, U. S. A., 13th January, 1893; 6 years.

Claim.—1st. In an equalizing driving apparatus, for the purpose specified, the combination of a series of two or more drivers, or driving arms, each in operative contact with a flexible diaphragm, a suitable plate or frame (adapted to be secured to a lathe, boring mill or other machine tool) supporting the same, and a fluid body confined in a common chamber, or a series of intercommunicating chambers by said flexible diaphragms, against the common pressure of which the said drivers or driving arms and diaphragms act and are resisted. 2nd. In an equalizing driving apparatus, for the purpose specified, the combination of a series of two or more drivers, or driving arms each in operative contact with a flexible diaphragm, a series of two or more suitable bodies, or frames (adapted to be secured to the face plate of a lathe, boring mill or other machine tool) each supporting one of said drivers, or driving arms, and its flexible diaphragm, and a fluid body confined in intercommunicating chambers by said flexible diaphragms, against the common pressure of which the said drivers or driving arms and diaphragms act and are resisted.

No. 41,553. Method of Separating Grain or Dust from Air Laden Therewith. (Méthode de séparer le grain ou la poussière de l'air.)

Frederic Eliot, Duckham, Millwalls Docks, London, England, 13th January, 1893; 6 years.

Claim.—The herein described method or process of separating dust or stive, or grain or dust from air by the difference of inertia of the solid or gaseous particles, which method or process consists in causing the laden current of air to be projected in the form of a jet across a short laterally open space or interval, into or towards the inlet mouth of a closed receiver, in the manner and by means of apparatus, substantially such as herein specified.

No. 41,554. Spring Rocking Chair.

(Fauteuil à bascule à ressort.)

Oscar Hale, Ordway, Framingham, Massachusetts, U. S. A., 13th January, 1893; 6 years.

Claim.—The rocking chair as described, consisting of the base A , A , its stay or projection a^{11} , and rockers B , B , combined with the springs d , d^{11} , d^3 , secured in one of the ends to the said base, bent around and supported on the projection a^{11} of said base, and connected in their free ends to the said rockers, substantially as and for the purpose set forth.

No. 41,555. Means for Operating Ammeters and Other Electrical Apparatus. (Moyens d'actionner les ampères mètres et autres appareils électriques.)

Herbert Morris Pilkington and Roger Sherman White, both of Brooklyn, New York, U. S. A., 13th January, 1893; 6 years.

Claim.—1st. The combination, in an electrical apparatus, of the character described, of one or more movable members, an armature or armatures for operating the same, and two or more coils for said armature or armatures in separate line wires, all of said wires being simultaneously in condition for use, the construction and arrangement of the coils and armatures being such that the added effect of all the coils will be sufficient to effect an entire operation of said device, substantially as described. 2nd. The combination, in an electrical apparatus, of a movable part or member, one or more armatures for said member, several coils each normally in position to act thereon, each coil being arranged to perform a certain fraction of the work required to effect an entire operation of said movable member, and the construction and arrangement of the coils and armatures being such that the added effect of all said coils will be sufficient to effect said entire operation, substantially as described. 3rd. The combination, in an electrical apparatus, of a movable member, one or more armatures for said member, several coils each normally in position to act thereon, each coil being arranged to perform a certain fraction of the work required to effect an entire operation of said movable member, and the construction and arrangement of the coils and armatures being such that the added effect of all said coils will be sufficient to effect said entire operation, substantially as described. 4th. The combination, in an ammeter or similarly operated indicator, of a movable member (such as an index hand), one or more armatures connected therewith, and several coils in separate line wires acting in conjunction on said armature or armatures, substantially as described. 5th. The combination, in an ammeter of one or more movable members, one or more armatures connected therewith, and coils in the positive and negative leads of a 3-wire system, both coils acting in conjunction on said armature or armatures, and through the same on said movable member or members, substantially as described. 6th. The combination, in an ammeter or indicator, of several coils in separate lines wires, a single pointer, a single scale and means acted upon in conjunction by said coils for moving said hand or pointer, substantially as described.

No. 41,556. Apparatus for Drying Grain.

(Séchoir à grain.)

Henry T. Hopkins, Picton, Ontario, and Erskine M. Parmelee, Danville, New York, U. S. A., 13th January, 1893; 6 years.

Claim.—1st. In a drier, the combination with a vertically adjustable cylinder to contain the material to be dried, and a hot air chamber below the same, of a vertically adjustable drum or casing around said cylinder, and flanges at the junction of the walls of said drum and said chamber, and lapping the walls of one of said parts so as to permit the adjustment of the drum without uncovering the joint between it and the hot air chamber, substantially as and for the purposes set forth. 2nd. In a drier, the combination of the hot air chamber, the drum mounted above the said chamber, the foraminous cylinder rotatably mounted within the drum, the valves mounted within the upper part of the hot air chamber, each being hinged at its lower edge to a vertically movably plate b , and at its upper edge to the adjusting rod o , extending to the interior of the chamber, substantially as described. 3rd. In a drier, the combination of a drum, the hot air chamber situated beneath the drum, the foraminous cylinder rotatably mounted within the said drum, the elevators arranged within the said cylinder in lines extending around the same, substantially spirally, and the blades similarly arranged between the elevators so that a pair of them will succeed each elevator in its revolution, substantially as described.

No. 41,557. Box for Axle Journals and Wrist Pins.

(Boîte à graisse et bouton d'entraînement.)

William L. Eveland, Port Stanley, and Hugh Stevens, Port Bruce, both in Ontario, Canada, 13th January, 1893; 6 years.

Claim.—1st. The combination of a box having annular flanges at its ends projecting inwardly, and having annular ribs upon the inner side near the ends at a distance from the flange, and formed with bevelled inner sides, a frame formed by two diametrically subdivided rings revolving in the spaces between the flanges and the ribs, and spaced by means of longitudinal rods, and having anti-

friction rollers journaled or pivoted with conical ends in recesses in the faces of the rings, and having the conical portions bearing against the bevelled sides of the ribs, as set forth. 2nd. The combination of a box having inwardly projecting annular flanges at its ends, and having annular ribs upon its inner sides near the ends at a distance from the flanges, and having bevelled inner sides, two diametrically subdivided rings in the space between the flanges, and the ribs having conical bearings in their spacing sides, spacing rods secured to the two rings, rollers having conical ends journaled in the bearings in the faces of the rings, and having a diameter greater than the thickness of the rings, and a shaft axle, wrist pin, &c., journaled within the frame formed by the rings, rods and rollers, as and for the purpose shown and set forth. 3rd. The combination of the lower half box having laterally projecting perforated lips formed with transverse ribs near the ends and having recesses in their faces, an upper box having perforated lips bearing with their ends against the ribs, and having lugs upon their faces fitting in the recesses and bolts passing through the perforated lips, and diametrically subdivided rings having rollers journaled therein, as and for the purpose shown and set forth.

No. 41,558. Machine for Trimming the Uppers of Boots and Shoes. (*Machine pour parachever les empeignes des chaussures.*)

The Boston Footwear Machine Company, Boston, assignee of George Whitefield Davy, Haverhill, both in Massachusetts, U.S.A., 13th January, 1893; 6 years.

Claim.—1st. In a boot or shoe machine, a horn having a reciprocating cutter and an upper surface, said cutter adapted to be reciprocated to and from the plane of the surface, substantially as described, whereby the upper of the shoe may be trimmed off after it has been secured to the sole of the shoe, as set forth. 2nd. In a boot or shoe machine a horn having a reciprocating cutter and an upper surface, said surface having an opening for the cutter which is adapted to reciprocate through the opening in the surface, the outer limit of the outer stroke of the cutter extending beyond the outer plane of the surface, substantially as described, whereby the cutter is adapted to cut and sever the edge of the upper of the shoe from the main part of the upper after the latter has been secured to the sole, as set forth. 3rd. In a boot or shoe machine a reciprocating cutter and its horn provided with a surface on the inside of a shoe and an opening through said surface, said cutter adapted to reciprocate through said opening to a point beyond the plane of the surface in combination with an eccentric actuating device for operating the cutter and connected therewith, substantially as for the purpose specified. 4th. In a boot or shoe machine a horn having an opening and guides and a surface and reciprocating cutter extending beyond the line of the face of said surface, in combination with a tilting pressure guide carrying a friction roller and adapted to guide the shoe from the outside, substantially as described and for the purposes set forth. 5th. In a boot or shoe machine a horn having a slotted surface for the inside of the shoe, and a reciprocating knife adapted to reciprocate through an opening in the surface of the horn, in combination with a pressure guide having a bevelled surface adapted to hold the shoe at an angle to the line of the face of the horn and the side of the knife to secure a bevelled cut edge of the upper of the shoe, substantially as and for the purposes set forth. 6th. The combination, with a horn suitably constructed and adapted to be placed in a boot or shoe and a roller bearing having a bevel circumference or periphery, of a cutter or knife, secured to an arm arranged to be guided by said horn and connected to mechanism for and giving a reciprocating movement to said arm and knife for the purpose specified.

No. 41,559. Centrifugal Separator.

(*Séparateur centrifuge.*)

Clemens Von Bechtolsheim, Berlin, German Empire, 13th January, 1893; 6 years.

Claim.—1st. The combination with the bowl and the cover provided with adjacent recessed portions which form a groove which opens inwardly and between the top and bottom of said groove with shoulders which bear against each other, of a packing ring arranged loosely in said groove and covering the joint between said shoulders, whereby the packing ring is pressed outwardly against said joint by the centrifugal force acting upon the liquid in the bowl and upon the packing ring, substantially as set forth. 2nd. The combination with the bowl, of a feed cup having an imperforate bottom and peripheral wall and an open top, and wings or blades arranged within the feed cup, whereby the liquid is caused to rotate in the feed cup and the solid matter is deposited in the cup while the liquid escapes over the top thereof into the bowl, substantially as set forth. 3rd. The combination with the bowl, of a feed cup having an imperforate bottom and peripheral wall and open top, wings or blades arranged within the feed cup, and division rings arranged in the separating space of the bowl, whereby the solid matter is deposited in the feed cup and separated from the liquid before the latter reaches the division rings, substantially as set forth. 4th. The combination with the bowl, of a feed cup having an imperforate bottom and peripheral wall and open top, a core consisting of a central tube and radial wings extending into the feed cup, and division rings arranged in the separating space of the bowl around said core, substantially as set forth. 5th. The combination, with the

bowl, of superposed division rings arranged in the separating space of the bowl, and a cover provided with a depending flange or curtain which bears upon the uppermost division ring, substantially as set forth.

No. 41,560. Furnace. (*Fournaise.*)

Abсалom Backus, jr., Detroit, Michigan, U. S. A., 13th January, 1893; 6 years.

Claim.—1st. In a furnace, a bridge wall having an arch connected therewith, extending within the fire chamber over the grate, and also provided with a space between the grate and the bridge wall, and upward opening dampers located within the said spaces with their rear edges next to the bridge wall, as and for the purpose specified. 2nd. A furnace provided with an arch connected with the top of the bridge wall, and extending within the fire chamber some distance over the grate, and also provided with an opening beneath the arch between the grate and the bridge wall, upward opening dampers located within the said openings with their rear edges next to the bridge wall, and mechanism for opening or closing the dampers, substantially as specified. 3rd. In a furnace, the combination, with the fire chamber, and an arch located at the rear portion of the fire chamber, and connected with the bridge wall or back of the fire chamber, of a grate, of less length than the fire chamber, located beneath the arch, whereby a space intervenes between the grate and the bridge wall or back of the chamber, upward opening dampers pivotally located in the said space with their rear end resting on a shoulder or stop 17 on the bridge wall, and a shifting mechanism, substantially as described, connected with the dampers, whereby they may be raised or lowered, as and for the purpose specified.

No. 41,561. Fly Trap. (*Gobe-mouche.*)

Charles Shleacow, Lethbridge, District of Alberta, Canada, 13th January, 1893; 6 years.

Claim.—A fly trap, consisting of a vessel, the bottom part of which extends upward into the interior of the vessel, and terminates in an opening B, furnished with a lip or spout C, communicating with the interior of the vessel by an aperture D, near the base of the same, the whole in one piece, substantially as and for the purposes hereinbefore described.

No. 41,562. Brake Beam for Railway Cars. (*Sommier de frein pour chars de chemin de fer.*)

John Green, Renovo, Pennsylvania, U.S.A., 13th January, 1893; 12 years.

Claim.—1st. A brake beam for railway cars, consisting of a bar, a truss rod, a post or strut, and a tie rod between said bar and truss rod. 2nd. A brake beam for railway cars, consisting of a bar, a truss rod, a post or strut, and a tie rod in a plane substantially coincident with the plane of said bar, and connected to said post. 3rd. A brake beam for railway cars, consisting of a bar, a truss rod, a post or strut, supports between the bar and the truss rod, and a tie rod connected to the post and the supports. 4th. A brake beam for railway cars, consisting of a bar, a truss rod, and a post in two separate parts, one of which engages the bar and is provided with a socket, and the other part engaged by the truss rod, and provided with a dowel pin loosely engaging said socket. 5th. A brake beam for railway cars, consisting of a continuous bar of angle iron, a truss rod, and a post or strut in two separate parts, one provided with a dowel pin, and the other with a socket in its upper surface and having an aperture through it conforming to the angle of the bar, and engaging said bar on both sides. 6th. A brake beam having castings or supports permanently secured at its ends, and provided with inclined and grooved upper surfaces, in combination with a truss rod engaging said grooves, and brake shoe holders engaging the bar and said castings. 7th. A brake beam for railway cars, consisting of a bow shaped bar curved in the direction of the strain of the beam, a truss rod, a post or strut, and a tie rod between the bar and the post, and between the bar and the truss rod. 8th. A brake beam for railway cars, consisting of a bow shaped bar of angle iron, curved in the direction of the strain of the beam, a truss rod, a post or strut, angular supports between the bar and the truss rod, and tie rods, one each side of the beam connected to the post and the supports. 9th. A brake beam for railway cars, consisting of a bar, castings or supports permanently secured to the ends of the bar, and each provided with an outwardly inclined upper surface having a longitudinal groove, and a truss rod engaging said groove, in combination with brake shoe holders engaging the bar and said casting. 10th. A brake beam having castings provided with inclined upper surfaces secured in its ends, a truss rod and a post or strut, in combination with tie rods attached to said castings and posts.

No. 41,563. Holder for Advertisements and for Bills of Fare. (*Porte-annonce et menu.*)

John Francis O'Brien, Montreal, Quebec, Canada, 13th January, 1893; 6 years.

Claim.—1st. In combination with a fan, a pocket and a movable card or sheet within said pocket, with an elastic connection to the fan, substantially as described. 2nd. In combination with a fan, a pocket and holder with turned over side edges *d. d.* a card or sheet

contained within said holder, and an elastic band connected to said holder and to the top of the pocket, and a cord attached to the bottom edge of the holder, as and for the purpose specified.

No. 41,564. Washing Machine. (*Machine à blanchir.*)

James A. Weston and Austin M. Weston, both of Frankfort, Kansas, U.S.A., 13th January, 1893; 6 years.

Claim.—In a washing machine of the class described, a corrugated disc having a convex rubbing head, the face of which is provided with independent series of rubbing corrugations, the corrugations of each series being parallel to each other at an angle to those of the remaining series and disposed tangentially to the head, substantially as specified.

No. 41,565. Nut Lock. (*Arrête-écrou.*)

Caleb Swayze, Welland, Ontario, Canada, 13th January, 1893; 6 years.

Claim.—As an improved nut lock, the composition of pulverized charcoal, plaster of paris, lamp black, white lead ground in oil, and white of egg, compounded in the proportions and applied in the manner, substantially as hereinbefore explained.

No. 41,566. Toy. (*Jouet.*)

William Pitt Shattuck, Minneapolis, Minnesota, U. S. A., 13th January, 1893; 6 years.

Claim.—1st. A toy, consisting of a body formed to represent a living creature, a differential pulley arranged therein and cords wound upon said pulley, for the purpose set forth. 2nd. A toy, consisting of a body and parts connected therewith and movable in relation thereto, a differential pulley connected therewith, cords arranged upon said differential pulley and means connected with the axis of said pulley for moving the parts connected to said body for operating said movable parts. 3rd. In a toy, the combination, with a suitable figure provided with movable parts, a differential pulley connected therewith, cords upon said pulley, and means connected with the axis of said pulley for operating said movable parts, substantially as described. 4th. The combination, with a body of movable limbs connected therewith, a differential pulley arranged therein, a cam provided in connection with said pulley, two cords wound on the same, crank rods arranged in connection with the limbs, and a connecting rod extending between the same and engaging said cam whereby as the pulley is exerted on one of said cords said body is caused to advance and said limbs to operate, substantially as described.

No. 41,567. Electrolytic Apparatus. (*Appareil électrolytique.*)

Thomas Craney, Bay City, Michigan, U.S.A., 13th January, 1893; 6 years.

Claim.—The combination, with an electrolytic apparatus comprising a plurality of electrolytic cells connected to permit the solution to pass successively from one to the other for the frictional decomposition of the solution passing from one into the other, of an electric generator, anodes and cathodes connected in multiple arc in the circuit of said generator, and a graduated resistance in the circuit of each electrolytic cell, substantially as described.

No. 41,568. Rack for Axle Washers. (*Porte-rondelle d'essieux.*)

Timothy Gingras, Buffalo, New York, U.S.A., 13th January, 1893; 6 years.

Claim.—1st. A rack for washers and similar articles, consisting of a horizontal base, an upright board or frame secured at its lower end to said base, upright washer holders or supports secured at their lower ends to the horizontal base, and a horizontal stop bar arranged on the upright board and overhanging the free upper ends of the washer holders, whereby the washers are retained upon the holders, substantially as set forth. 2nd. A rack for washers and similar articles, consisting of a horizontal base, an upright board or frame mounted on said base, elastic upright washer holders or supports secured at their lower ends to said base and capable of being sprung outward at their upper ends, and a horizontal stop bar arranged on said upright board and overhanging the upper ends of the elastic washer holders, whereby the washers are confined upon the holders when the latter are in their normal position, substantially as set forth. 3rd. A rack for washers and similar articles, consisting of a horizontal base, an upright board or frame mounted thereon, upright washer holders secured at their lower ends to the base, and each composed of a wire loop arranged parallel with said board, and a horizontal stop bar secured to the upper end of the upright board and overhanging the free upper ends of the wire holders, substantially as set forth.

No. 41,569. Safety Attachment for Car Trucks. (*Appareil de sûreté pour châssis de chars.*)

Louis F. Fisher, Willow Springs, Missouri, U.S.A., 13th January, 1893; 6 years.

Claim.—The combination, with the opposite sills recessed at their front ends, the inverted L-shaped hangers having their upper

horizontal portions inserted into the recesses and bolted to the sills, said hangers having their lower ends provided with diverging bifurcations terminating in perforated ends, of the transverse bar upon the under sides of the bifurcations, the metal plates upturned at their front edges, provided with depending flanges and applied to the under side of the transverse bar, the diagonal braces bolted to the sills, and having their front ends terminating over the inner bifurcations of the hangers, and the series of bolts passed through the lower ends of the braces, the inner bifurcations, the transverse bar and plates, and bolts passed through the outer bifurcations, bar and plates, and through bar and plates between the bifurcations, substantially as specified.

No. 41,570. Machine for Loading and Piling Logs or Similar Articles. (*Machine pour charger et empiler les blocs de sciage et autres objets semblables.*)

George S. Kaime, Necedah, Wisconsin, U.S.A., 13th January, 1893; 6 years.

Claim.—1st. A machine for loading or piling logs, timbers, railway rails and similar material, comprising a suitable supporting frame or platform, skids over-reaching one side of said frame, and supportable therefrom in different positions, and parallel travelling chains or equivalent carrying mechanism, supported and guided by said skids, for receiving and delivering the said logs, rails or other material, sidewise with a continuous action, substantially as described. 2nd. A machine for the purposes named, comprising a suitable supporting frame or platform, sides over-reaching said frame on one side, and supportable therefrom in any desired angular or inclined position, parallel travelling chains or equivalent carrying mechanism, supported and guided by said skids, and a hoisting device applied to said skids for effecting the angular adjustment of the same, substantially as described. 3rd. In a machine of the class described, the combination with a suitable frame or platform, of a turn table on said frame or platform, skids on said turn table, and supportable from the same in any desired angular or inclined position, and arranged to over-reach the said frame at one side, and parallel travelling chains or equivalent carrying mechanism, supported and guided by said skids, substantially as described. 4th. In a machine of the class described, the combination with a supporting frame or platform, of a turn table on said frame, over-reaching skids on said table, adjustable and supportable thereon in any desired angular position, parallel travelling chains or equivalent carrying mechanism, supported and guided by said skids, and a hoisting device applied to said skids for effecting the angular adjustment of the same, substantially as described. 5th. In a machine of the class described, the combination with the supporting frame or platform and the turn table thereon, of the over-reaching skids on said table for supporting and guiding the travelling chains or other carrying mechanism, having their receiving ends secured to said table with freedom for a sliding movement thereon, and a hoisting device applied to the delivery ends of said skids, whereby under the adjustment effected by said hoisting device, the delivery end of the skids will rise substantially in a straight line, thereby maintaining the delivery in the same vertical plane, substantially as described. 6th. The combination with the turn table, of the adjustable skids, having their receiving ends connected to the turn table with freedom for a sliding motion, of the hoisting device on the turn table, applied to the delivery ends of the skids, and the pivoted arm rising from the delivery end of the turn table, and connected to the said skids, intermediate the extremities of the same, substantially as described. 7th. The combination with the adjustable skids, with travelling chains on the turn table, of the hoisting device on the turn table, applied to the delivery end of the said skids, and consisting of a windlass operated by a worm and worm gear, for holding the skids in whatever position the same may be set, substantially as described. 8th. In a machine of the class described, the combination with the skids and travelling chains, of the revolving discharge arms at the ends of the skids, substantially as and for the purpose set forth. 9th. In a machine of the class described, the travelling chains, provided with pivoted carrying fingers, substantially as and for the purpose set forth. 10th. The combination with the travelling chains, of the carrying fingers pivoted thereto and spaced apart from each other, and provided with rearwardly extended tail pieces or rests for distributing the strain from the hooks under the weight of the logs, substantially as described. 11th. The combination with the skids, of the travelling chains, and the sprockets for driving the same, of the pivoted carrying fingers spaced apart from each other on the said chains, at distances equal to the circumferences of the said sprockets, and revolving arms on the said sprocket shafts at the ends of the skids, for assisting in receiving and discharging the logs, substantially as described. 12th. In a machine of the class described, the combination with the adjustable skids and their travelling chains on the turn table, of sprocket wheels on the upper end member of the chain driving shafts, and detachable pivoted skids, with travelling chains, applicable to said upper end shaft and sprocket wheels, to effect an extension at the delivery end of the turn table skids, substantially as described. 13th. The combination with the pair of reversible driving shafts on the platform, running at equal speeds, spaced apart from each other, at equal distances on opposite sides of a common centre, of the pair of shafts on the turn table spaced apart at equal distances on opposite sides of a common centre, drivable from either end, by the said reversible

driving shafts on the platform, whereby the speeds of the turn table shafts may remain the same, regardless of the particular member of the driving shafts, by which the same may be driven, substantially as described. 14th. The combination with the pair of reversible driving shafts on the platform, running at equal speeds, of the pair of turn table shafts, the members of both sets of said shafts being spaced apart equal distances on opposite sides of a common central line, and driving devices carried by the platform shaft and applicable to either end of said turn table shafts, whereby the turn table shafts are interchangeably connectible to either of said platform shafts, substantially as described. 15th. The combination with the reversible driving shafts on the platform, having gears adjacent to the turn table offset, or staggered in respect to each other, of the shafts on the turn table having gears at both extremities offset or staggered with respect to each other, and interchangeably engageable with the offset gears on said driving shafts, substantially as and for the purpose set forth. 16th. The machine for the purpose named, comprising a supporting car or other portable frame, the turn table on the car, the adjustable skids, with pivoted extensions, on the turn table, the travelling chains with carrying fingers, guided and supported by said skids, the hoisting device on the turn table applied to the delivery ends of the skids, the pair of shafts on the turn table, having one, connections to said travelling chains, and the other, connections to said hoisting device, and the pair of reversible driving shafts on said car or portable frame, running at equal speeds, and applicable to said turn table shafts at either end, substantially as and for the purpose set forth.

No. 41,571. Steam Engine. (Machine à vapeur.)

John Virtue Rice, jun., Chester, Pennsylvania, U.S.A., 13th January, 1893; 6 years.

Claim.—1st. In an engine having a spirally grooved shaft, which is rotated by means of an annular surrounding reciprocating piston intermittently clutched to or connected therewith, the piston having two hollow heads united by a tubular connection, substantially as described. 2nd. In an engine, the linear reciprocating piston having two hollow heads joined by a tubular connection, in combination with the cylinder, the spirally grooved rotary shaft passing axially through the piston and its tube, and means for intermittently making connection between the piston and the shaft, whereby the latter is rotated by the reciprocations of the former, substantially as described. 3rd. In an engine, the combination of a cylinder, a double-headed piston whose heads are hollow and have a tubular connection, a spirally grooved shaft passing through the piston, and a disc or block, and a clutch ring in each piston head. 4th. In an engine, the combination of a cylinder, a piston moving therein having hollow heads connected by a tubular connection, a grooved shaft passing through the piston, a circular block or disc having an internal rib or feather, whereby it is permanently connected to the grooved shaft, and a split ring pivoted to an arm connecting with the piston head, whereby the circular block is clutched and intermittently prevented from rotating and caused to impart a rotation to the grooved shafts. 5th. In an engine, the combination of a cylinder, a double-headed piston whose heads are hollow and have a tubular connection, a shaft provided with oppositely running spiral grooves and located through the piston, internally ribbed blocks or discs located within the piston heads and permanently connected to the grooved shafts, and a pair of split rings in each piston head encircling the aforesaid blocks or discs, said rings being pivoted to movable arms, and being adapted to clutch the discs for the purpose of preventing them from rotating and causing a rotation to be imparted to the grooved shaft, substantially as described. 6th. The combination of a cylinder, a double-headed piston whose heads are hollow and have a central tubular connection and also two other tubular connections on each side of the central one, a grooved shaft running through the central tubular connection, rods running through the side tubular connections, a block or disc within each head engaging the grooved shaft, clutch rings surrounding said blocks, and arms to which said clutch rings are pivoted, said arm being engaged by the aforesaid rods, substantially as described. 7th. The combination of a cylinder, a double-headed piston whose heads are hollow, a grooved shaft having grooves running in opposite spirals, a circular block or disc H, within each head engaging the grooved shaft, and a clutch ring or rings L, divided at a certain point in their circumference, and adapted to clutch said block or disc H, substantially as described. 8th. The combination of a steam cylinder having open ends and a central transverse partition, a piston having hollow heads which are connected by means of a central tubular connection, said heads being situated on opposite sides of the central partition and the said tubular connections working through an opening in the central partition, a spirally grooved shaft running through the tubular connection, and means for connecting the aforesaid piston heads to this spiral shaft, consisting of clutch rings encircling circular blocks or discs, which are permanently connected to the grooved shaft, and intermittently connected in this way to the piston head, together with a valve operated in any suitable manner to supply the steam, substantially as described. 9th. The combination of a steam cylinder having open ends and a central transverse partition, a piston having hollow heads, which are connected by means of a central tubular connection and two side tubular connections, said heads being situated on opposite sides of the central partition and the side tubular connections, and

a joining web on each side of the central connection between it and the side ones, all working through an opening in the central partition, together with a spirally grooved shaft running through the central tubular connection, the reversing rod running through the side tubular connections, and means for connecting the aforesaid piston heads to the central spiral shaft for the purpose of revolving it, substantially as described. 10th. The combination of a steam cylinder, a piston having two hollow heads connected by a central tubular connection, and two side tubular connections, a grooved spiral shaft running through the central connection, reversing rods running through the side tubular connections and provided within each head with geared sleeves, the circular discs or blocks internally ribbed to engage the spiral shaft, a divided clutch ring in each head encircling said disc, and a movable arm pivoted to said clutch ring and engaged by the aforesaid geared sleeve on the reversing rods, substantially as described. 11th. The combination of a steam cylinder with the piston having two hollow heads connected by a tubular connection, circular blocks or discs located within said heads and having internal ribs which connect them with the spiral shaft which runs through the piston, a pair of clutch rings within each head encircling the said blocks or discs, and an arm pivoted to each of the said clutch rings and engaged at its other end by a reversing rod, substantially as described. 12th. The combination of a steam cylinder, a piston having hollow heads connected by a central tubular connection, the spirally grooved shaft E, running through said piston, the internally ribbed discs H situated with the hollow heads and permanently connected to the shaft E, and the clutch rings L, within the hollow heads and encircling the discs H, together with arms K, pivoted to said clutch rings and operating as specified to cause said rings to clutch or to release their hold, together with the reversing rods which operate to govern the position of the levers K, substantially as described. 13th. The combination of a cylinder, a piston moving therein having hollow heads, connected by a tubular connection, the internally ribbed discs H, the grooved shaft E, to which said discs are permanently connected, the ring L, encircling the discs within the hollow heads, said rings having at one end the extension L¹ and at the other the shoulder L² a lever arm K pivoted to the extension L¹ of the ring L, and having a depending projection K¹, operating against the shoulder L², said lever K being slotted, so that a rack connection may be provided with a reversing rod which passes through it, substantially as described. 14th. In an engine, the combination of a cylinder, a piston working therein, a spirally grooved rotary shaft passing axially through the piston, a disc, block, or similar device, and a clutch ring for intermittently making connection between the piston and the shaft, substantially as described. 15th. In an engine, the combination of a cylinder, a piston moving therein having hollow heads connected by a tubular connection, a grooved shaft passing through the piston, a block or disc on the shaft, and a split ring for clutching the said block, so as to cause the reciprocations of the piston and impart a rotation to the shaft. 16th. The combination of a cylinder, a piston therein, a grooved rotary shaft passing axially through the piston, a clutch ring and an intermediate device within the ring engaging the grooved shaft, the intermittent clutching of which ring upon this device makes connection between the piston and shaft, substantially as described. 17th. The combination of a cylinder, a piston therein, a spirally grooved rotary shaft passing through the piston a cylindrical disc or nut encircling the shaft and having an internal spiral rib which is in engagement with the spiral grooves, and an encircling split clutch ring, for making connection between the piston and said disc, substantially as described. 18th. In an engine having a spirally grooved shaft which is rotated by means of an annular surrounding reciprocating piston intermittently clutched to or connected therewith, and a circular split clutch ring for accomplishing this intermittent clutch, substantially as described.

No. 41,572. Car Coupler. (Attelage de chars.)

William W. Smith, Traverse, Michigan, U.S.A., 13th January, 1893; 6 years.

Claim.—In a car coupler, the combination with the draw bar 10, having a mouth 12 in its lower front end, and a narrow opening 20 in its top communicating with the mouth 12, the crank shaft 16, the sleeve fixedly held on the said shaft, the link 13 secured at its ends to the sleeves 15, and the pin 18 projected from such sleeve in an opposite direction, its free end adapted to swing in the opening 20, of a crank shaft 20^a journalled on the car body, having an arm 23, the clip 25 secured to the crank arm of the shaft 16, and the rod 24 pivotally connected at its opposite ends to the crank arm 23, and the clip 25, as and for the purposes described.

No. 41,573. Automatic Determining Device for Phonographs. (Appareil déterminatif automatique pour phonographes.)

Thomas Alva Edison, Llewellyn Park, New Jersey, U.S.A., 13th January, 1893; 6 years.

Claim.—1st. In a phonograph, the combination, with the spectacle frame of the determining point pivoted directly upon such frame, substantially as set forth. 2nd. In a phonograph, the combination, with the spectacle frame of a pivoted determining point pivoted directly upon said frame, and having an adjustable head, substantially as set forth. 3rd. In a phonograph, the combination

with the spectacle frame of a pivoted determining point, and an adjustable limiting plate for limiting the swinging movement of the point, substantially as set forth. 4th. In a phonograph, the combination, with the spectacle frame, presser foot bar and guide rest, of a lock, the movable element of which is carried by the presser foot bar, operated independently of and without exerting any strain upon this spectacle frame for fixing the position of said spectacle frame on the presser foot bar, substantially as set forth. 5th. In a phonograph, the combination, with the spectacle frame, presser foot bar and guide rest, of a cam lock, the movable element of which is carried by the presser foot bar, operated independently of and without exerting any strain upon the spectacle frame for fixing the position of said spectacle frame on the presser foot bar, substantially as set forth. 6th. In a phonograph, the combination, with the spectacle frame, of a cam shaped presser foot bar passing through a cam shaped opening in the finger of the spectacle frame, and locked therein by partial rotation, substantially as set forth. 7th. In a phonograph, the combination, with the spectacle frame, presser foot bar and guide rest, of a determining point pivoted directly upon the spectacle frame, and a lock, the movable element of which is carried by the presser foot, operated independently of and without exerting any strain upon the spectacle frame for fixing the position of said spectacle frame on the presser foot bar with relation to the position of the determining point, substantially as set forth.

No. 41,574. Picker for Cotton Harvesters.
(*Cueilleur pour moissonneuses de coton.*)

Gerard Beekman, New York, State of New York, U.S.A., 13th January, 1893; 6 years.

Claim.—1st. In a cotton picking device, the combination of a main rotary stem or shaft, and a plurality of flexibly attached subordinate stems branched therefrom having independent extremities. 2nd. In a picker for cotton harvesters, the combination of a main rotary stem, a plurality of flexibly attached subdivisional stems having free extremities, each revolving about the axis of said main stem, and adapted to diverge centrifugally when the latter is rotated, and to rope upon themselves when arrested in their orbit of centrifugal rotation, for the purpose described. 3rd. In a picker for cotton harvesters, a main rotary stem, a non-rotary sheath containing the same, a flexible extension of the main stem projecting beyond the sheath, and at the extremity of said flexible extension, a series of subordinate stems adapted to be separated centrifugally by the rotation of said main stem. 4th. In a picker for cotton harvesters, a main flexible rotary stem, a flexible sheath for containing the same, and at the extremity of said stem multiple stem picker, substantially as described. 5th. The combination, in a picking device for cotton harvesters, with a suitable support, of an aggrupped series of rotary picking stems projecting horizontally therefrom, the extremities of alternate members of said stems occupying a comparatively advanced position, and those of the remaining alternate members a comparatively retired position of projection beyond the said support, for the purpose described.

No. 41,575. Spring Motor. (*Moteur à ressort.*)

Dwight William Dart, Deseronto, Ontario, Canada, 14th January, 1893; 6 years.

Claim.—The combination, with the driving gear and the winding arbour, of a helical spring connected by one end to said arbour, and brackets on the spokes of the gear at graduated distances from the rim, to one of which brackets the other end of the spring is attached, upon two of which it bears, and which passes through a third bracket.

No. 41,576. Rotary Engine. (*Machine rotatoire.*)

Edward Towlson, Saint Michaels at Caslany, Norwich, England, 14th January, 1893; 6 years.

Claim.—1st. In a rotary engine, the combination of the cylinder 5, 5^a, the hollow cylindrical bosses 4 fixed therein, a driving shaft 1, 1^a, having both sides of approximately the same curvature, carried by said collar 2 and arranged to form with said bosses, spaces 6 for motive fluid, packing plates 7 carried by said piston, and arranged to divide said steam spaces 6 longitudinally, an abutment adapted to be pressed by steam pressure alternately against said piston and bosses, a fluid admission valve, and mechanism for operating the same, substantially as described for the purpose specified. 2nd. In a rotary engine, the combination with the cylinder constructed with driving shaft 1, 1^a, and with supply and exhaust passages, ends of said bosses, a piston 1, 1^a, carried by said collar, the longitudinally adjustable packing rings or sleeves 9 surrounding said bosses, having their inner ends arranged to bear tightly against opposite sides of said collar, and of such a diameter as to leave steam spaces 6 between them and the adjacent parts of said piston, packing plates 7 carried by said piston and arranged to divide each of said steam spaces 6 longitudinally, an abutment arranged to work alternately against said piston and said packing rings or sleeves, a valve for controlling the admission of motive fluid to said cylinder, and means for operating said valve, substantially as described. 3rd. In a rotary engine, the combination of a cylinder, a driving shaft and a piston carried thereby, an abutment arranged to work in close

contact with said piston, a cut off valve at each side of said abutment, a reversing valve concentric with each cut off valve, and means for separately operating said cut off and reversing valves, substantially as herein described for the purpose specified. 4th. In a rotary engine, the combination of a cylinder, a driving shaft and a piston carried thereby, an abutment arranged to work in close contact with said piston, a cut off valve at each side of said abutment, a reversing valve concentric with each cut off valve, an exhaust valve at each side of said cylinder, means for operating said reversing and exhaust valves simultaneously, and means for operating said cut off valves, substantially as described for the purpose specified. 5th. In a rotary engine, the combination of a cylinder, hollow cylindrical bosses fixed therein, a driving shaft having a collar extending between the inner ends of said bosses, a piston arranged to revolve around said bosses and carried by said collar, an abutment, a cut off valve at each side of said abutment, a reversing valve concentric with each cut off valve and means for operating said valves substantially as described for the purpose specified. 6th. In a rotary engine, the combination of a cylinder, a driving shaft, a rotary piston carried by said shaft, an abutment, a cut off valve at each side of said abutment, a reversing valve concentric with each cut off valve, an exhaust valve at each side of said cylinder, a pivoted plate provided with a handle and connected to said exhaust and reversing valves for operating the same simultaneously, and a pair of eccentrics on the driving shaft for operating the cut off valves, substantially as described. 7th. In a rotary engine, the combination of a cylinder, a driving shaft, a rotary piston carried by said shaft, an abutment arranged to slide in a steam chamber and to act against said piston, one or more passages for admitting steam to said chamber to act against the outer end of said abutment, a reversing and a cut off valve at each side of said abutment, an exhaust valve on each side of said cylinder, a wrist plate connected to said exhaust and reversing valves for operating the same simultaneously, and a pair of eccentrics on the driving shaft for operating the cut off valves, substantially as described for the purpose specified. 8th. In a rotary engine, the combination of a cylinder, a driving shaft, a rotary piston carried by said shaft, an abutment arranged to slide in a steam chamber, and to act against said piston, a reversing and a cut off valve at each side of said abutment, an exhaust valve on each side of said cylinder, a wrist plate connected to said exhaust and reversing valve for operating the same simultaneously, a pair of eccentrics on the driving shaft for operating the cut off valves, steam passages for connecting each of the cut off valve chambers with the steam chamber in which said abutment slides, cocks for controlling said steam passages, and connections between said cocks, and the mechanism for operating said reversing valves, substantially as described and shown for the purpose specified. 9th. In a rotary engine, the combination of a cylinder, a driving shaft, a piston carried by said shaft, a sliding abutment, a reversing and a cut off valve on each side of said abutment, exhaust valves on each side of said cylinder, exhaust passages such as 33 concentric with said cylinder having a common outlet and controlled by said exhaust valves, and means for operating said reversing cut off and exhaust valves, substantially as described for the purpose specified. 10th. In a rotary engine applicable also as a pump, the combination of a cylinder, bosses fixed centrally therein, a driving shaft provided with a collar extending between said bosses, a piston arranged to partly surround said bosses and carried by said collar, a hollow, oscillating abutment formed with an exhaust opening, cut off valves located in chambers, one at each side of said abutment, a hand operated valve serving as a starting, stopping and reversing valve, and fluid supply passages for connecting the steam chamber, containing said starting, stopping and reversing valve, with each of the chambers containing said cut off valves, substantially as described. 11th. In a rotary engine, applicable also as a pump, the combination of a cylinder, bosses fixed centrally therein, a driving shaft provided with a collar extending between said bosses, a piston arranged to partly surround said bosses and carried by said collar, a hollow oscillating cylindrical abutment formed with an exhaust opening and with lips or projections, supply passages having their inner ends each formed to receive one of said lips or projections, oscillating cut off valves arranged, one at each side of said abutment and adopted to control one of said supply passages, eccentrics on said driving shaft for actuating said cut off valves, a hand operated oscillating valve, and steam supply passages formed in the wall of said cylinder and connecting the chamber containing the hand operated valve with each of the chambers containing said cut off valves, substantially as described. 12th. In a rotary motor, the combination of a cylinder, bosses fixed centrally therein, a piston 1, 1^a, carried by a collar 2, arranged between said bosses and fixed to a driving shaft extending through said bosses, a hollow cylindrical abutment 12, mounted to rock in a bearing 12^b, provided with lips or projections 12^c, and having an exhaust opening 47, inlet passages 46, oscillating cut off valves 20, each mounted within a chamber 23, and arranged one at each side of said abutment, eccentrics fixed to said driving shaft for operating said cut off valves, an oscillating valve 48, mounted in a chamber 49, passages 50, connecting said chamber 49, with each of said chambers 23, and an exhaust passage in communication with the interior of said abutment, substantially as herein described. 13th. In a rotary pump, the combination of a cylinder having suction and delivery passages, provided with suction and delivery valves, hollow bosses fixed centrally within said cylinder, a driving

shaft provided with a collar, a piston carried by a collar arranged between said bosses and fixed to a driving shaft, a rocking abutment having its upper or outer surface exposed to the pressure in the delivery passage, of greater area than its lower or inner surface, substantially as described for the purpose specified.

No. 41,577. Machine for Laying Railway Tracks.

(Appareil à poser les voies de fer.)

George Roberts, Tacoma, Washington, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. The combination, with a train of cars, of the sectional tramways supported from and extending along both sides of said cars, said sections having rollers mounted therein, and their sides next to the cars flexibly or pivotally connected together, and means for operating said rollers, substantially as described. 2nd. The combination, with a train of cars, of the sectional tramways having their ends on one side flexibly or pivotally connected together, two series of rollers mounted in said tramways, one series of which has bevelled pinions on their ends and means for rotating said pinions, substantially as described. 3rd. The combination, with a train of cars, of the sectional tramways supported from and arranged along the sides of said train of cars, the two series of rollers mounted in said tramways, one of said series having bevelled pinions on their ends, the connecting rods coupled together by a universal joint, and the bevelled pinions mounted thereon, adapted to rotate the pinions on the series of rollers, substantially as described. 4th. The combination, with a train of cars, of the sectional tramways adjustably and removably supported from the sides of said cars and arranged with the upper surfaces of said tramways below the upper surfaces of the beds of said cars, the two series of rollers mounted in said tramways, one of said series having bevelled pinions secured at one end, the connecting rods flexibly coupled together, the bevel pinions on said connecting rods, adapted to mesh with the pinions on the rollers, and the tumbling rod transmitting motion to said connecting rod, substantially as described. 5th. The hereinbefore described sectional tramway having its sections flexibly connected at one side of the ends of said sections, the two series of rollers mounted in bearings in said tramways, one of said series having the bevelled pinions at one end and the other series arranged below the surface or level of the rollers having the pinions, the roller J, having the bevelled pinions at both ends, and the connecting rods mounted in said tramways at opposite sides, and the bevelled pinions mounted on said rods and adapted to mesh with the bevelled pinions on said rollers, substantially as described. 6th. The hereinbefore described sectional tramway having its sections flexibly connected at one side of the ends of said sections, the two series of rollers mounted in said tramways, one of said series having bevelled pinions at one end, the roller J, having bevelled pinions at each end, the inclining plates arranged between said rollers and below their upper surfaces, the rods 56, adjustably arranged in said tramways, and the block arranged at the end of the forward end of the tramway, substantially as described. 7th. The combination, in a track laying machine, of the sectional tramways formed of the longitudinal beams, the tapering blocks separating said beams, the series of rollers having their bearing in said blocks, the series of rollers interposed between the rollers of the series last named and having pinions at one end, the hinge joints connecting the end of one side of said sections and provided with the upright arms adapted to support the upper beams, the bolts passing through the upper beams and secured to said arms, the connecting rods having the jaws, the pins for securing said jaws loosely together, and the bevelled pinions mounted on said rods and adapted to mesh with the pinions on the rollers, substantially as described. 8th. The hereinbefore described roller for tramways, consisting of the square shaft or axle having a rounded portion near each end, the wrought iron tube, the bevel pinions having a tubular projection on one side adapted to enter the other end of said tube, and the bolts passing through said pinion and flange and tube, whereby the flange and pinion are secured to the ends of the tube, substantially as described. 9th. The combination, in a track laying machine, with a train of cars provided with pockets on their sides, of the tram support consisting of the upright having a head at one end and the other end perforated, the bracket embracing said upright, the shaft or axle having a square opening in one end and rounded portions near both ends, the adjustable tubular roller having the flanges at each end, the set screw for securing the same to the axle, and a pin adapted to enter the perforations in the uprights, substantially as described. 10th. The combination, in a track laying machine, of the engine shaft, the driving wheels mounted on said shaft, the parallel shafts arranged at either side of the machine, the belt wheels mounted on said shafts, the small gear wheels mounted on the ends of said shafts, the belts loosely embracing said drive wheels and belt wheels, the large gear wheels in mesh with said small gear wheels and mounted on shafts having their bearings at each side of the machine, the tumbling rods jointed to said shafts, and the tightener pulleys arranged below and adapted to be thrown into contact with said belts, substantially as described. 11th. The combination, in a track laying machine, of the engine shaft, the driving wheels mounted on said shaft, the parallel shafts arranged at either side of the machine, the belt wheels mounted on said shafts, the small gear wheels mounted on the

ends of said shafts, the belts loosely embracing said drive wheels and belt wheels, the large gear wheels in mesh with said small gear wheels, and mounted on shafts having their bearings at each side of the machine, the tumbling rods jointed to said shafts, the tightener pulleys, the levers carrying said pulleys, the shafts having their bearings in the frame of the machine, and the levers connected to said shafts, whereby said pulleys may be thrown in and out of contact with said belts, substantially as described. 12th. The combination, in a track laying machine, of the engine shaft, the friction wheel mounted on the end of said shaft, the shaft having a movable end bearing arranged below said wheel, and carrying the large friction wheel, the roller mounted on said last named shaft, the vertical lever pivoted at its lower end connected to said movable bearing, the horizontal rod connected to the upper end of said lever, the grooved wheel, the rod T¹, the chain passing around said grooved wheel and connecting the ends of the rods, the rod T, and the lever 10 fulcrumed at the front end of the machine, whereby said bearing may be moved to throw the friction wheels into contact, substantially as described. 13th. The combination, in a track laying machine, of the movable frame mounted on the main frame and carrying the segment rail at its free end, means for moving said frame, the tubular king bolt, the forked frame having one end pivotally mounted above said movable frame on said king bolt, the shaft having its bearings in the free end of said forked frame, the flanged wheel mounted on said shaft, the grooved wheel also mounted on said shaft, the chain having one end secured to said shaft, and carrying a tongs at its other end, the beam secured at one end to the forked frame, and projecting therefrom at an acute angle, and carrying a pulley near its outer end, the roller and friction wheel mounted on a movable adjustable shaft at the rear end of the machine, the rope connected at one end to the grooved wheel and leading over the pulley in the beam through the tubular king bolt to said roller, the engine shaft carrying the friction wheel, and means for throwing the friction wheel into contact, substantially as described. 14th. The combination, in a track laying machine, of the movable frame mounted on the main frame, the segmental rail secured to the free end of said movable frame, the arc shaped table secured on the rear end of the main frame, the rollers secured to said movable frame, the segment curve indicator, the lever fulcrumed to the rear edge of the table, the rod connecting said lever and movable frame, and the movable or travelling forked frame carrying the mechanism for raising and lowering the rails mounted on said movable frame, substantially as described. 15th. The combination, in a track laying machine, of the movable frame carrying the segment rail mounted on the main frame, the tubular king bolt, the pulley arranged at the upper end of said king bolt, and the pulley arranged at the lower end of said bolt, the forked frame having one end pivotally mounted on said bolt, the shaft having its bearings in the free end of said frame, the grooved wheel mounted on said shaft, the flanged wheel adapted to fit said segment rail, the chain connected to said shaft and carrying the tongs, a platform supported from said frames, the foot lever, the lever having one end pivotally secured to the forked frame and carrying a fork intermediate its ends, a rod connecting said lever, the rope secured to the grooved wheel and leading through the king bolt to the operative mechanism at the rear of the machine, and means for starting and stopping said operative mechanism, substantially as described. 16th. The combination, in a track laying machine, of the movable frame mounted on the main frame and carrying a segment rail, means for moving said frame, a forked frame mounted on the front part of said movable frame, means for moving said forked frame on said rail, and mechanism mounted on the front part of said forked frame for raising and lowering the rails, substantially as described.

No. 41,578. Driving Mechanism.

(Mécanisme conducteur.)

Alexander E. Brown, Cleveland, Ohio, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. In an equalizing driving apparatus for the purpose specified, the combination of a series of two or more drivers or driving arms, a suitable body, frame or frames supporting the same, and a confined fluid body against the common pressure of which the said drivers or driving arms act and are resisted. 2nd. In an equalizing driving apparatus for the purpose specified, the combination with a series of two or more plungers or pistons, acting as or supporting drivers or driving arms, a suitable plate or frame (adapted to be secured to a lathe, boring mill or other machine tool) supporting said plungers, and a fluid body within a common chamber or series of intercommunicating chambers, against the common pressure of which the said plungers act and are resisted. 3rd. In an equalizing driving apparatus for the purpose specified, the combination of a series of two or more plungers or pistons acting as or supporting drivers or driving arms, two or more separate bodies or plates (adapted to be secured to the face plate or table of a lathe, boring mill or other machine tool) each containing or supporting one of said plungers, and a fluid body confined in intercommunicating chambers by said plungers, against the common pressure of which the said driving plungers act and are resisted.

No. 41,579. Running Gear for Vehicles.*(Train de voiture.)*

William Bonnar, Bolton, Ontario, Canada, 14th January, 1893; 6 years.

Claim.—1st. A running gear in which the axle has a bearing box formed on each end and is strengthened by the truss C, substantially as and for the purpose specified. 2nd. A running gear in which the axle has a bearing box formed on each end and is strengthened by the truss C, in combination with the spindle D, journalled in the bearing box B, and having a wheel rigidly fastened to it, substantially as and for the purpose specified. 3rd. The spindle D, having a disc H rigidly fastened to it, the spokes J, arranged as described on the face of the disc H, in combination with the disc I, having a bead a, formed on its face and secured to the spindle D, by means of the nut M, substantially as and for the purpose specified. 4th. The spindle D, having a collar F, formed on it to fit into a recess made in the outer end of the bearing box B, in combination with the dust apron I, substantially as and for the purpose specified. 5th. An improved vehicle spring gear composed of four torsion rods, each rod placed longitudinally upon the frame of the vehicle and having a crank formed on one end of it, the other end being fixed to the vehicle, in combination with a swing link arranged to connect the crank to the bolster or other part of the running gear, substantially as and for the purpose specified. 6th. An improved vehicle spring gear consisting of four torsion rods N, each rod placed longitudinally upon the bottom of the vehicle and having a crank M, formed on one end of it and connected by the link R, to the bolster S, or other part of the running gear of the vehicle, in combination with a plate Q, having holes P, arranged to receive the bent end O, of the rod N, substantially as and for the purpose specified. 7th. The hammer brace c, fast to the bolster S, and supporting in suitable bearings the king bolt g, in combination with the axle A, and truss C, pivoted on the king bolt g, by suitable lugs or clips, substantially as and for the purpose specified. 8th. The hammer brace c, fast to the bolster S, and pivoted on the end of the reach h, in combination with the king bolt g, and the axle A, and truss C, pivoted on the said king bolt g, by suitable lugs or clips, substantially as and for the purpose specified. 9th. The axle A, and truss C, in combination with the bolt h, substantially as and for the purpose specified.

No. 41,580. Holder for the Guards of Carving Forks.*(Porte-garde pour fourchettes à dépecer.)*

William Lawrence Foster, Kensington, London, England, 14th January, 1893; 6 years.

Claim.—1st. The combination, with a carving fork, having the usual guard and provided with a shoulder on its shank where the latter joins the handle, of a detachable guard holder having a slot to permit of its connection to the guard and co-operating with the shoulder on the shank of the fork, substantially as set forth. 2nd. As a new article of manufacture, a suitably shaped detachable holder for the guards of carving forks, comprising two legs to straddle the shank carrying the prongs of the fork, and a slot for passage therethrough of the guard of the fork, substantially as set forth.

No. 41,581. Wrench. (Clé à écrou.)

Alfred Boehmer, St. Louis, Missouri, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. An improved wrench having a fixed jaw, a shank projecting therefrom, a sliding adjustable jaw reciprocating thereon, and a tubular handle axially revoluble on said shank, substantially as set forth. 2nd. An improved wrench having a fixed jaw and a tubular sectional handle axially revoluble on said shank, substantially as set forth. 3rd. An improved wrench, having a fixed jaw and shank, a sliding jaw adapted to be operative upon said shank, a tubular handle axially revoluble on said shank, and slidably reciprocatory upon said shank, substantially as set forth. 4th. An improved wrench having a fixed jaw and shank, a sliding adjustable jaw, a tubular handle comprising a hinged section and said handle revoluble upon said shank and slidably reciprocatory upon same, substantially as set forth. 5th. An improved wrench having a tubular handle, revoluble and reciprocatory upon a shank, a sliding jaw upon said shank, said jaw having a projecting portion with a curvilinear slot in same adjacent, the end face of the jaw shank and into an annular groove in the periphery of said handle, substantially as set forth. 6th. An improved wrench having a tubular sectional handle, comprising a section embracing half the diameter of said handle and the main portion of its length, said handle provided with an interior bore of the diameter of the width of the shank, a counter bore in said handle, the diameter of the screw threads upon said shank, and said section provided with interior screw threads in its counter bore adapted to engage in the screw threads upon the shank, substantially as set forth. 7th. An improved wrench having a sectional tubular handle, comprising a longitudinal section of said handle hinged thereto, a spring located in a recess in the inner edge of said section, and adapted to normally keep the interior screw threads in same out of contact with the screw threads upon the shank, substantially as set forth. 8th. An improved wrench having an adjustable sliding jaw reciprocatory upon a shank with a fixed

jaw at right angles therewith, a portion of the length of said shank screw threaded, a handle axially revoluble upon said shank, a cut out portion in the lower edge face of the sliding jaw, and a pin secured in said shank adapted to engage said cut out portion to prevent the disengagement of parts, and limit the backward movement of the sliding jaw, substantially as set forth.

No. 41,582. Chain Machine.*(Machine pour la fabrication des chaînes.)*

Frederick Egge, Bridgeport, Connecticut, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. In a machine for automatically making sheet metal chain, the combination, with means for blanking out and delivering the links, of means for feeding a blank through the eyes of a previously formed link, means for turning said blank to a position at right angles to that in which it entered said eyes, a bending pin, and means for interposing the same beyond the ends of said link, means for bending and shaping said blank around said pin, means for withdrawing said pin, and means for bringing the blank so bent and shaped into position for the threading of a succeeding blank. 2nd. In a machine for automatically making sheet metal chain, the combination with a bending pin, of the pivoted reciprocating jaws, whereby the blanks are bent and shaped around said pin. 3rd. In a machine for automatically making sheet metal chain, the combination with the instrumentalities, so that they will produce predetermined lengths of chain. 4th. In a machine for automatically making sheet metal chain, the combination with the blanking, delivering, feeding, bending and shaping mechanisms, of means for interrupting the continuity of the chain at predetermined times, whereby given lengths of chain are produced. 5th. In a machine for automatically making sheet metal chain, the combination with the feeding mechanism whereby the blanks are successively threaded through the eyes of previously bent links, of means for arresting said mechanism at certain intervals, whereby predetermined lengths of chain are made. 6th. The combination of the shaft carrying cam 32, and worm, 53, the lever 29, and spring 33, resilient lead finger 57, having stud 59, engaging said worm, cam 55, having groove 54, into which worm leads, lever 62, and spring 63, as set forth. 7th. The combination of the cam 5, carried by the shaft 2, sliding carriage 6, normally held in contact with the face of said cam by a spring, jaws 10, pivoted on said carriage and normally distended by a spring, and having studs 13, which engage the sides of said cam, whereby the jaws are closed, means for feeding the blanks and turning them to a vertical position, and a bending pin around which the blanks are bent and shaped, substantially as set forth. 8th. The combination of the jaws, the blank feeding device, the rock shaft, and the bending pin, substantially as shown and described. 9th. The combination of the blank feeding device, the rock shaft notched to receive a horizontally disposed blank, and means for rocking said shaft to bring said blank into vertical position, substantially as set forth. 10th. The combination of the blank feeding device and the mechanism for bending and shaping the links, with the shaft 34, capable of rocking and longitudinal movements, substantially as set forth. 11th. The combination of the cam 32, and the blank feeding devices controlled thereby, the cam 5, and the bending and shaping mechanism actuated therefrom, the cam 14, and the mechanism controlled thereby for actuating the bending pin, and the cams 42, 49, and the blank turning devices actuated therefrom, all of said cams being carried by a single shaft, substantially as shown and set forth. 12th. The combination of the lever 29, cam 32, spring 33, and feed finger carrying block 25, as set forth. 13th. The combination of the resilient lead finger 57, and the adjustable stop 65, substantially as set forth. 14th. The combination of the reciprocatory pivoted jaws 10, the bending pin and means for projecting and withdrawing the same at the proper times, and means for feeding a blank within the eyes of a completed link while the latter is held clamped by said jaws, substantially as set forth. 15th. The combination of the bending pin, the pivoted jaws, means for feeding a blank and turning it in a vertical position athwart the ends of said jaws, means for advancing said jaws in distended condition to bend the blank around said pin, means for closing the jaws upon the blank around the pin, means for withdrawing said pin, and instrumentalities for retracting said jaws, substantially as set forth. 16th. The combination of the cam 14, pivoted bell crank 15, pin 18, capable of a vertical play through the bed 1, and spring 20, substantially as set forth. 17th. The combination of the cam 14, the vertical reciprocatory pin 18, and the bell crank 15, whose upper end is held in normal contact with said cam by a spring, while the lower end is loosely connected to the pin, substantially as set forth. 18th. The combination of the shaft 34, journalled in bearings so as to be capable of both rotary and longitudinal movements, the cam 42, the pivoted lever 40, whose rear end is engaged by said cam and whose front extremity is operatively connected to said shaft, and the spring 44, substantially as set forth. 19th. The combination of the shaft 34, the crank 46 thereon, the lever 47, having its front end pivoted to said crank and its rear extremity so guided as that a to and fro movement is permitted to said lever, the roll 50, carried by said lever, the cam 49, adapted to act against the roll to throw the lever forward, and the spring 51, whereby said lever is returned backward to normal position, substantially as set forth. 20th. The combination of the shaft 34, capable of rotary and longitudinal movements, the cams 42, 49, mounted on a rotary shaft, a pivoted lever 40,

operated by the cam 42, and a spring 44, whereby said shaft 34, is reciprocated lengthwise, the crank 46, splined on the shaft 34, the lever 47, pivoted at its forward end to said crank and supported at its rear end in such manner as to permit of a to and fro movement, the roll 50, carried by the lever 47, and the spring 51, said cam 49, and spring 51, operating to throw the lever 47, forward and backward, whereby the shaft 34, is rocked, substantially as set forth. 21st. In a machine for making sheet metal cham, the combination, with the reciprocatory bending and shaping jaws, of the stop 52, against which the ends of the link are abutted, substantially as and for the purpose set forth.

No. 41,583. Hot Air Furnace. (Calorifère à air.)

Albert Drajer Martin, Hamburg, New York, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. The combination with the fire pot and the annular chamber or smoke belt surrounding the fire pot and separated therefrom by an air passage of the combustion chamber formed at its front side with upright flues each connected at its lower open end with the smoke belt provided on its inner side with a slot opening into the combustion chamber and extending from the upper to the lower head of the same and a smoke exit pipe connected directly with the rear side of the smoke belt, substantially as set forth. 2nd. The combination with the fire pot and the annular chamber or smoke belt surrounding the fire pot and separated therefrom by an air passage of the combustion chamber provided at its front side with upright flues each connected at its lower open end with the smoke belt and having on its inner side a slot opening into the combustion chamber and extending from the upper to the lower head of the same air pipes arranged within the combustion chamber and communicating at their lower ends with the air passage between the smoke belt and the fire pot and an exit pipe connected directly with the rear side of the smoke belt, substantially as set forth. 3rd. The combination with the fire pot and the smoke belt having its upper head provided with openings of the combustion chamber having its lower head provided with hollow nipples which fit into the openings in the head of the smoke belt upright flues arranged in the front side of the combustion chamber provided on their inner sides with slots opening into the combustion chamber and extending from the upper to the lower head of the combustion chamber and having their lower ends registering with said nipples, substantially as set forth. 4th. The combination with the fire pot the combustion chamber and the smoke belt surrounding the fire pot and separated therefrom by an air space or passage of a flue connecting the smoke belt with the combustion chamber and an inwardly projecting flange arranged at the lower portion of the smoke belt around the fire pot whereby the ascending cold air is directed toward the fire pot, substantially as set forth. 5th. The combination with the fire pot and the combustion chamber provided with projecting upright flues having longitudinal slots in their inner sides whereby they communicate with the combustion chamber of a smoke belt surrounding the fire pot separated therefrom by an air passage and having its upper head provided with openings which coincide with the lower open ends of said upright flues and having its lower head formed with an inwardly extending flange separated from the fire pot by an air passage and forming a deflector for directing the ascending cold air against the fire pot, substantially as set forth.

No. 41,584. Apparatus for Actuating Lifts, Elevators and Similar Machines. (Appareil pour mettre en mouvement les élévateurs ou autres machines semblables.)

Arthur W. D. Bell and John Welshy, both of Wellington, New Zealand, 14th January, 1893; 6 years.

Claim.—1st. The combination, in apparatus for actuating lifts and elevators, of the cross head *c*, with a series of pulleys such as *p*, *p*¹, *p*² and pulley *p*³, with ropes *r*, giving any required speed to the load, all substantially as set forth. 2nd. The combination, in apparatus for actuating lifts and elevators, of the cross head *c*, having guide bars *a*¹, working through a guide *a*², with pulleys *p*¹, *p*², having sliding bearings *g*, or their equivalents, by which they can be thrown out of gear to give differential action to the lift, all substantially as set forth. 3rd. The combination, in apparatus for actuating lifts and elevators, of the series of pulleys and ropes for lifting the cage, with snatch block *t*, and jib *u*, actuated by one of the ropes *r*, for lifting weights, all substantially as set forth.

No. 41,585. Car Coupler. (Attelage de chars.)

La Burt Automatic Electric Block Signal System and Car Coupler Company, assignee of John La Burt, all of New York, State of New York, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. In a car coupler, composed of a bifurcated head with a swinging locking jaw, a locking pawl pivoted transversely at one end within the head, the other or free end of said pawl being adapted to engage the arm *b*, of the locking jaw to retain it in the locked position, and to be lifted vertically, for the purpose of releasing said jaw, substantially as shown and described. 2nd. In a car coupler, composed of a bifurcated head with a swinging locking jaw, an incline formed upon the upper pivotal bearing of said

coupler head, together with a corresponding incline formed on the underside of the pivotal pin head, as and for the purposes set forth.

No. 41,586. Process of Embedding Wire in Glass.

(*Procédé pour emboîter le fil de métal dans le verre.*)

The Wire Glass Company, assignee of Frank Shuman, both of Philadelphia, Pennsylvania, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. The process herein described, of making wire glass, said process consisting in first preparing a sheet of molten glass; second, mounting thereon wire or wire gauze; third, pressing the said wire or wire gauze into the glass, and finally closing the openings made by the wire, substantially as described. 2nd. The process herein described, of making wire glass, said process consisting in first rolling the glass into a sheet; second, placing upon the glass the wire or wire gauze, impressing portions of the wire gauze deeply into the glass, thus corrugating the same, and finally rolling the glass and embedding the wire therein, substantially as described.

No. 41,587. Machine for Embedding Wire in Glass.

(*Machine pour emboîter le fil de métal dans le verre.*)

The Wire Glass Company, assignee of Frank Shuman, all of Philadelphia, Pennsylvania, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. The combination, in a machine for manufacturing wire glass, of the table upon which the molten glass is poured, a roller for smoothing out said molten glass, a carrier for the wire or wire gauze situated back of the smoothing roller, and a finishing roller for closing the openings in the glass made by the wire or wire gauze, substantially as described. 2nd. The combination of the bed for the glass, the carriage, the first smoothing roller, a ribbed roller, and a finishing roller for smoothing the glass after the ribbed roller has passed over it, with a chute or guide for the wire, situated between the first roller and the ribbed roller, substantially as specified. 3rd. The combination of the furnace, the table mounted above the furnace, a carriage, three rollers mounted thereon, the first roller being the first smoothing roller, the second roller having ribs for depressing the wire into the glass, and the third roller being the final smoothing roller for closing the openings formed by the ribbed roller, with mechanism by which the carriage is drawn over the table, substantially as described. 4th. The combination of the table, a heating device therefor, rails on the table, rails at each end of the table in line with the said rails on the table, the carriage, two smoothing rollers thereon, and a central depressing roller for the wire and a chute upon which the wire is mounted, said chute being situated between the forward smoothing roll and the depressing roll, substantially as described. 5th. The combination of the table, longitudinal ribs *b*, thereon for confining the glass, with a plate resting between the ribs upon which the glass is rolled, with rollers for smoothing the glass and for forcing the wire into the glass, substantially as described. 6th. The combination of the table, a device for heating the same, longitudinal ribs on the table, longitudinal rails on the outer edge of the table, rails at each end of the table aligning with the rails on the table, a carriage, mechanism for drawing the carriage over the table, said carriage having a primary smoothing roll and a finishing smoothing roll and a central ribbed roll, a chute carried by the carriage, with heating appliances for the rolls so that they will not chill the glass during the process of rolling, substantially as specified. 7th. The combination of the table, the rails, the carriage, the forward smoothing roll and the rear smoothing roll, a central ribbed roll, an inclined chute for the wire, with a trigger holding the wire in the chute, substantially as specified. 8th. The combination of the furnace, the table mounted thereon, rails on the table, ribs to prevent the glass from spreading, rolls adapted to the rails, the forward roll and rear roll being smoothing rolls, ribs on the central roll, each of said rolls being hollow and having removable heads, with cores in said rolls adapted to be heated, with a chute for the wire, said chute being situated between the forward roll and the ribbed roll, substantially as specified. 9th. The combination of the table, the carriage, supporting rolls therefor, with a ribbed roll mounted loosely in bearings on the carriage, substantially as and for the purpose set forth.

No. 41,588. Steam Boiler. (Chaudière à vapeur.)

Herbert Fletcher Cook, Lucian W. Bingham, Charles L. Douglas and Charles B. Squire, all of Cleveland; James H. King, of Painsville; Charles N. Schmick, of Letona, and Scott E. Welker, Letona, all in the State of Ohio, U.S.A., 14th January, 1893; 6 years.

Claim.—In a tubular steam boiler, the combination of a boiler consisting of a chamber B, heated partly below the fire grates of a furnace, an upper chamber E, the upper tube shut off chamber B, and the lower tube shut off chamber E, connected by a central large flue D², and by surrounding vertical water tubes D, and a circular enclosing casing A, having the walls reduced in diameter above the fire grates, and a deflecting rim or ridge *b* on its inner surface midway between the two chambers B and E of the boiler, and covered with a suitable crown leading into a smoke stack constructed to operate, substantially as specified.

No. 41,589. Motor. (Moteur.)

John Sands, John Brewster and Luke Fox, all of Seattle, Washington, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. In a motor of the class described, the combination with the casing having a water discharge and bearings, and provided upon its upper side with a dome, of an axle journaled in the casing, a hydraulic wheel mounted on the axle, a water discharge pipe extending into the casing, a discharge nozzle contracted and pivotally connected to the pipe, and provided with opposite trunnions and an air chamber, an inverted U-shaped hanger perforated at its ends for engaging the trunnions, and a threaded screw connected with the hanger, passed between the perforations in the dome, and terminating above the same in a head, substantially as specified. 2nd. In a motor of the class described, the combination with the motor casing having bearings and a water discharge of the hydraulic wheel, an axle for the same, a water supply pipe terminating in the casing, a contracted L-shaped nozzle pivoted to the pipe, and means for adjusting the same, substantially as specified. 3rd. In a motor of the class described, the combination with the casing having the air and water discharges, the axle journaled in the casing, the wheel mounted on the axle, and having two parallel peripheral flanges, pneumatic buckets connected to the outer sides of the flanges, and hydraulic buckets located between the same, of a water supply pipe passing into the casing over the central series of buckets, and opposite pneumatic pipes reduced at their inner ends and terminating in line with said pneumatic buckets, and horizontally opposite the same, substantially as specified.

No. 41,590. Car Coupler. (Attelage de chars.)

Herman Bunker and James Herbert McKeggie, both of Barrie, Ontario, Canada, 14th January, 1893; 6 years.

Claim.—1st. A car coupler consisting of a head with a rectangular chamber therein, said chamber widening out and flaring laterally from rear to front, and having a pin lying horizontally therein and projecting therefrom, the part of the pin which projects terminates in a point, and has on its upper side a notch with a vertical side forming a hook or barb, said pin being also furnished with another notch on its upper side somewhere about the middle thereof, said pin being secured to the interior of the chamber by a vertical bolt passing through the pin at or near its inner extremity, whereby when two cars are brought together, each having such a coupler thereon, the pin of one coupler will enter the chamber of the adjacent coupler, substantially as described. 2nd. A car coupler consisting of a head with a chamber therein, which chamber widening out and flaring laterally from rear to front, said head being furnished with two projecting lugs or ears, to which is bolted a latch or dog having a circular vertical motion, said latch or dog passing by a suitable slot through the upper part of the head and into the chamber, said latch or dog having one side thereof bevelled or curved, this bevelled or curved side being outward when the latch or dog is down, the said latch or dog having a ring or handle at the end opposite to where it is bolted to the head, and by which it is raised or lowered whereby when two cars are brought together, each having such a coupler thereon, the notch pin of one coupler will enter the chamber of the adjacent coupler, press against the bevelled or curved side of the latch or dog, raise it until the notch is passed, and automatically engage there-with, substantially as described. 3rd. A car coupler consisting of a head, a chamber and a coupling pin bolted to the car in the usual manner by a bolt passing through the end of coupler which is underneath the car, but having the other end of said coupler suspended from the car by a chain, substantially as described. 4th. A car coupler consisting of a head with a hollow chamber therein, which chamber contains a coupling pin, the axial line of said pin being constantly restored to a position parallel with the centre line of the coupler by means of two vertical ribs in and at right angles to the longitudinal axis of said chamber, the upper edges of said ribs incline towards each other forming a V, the angle of said V being on the centre line of the coupler, the pin coming in contact with the edges and sliding down, them by force of gravity, reaches the lower part of the V, and centre of the coupler being thereby constantly restored to its central position in the chamber, substantially as described. 5th. In a car coupler having therein a hollow chamber, a latch or dog fastened to it by a bolt passing through two lugs or ears in said coupler, said latch having one side bevelled or curved and by its circular motion round the bolt by which it is fastened to the coupler, enabled to pass through the coupler and into the hollow chamber within same, by a slot formed in same for that purpose, and when the latch is acted upon by the coupling of the car to be connected therewith and having a similar coupler advancing in the curved side, being coupled and pressing against its bevelled or curved side, rises and admits the pin till a notch forming a barb or hook in said pin is reached, when the latch immediately falls and prevents the pin from being drawn out, the said latch or dog having a ringed handle to its outer end by which it is raised in order to liberate the pin, said latch or bolt having a projecting point or tooth at its hinged end to prevent its falling over when lifted to allow of the withdrawal of the pin, substantially as described. 6th. A car coupler with hollow chamber and a hinged latch or dog falling through a slot in said hollow chamber, the latch having a bevelled side and fitting into a single double headed notched pin, the other

end of said pin being caught in a similar manner by a similar coupler on the car with which it is intended to be connected with, substantially as described.

No. 41,591. Fruit Slicer.

(Appareil pour trancher les fruits.)

Franklin Benjamin Smith, Clyde, New York, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. In a fruit slicer, the combination of a vertically rotary wheel, projections on the periphery of said wheel, a series of knives over the said periphery, and a fruit supporting spindle in front of the knives and in the path of the projections of the aforesaid wheel, substantially as and for the purpose specified. 2nd. The combined slicing and chopping machine consisting of a vertically rotary wheel, projections on the periphery of said wheel, a series of knives over said periphery, and a vertical knife removably connected to the frame in front of said series of knives to convert the slicing machine into a chopping machine, as set forth. 3rd. The combination of a vertically rotary wheel, plates arranged movably radially in the periphery of said wheel, springs holding said plates normally in outward projecting positions, a series of knives disposed transversely over the periphery of the aforesaid wheel and at varying distances therefrom, and a cam adapted to press the aforesaid plates inward from their projecting position during the passage of the same under the aforesaid knives, substantially as set forth. 4th. The combination of a vertically rotary wheel, spring leaves secured to the inner side of the peripheral rim of said wheel and exerting an outward pressure with their free ends, plates disposed crosswise of the periphery of the wheel and secured to the free ends of said spring leaves, and held thereby in a radially outward projecting position, and provided with radial slots in their outer ends, a series of knives disposed transversely over the periphery of the wheel and at varying distances therefrom, a fruit supporting spindle in front of the knives and in the path of the slots of the aforesaid plates, and a cam adapted to depress the free ends of the spring leaves during the passage of the slotted plates under the knives, substantially as described and shown. 5th. The combination of a vertically rotary wheel having a broad peripheral rim and transverse slots through said rim, springs secured to the inner side of the wheel, plates secured to said springs and projecting through the aforesaid slots of the wheel, rollers pivoted to the heels of the plates outside of the edges of the rim of the wheel, stationary cams on the frame in the path of the aforesaid rollers, and a series of knives over the portion of the rim of the wheel directly over the aforesaid cams, substantially as described and shown, for the purpose set forth. 6th. The combination, with the supporting frame, of a vertically rotary wheel having a broad peripheral rim and transverse slots through said rim, spring leaves secured to the inner side of said rim and pressing outward with their free ends, plates secured to the latter ends of the spring leaves and held thereby projecting outward through the aforesaid slots of the wheel rim and provided with radial slots, rollers pivoted to the heels of said plates outside of the edges of the wheel rim, cams secured in the path of the aforesaid rollers, a series of knives over the rim of the wheel directly over the aforesaid cams, and a fruit supporting spindle in front of the knives and in the path of the slots of the aforesaid plates, substantially as described and shown. 7th. In combination with the supporting frame A, and the vertically rotary wheel B, provided with projections on its periphery, the knife holding frame F, hinged at its front end to the said frame and supported at its opposite end by braces K, substantially as described and shown.

No. 41,592. Salt. (Sel.)

Arthur W. Lawton, Albert L. Lawton, and Charles F. Lawton, all of Rochester, New York, and William W. Dodge and Walter S. Dodge, of Washington, D.C., U.S.A., 14th January, 1893; 6 years.

Claim.—1st. The herein described method of purifying salt (chloride of sodium) which consists in first lining a receptacle with a basic infusible material such as described next placing salt therein and finally fusing the salt in said receptacle whereby the salt is purified and the formation of silicates is prevented, as shown and described. 2nd. The method of purifying salt (chloride of sodium) which consists in the following steps, viz.: lining a receptacle with a basic infusible material as lime and clay which will by reason of its inert chemical qualities prevent the formation of soda silicate and the destruction of the receptacle placing salt in said receptacle fusing the salt therein and adding to the salt before or after fusion an alkaline material, as shown and described. 3rd. The improvement in the process of manufacturing salt which consists in forming it into globules while in a fluid or melted state, as shown and described. 4th. As an improved article of manufacture salt made in globular form, as shown and described. 5th. Salt made in globular form by the projection through air of a body of melted or fused salt as shown and described. 6th. In combination with a fire chamber A the fue F and salt inlet G the reduction chamber C, D, and the receptacle B, as described and as shown. 7th. In combination with the salt receptacle B the chamber A and the atomizer E, as described and as shown.

No. 41,593. Rotary Magnetic Separator.*(Séparateur magnétique.)*

Erastus Wiman, New Brighton, New York, assignee of George Shelby Finney, Chicago, Illinois, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. A magnetic wheel for a separator, comprising a single magnet having the poles extended from its opposite ends crosswise of the plane of its circumference, and forming elements of its cylindrical surface, substantially as described. 2nd. A magnetic wheel for a separator, comprising a metallic spool r , wound around the body portion p , between the heads q and q^1 , with wire m , metal bars f^1 , extending from the head q^1 , toward the head q , and the metal bars f , extending from the head q , toward the head q^1 , and alternating with the bars f^1 , substantially as described. 3rd. An electro magnetic wheel for a separator, comprising a spool r , provided with offsets o , in its head q and q^1 , and having wound upon its body portion p , wire m , a shaft n , carrying a transmitter B, to which the terminals of the wire m are connected, bars f , extending from the head q , toward and secured to and insulated from the head q^1 , and bars f^1 , extending from the head q^1 , toward and secured to and insulated from the head q , and alternating with the bars f , substantially as described. 4th. In a magnetic separator, the combination, with a supporting frame, of a magnetic wheel comprising a single magnet having the poles extending from its opposite end crosswise of the plane of its circumference and forming elements of its cylindrical surface, and an endless apron C, passed around the said wheel and around a suitably supported roller D, substantially as described. 5th. In a magnetic separator, the combination, with a supporting frame, of a magnetic wheel, a raffle duct F, a sluice box G, and an endless apron C, passed around the said wheel and having its path of travel extending through the sluice box, substantially as described. 6th. In a magnetic separator, the combination, with a supporting frame, of a magnetic wheel having the poles extended crosswise of the plane of its circumference and forming elements of its cylindrical surface, a raffle duct F, a sluice box G, and an endless apron C, passed around the said wheel and having its path of travel extending through the sluice box, substantially as described. 7th. In a magnetic separator, the combination of a wheel, which has magnets so disposed that the circumference of said wheel is in the field of said magnets and belt which runs over said wheel, substantially as described.

No. 41,594. Skate. (Patin.)

Charles Henry Smith and Asa Matthews, both of Toronto, Ontario, Canada, 14th January, 1893; 6 years.

Claim.—1st. A skate formed integrally and provided with two front runners and a rear runner located centrally behind the front runner, as and for the purpose specified. 2nd. A skate formed integrally and provided with two front runners and a rear runner located centrally behind the front runner, and two holes situated above and to each side of the front runners and above and to each side of the rear runner, as and for the purpose specified. 3rd. A skate formed integrally and comprised of the front runners B, and holes D, situated above and to each side of the front runners, a rear runner C, and holes E, situated above and to each side of it, the top of the holes being bounded by upwardly extending ridges F, as and for the purpose specified. 4th. A skate formed integrally and comprised of the front runners B, and holes D, situated above and to each side of the front runners, a rear runner C, and holes E, situated above and to each side of it, the top of the holes being bounded by upwardly extending ridges F, and teats G, situated on the side edges A¹, and central bridge A¹¹, of the skate, as and for the purpose specified.

No. 41,595. Elbow for Stove Pipes.*(Coudre pour tuyaux de poêle.)*

Otto Guy Cranston, Blue Mound, Kansas, and Walter F. Richards, Quincy, Illinois, all in the U.S.A., 14th January, 1893; 6 years.

Claim.—1st. As a new article of manufacture, an elbow or joint for stove pipes, having an opening or aperture cut therein through the wall thereof, substantially as specified. 2nd. An elbow or joint section for stove pipes, having an aperture cut therein, and a plate or cover for closing said aperture, and means for fastening said plate or cover, substantially as specified.

No. 41,596. Gas Delivering Apparatus.*(Appareil de distribution du gaz.)*

Josias Taylor, New York City, New York, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. A gas measuring and delivering device comprising a closed liquid receptacle having separate induction and eduction ports, isolated induction and eduction chambers, a drum mounted to revolve on a horizontal axis in the liquid receptacle, to or slightly above which axis the drum is to be immersed, and formed with a plurality of longitudinal spiral compartments, each of which spiral compartments has end ports to communicate respectively with the said induction and eduction chambers approximately 180° apart, so that always one at least thereof will be sealed by the liquid, and

means for revolving the drum, substantially as hereinbefore set forth. 2nd. A gas measuring and delivering device comprising a closed liquid receptacle having separate induction and eduction ports, isolated induction and eduction chambers, a drum mounted to revolve on a horizontal axis in the liquid receptacle, to or slightly above which axis the drum is to be immersed, said drum being divided by longitudinal spiral partitions into a plurality of longitudinal spiral compartments, each of which has slit like radial end ports to communicate respectively with the said induction and eduction chambers approximately 180° apart, the induction end port of each spiral compartment being closed behind the forward spiral partition thereof, and the eduction end port immediately in advance of the rear spiral partition thereof and means for revolving the drum, substantially as hereinbefore set forth. 3rd. Apparatus for mixing gases in predetermined uniform proportions, and delivering the mixture at a predetermined uniform pressure, comprising a closed liquid receptacle having separate induction ports, and an eduction port isolated, induction chambers, and an eduction chamber, a mixing chamber communicating with the eduction chamber, separate drums mounted to revolve on horizontal axis in the liquid receptacle, to or slightly above which axis the drums are to be immersed, each drum being formed with a plurality of longitudinal spiral compartments, each of which has end ports to communicate respectively with the said induction and eduction chamber approximately 180° apart so that always one at least of the end ports of each spiral compartment will be sealed by the liquid, and means for revolving the two drums at predetermined relative speeds, substantially as hereinbefore set forth.

No. 41,597. Antifriction Support for Cars.*(Support sans friction pour chars.)*

Luther Kendall Jewett, Boston, Massachusetts, 14th January, 1893; 6 years.

Claim.—1st. In an antifriction support, the combination, with a roller supporting base plate or frame, of antifriction devices, substantially as described, movable therein, a spacing frame, a top plate or frame resting upon the said antifriction devices, and gearing located between the said plates or frames to engage gearing on one of the said antifriction devices to rotate the same, substantially as described. 2nd. In an antifriction support, the combination, with a base plate or frame provided with a guideway, of antifriction devices, substantially as described, movable therein, a spacing frame to keep said antifriction devices separated, and a top plate or frame resting on the said antifriction devices, substantially as described. 3rd. In an antifriction support, the combination, with a base plate or frame provided with a guideway of antifriction rollers movable thereon, a spacing frame, a top plate or frame provided with a guideway, and gearing between said top plate and base plate, to operate substantially as described. 4th. The combination with a car truck and a car body mounted thereon, of an antifriction support sustained at the side of the truck and consisting of a base plate, antifriction rollers movable thereon, a spacing frame, a top plate or frame secured to the car body, and gearing intermediate of the said top plate and base plate, substantially as described. 5th. The combination, with a car truck, a car body mounted thereon, and a side support for said car body of an antifriction support sustained by said support and composed of a base plate or frame, antifriction rollers movable thereon, a spacing frame, a top plate or frame attached to the car body, and gearing intermediate of the said top and base plates, substantially as described. 6th. The combination, with a car truck, a car body mounted thereon, and a side support for said car body of an antifriction support sustained by said side support and composed of a base plate or frame, antifriction rollers movable thereon, a spacing frame, a top plate or frame attached to the car body, and gearing intermediate of the said top and base plates and springs interposed between said side support and the base plate of the antifriction support, substantially as described. 7th. In an antifriction support, the combination, with a base plate or frame, provided with a guideway, of antifriction devices, substantially as described, movable thereon, a spacing frame to keep said antifriction devices separated, and a top plate or frame provided with a guideway and resting on said antifriction devices, substantially as described. 8th. In an antifriction support, the combination, with a base plate or frame, of antifriction rollers provided with arbours, a spacing-frame supported by said arbours, and a top plate or frame resting on the said rollers out of contact with the said spacing frame, substantially as described.

No. 41,598. Antifriction Bearing.*(Coussinet de tourillon sans friction.)*

Luther Kendall Jewett, Boston, Massachusetts, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. In an antifriction support or bearing, the combination, with two plane or flat bearing surfaces provided with rack teeth, of an antifriction roller or ball having an arbor provided with a gear to engage said rack teeth, and a spacing frame supported by said arbor, substantially as described. 2nd. In an antifriction support or bearing, the combination, with two flat or plane bearing surfaces, of an antifriction conically-shaped roller interposed between said surfaces and provided with arbours extended beyond its ends, and an independent frame movable with said roller, substantially as

described. 3rd. In an anti frictionbearing or support, the combination, with two plane or flat concentric bearing surfaces, of anti-friction conically-shaped rollers provided with arbours, and having their peripheries inclined toward the centre of the concentric bearing surfaces, and an independent frame movable with the said anti-friction rollers and having its sides out of contact with the ends of the said anti-friction rollers, substantially as described. 4th. In an anti-friction centre bearing or support, the combination, with a bearing surface b , provided with a hub having a hole b^2 and with an annular rim b^3 , forming with the said hub a groove or channel b^4 , a co-operating surface b^5 , provided with a lip or flange b^6 to enter the said groove or channel, of anti-friction devices interposed between the said bearing surfaces outside of the rim b^3 , and provided with arbours, and a spacing frame co-operating with said arbours to maintain the anti-friction devices separated, substantially as described. 5th. In an anti-friction centre bearing or support, the combination, with a bearing surface b , provided with a hub having a hole b^2 and with an annular rim b^3 , forming with the said hub a groove or channel b^4 , guides b^9 b^{10} on said bearing surface, a co-operating bearing surface b^7 , provided with a lip or flange b^8 to enter the said groove or channel, of anti-friction devices interposed between the said bearing surfaces outside of the rim b^3 and provided with arbours, and a spacing frame co-operating with said arbours to maintain said anti-friction devices separated, and having side pieces extended outside of and below the guides b^9 , b^{10} , substantially as and for the purpose specified. 6th. In an anti-friction side bearing or support, the combination, with a bearing surface provided with rack teeth and a co-operating bearing surface provided with rack teeth, of an anti-friction conically-shaped roller provided with arbours and having gear teeth to engage said rack teeth, and a spacing frame movable with the said arbours, substantially as described. 7th. In an anti-friction side bearing or support, the combination, with a bearing surface provided with rack teeth, and a cooperating bearing surface provided with rack teeth of an anti-friction device provided with arbours and having gear teeth to engage said rack teeth, and a spacing frame having side pieces located outside of the said gears and movable with said arbours, substantially as described. 8th. In an anti-friction side bearing or support, the combination, with a bearing surface provided with rack teeth and having a guide and a co-operating bearing surface provided with rack teeth of an anti-friction conically-shaped roller provided with arbours and having gear teeth to engage said rack teeth, and a spacing frame having side pieces located outside of the said gears and movable with the said arbours, substantially as described.

No. 41,599. Side Bearing for Car Bodies.

(*Coussinet de côté pour chars.*)

Luther Kendall Jewett, Boston, Massachusetts, U.S.A., 14th January, 1893; 6 years.

Claim.—1st. The combination with a car body and its truck, of one or more side sustaining springs independent of the car truck and interposed between the said truck and car body, a firm support for said springs and a rocking cap or seat for said springs provided with a semicircular groove and a roller fitted into said groove to permit the said cap to rock without lateral motion, substantially as described. 2nd. The combination with a car body and its truck, of an anti-friction device, substantially as described, a firm support for said anti-friction device, one or more springs to support said anti-friction device, and a rocking cap or seat for said springs, substantially as described. 3rd. The combination, with a car body and its truck, of one or more side sustaining springs, a firm support for said springs, and a rocking cap or seat, and means to lock said spring cap within the spring seat whereby the said springs are relieved from strain by end thrusts, substantially as described.

No. 41,600. Process of and Apparatus for the Manufacture of White Lead. (*Procédé et appareil pour la fabrication du blanc de plomb.*)

Andrew Honman, Electra Street, and Victor Vulliez, Osborne Street, both of Williamstown, Victoria, Australia, 16th January, 1893; 6 years.

Claim.—1st. Preserving the basic acetate of lead thus produced at a uniform temperature of 120 degrees Fahrenheit, or thereabouts, throughout the whole operation, as and for the purposes herein described and explained. 2nd. Converting sulphate of lead into white lead by first dissolving it in a solution of caustic soda, caustic potash or ammonium acetate, and then precipitating the white lead by means of a solution of carbonate of sodium or potassium or ammonium, substantially as herein described and explained. 3rd. In apparatus for the manufacture of white lead, the employment of a cylinder provided with two manholes, one (such as F) through which lead oxide can be fed into, and the other (such as H) through which the residue can be withdrawn from said cylinder, which is moreover provided with a perforated false bottom (such as G) as well as with inlet and outlet pipes (such as I-J) for the lead acetate, substantially as and for the purposes herein described. 4th. In apparatus for the manufacture of white lead, the employment of a settling tank divided into two compartments, in one of which is arranged a series of horizontal baffle plates (such as L) whilst in the other is arranged a flexible tube (such as M) having a conical or trumpet-shaped mouth supported just beneath the level of the liquor

by floats (such as n), substantially as and for the purposes herein described. 5th. In apparatus for the manufacture of white lead, the combination with a tank having its sides inclined towards a discharge tube (such as P) of a coiled steam pipe (such as S) and a perforated carbonic acid delivery pipe (such as T) together with an inlet pipe for delivering basic lead acetate into said tank, said discharge tube being provided with a plug (such as Q) as well as a stop cock (such as Q1), substantially as and for the purposes herein described. 6th. In apparatus for the manufacture of white lead, the combination with a comparatively long shallow tray or receptacle (such as V) having flues (such as V1) leading from a furnace or fire place running underneath it, of a lid or lids (such as W) arranged at an inclination of about 45 degrees across said tray or receptacle and resting in a gutter or channel (such as X), substantially as and for the purposes herein described. 7th. In the manufacture of white lead, the employment of an apparatus for washing carbonic acid gas consisting essentially of a cylinder (such as Y) provided with a series of perforated floors (such as y) arranged one above the other and having tubes (such as y^1) projecting slightly above each of said floors and extending down to the floor next below, substantially as and for the purposes specified.

No. 41,601. Method of Making Coke.

(*Méthode de fabrication du coke.*)

Frederick Josiah Jones, 61 Goldington Road, Bedford, England, 16th January, 1893; 6 years.

Claim.—1st. The improvement in the process of making coke herein referred to, which consists in purifying the mixed gases resulting from the coking operation, reheating said gases and causing them to pass across through a fresh or a partially coked charge of coal, for the purpose of coking the same, or of completing the coking thereof and eliminating volatile impurities, as specified. 2nd. In the herein described process of making coke, the method of coking, which consists in purifying the gases used for coking and distilled off from other charges of coal, reheating said gases by admixture with fresh gas producer gases generated from pure fuel and with air, and causing the mixed gases and air to pass across through the charge of coal, as specified. 3rd. In the herein described process of making coke and obtaining bye-products, the improvement which consists in cooling and washing the mixed gases resulting from the coking operation herein referred to, collecting the condensable constituents, passing the cooled and washed gases through a purifier, then mixing them with fresh gas-producer gases generated from pure fuel and with air, and finally passing the purified and reheated gaseous mixture through a fresh or partially coked charge, as specified. 4th. In the herein described process of making coke, the improvement which consists in continuously purifying the cooled and washed gases, resulting from the coking of a charge of coal as described, in one purifier concurrently with the revivification of the spent lime by roasting it in another purifier, as specified.

No. 41,602. Electric Arc Lamp.

(*Lampe électrique à arc.*)

Albert W. Brown, Brooklyn, New York, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In an arc lamp, the combination, of a wheel or disc for controlling the movement of the carbon rod, connections between said wheel and said rod, clutch blocks arranged to engage with opposite surfaces on said wheel, a lever carrying said blocks, and mechanism for actuating said lever, so as to vary the position and the distance between the bearing surfaces of the blocks in accordance with variations in the resistance of the main circuit, substantially as and for the purposes set forth. 2nd. In an arc lamp, the combination, of a wheel or disc for controlling the movement of the carbon rod, connections between said wheel and said rod, clutch blocks arranged to engage with opposite surfaces on said wheel, a lever carrying said blocks, a stop arranged to engage with said lever, and mechanism for actuating said lever so as to vary the position and the distance between the bearing surfaces of the blocks, in accordance with variations in the resistance of the main circuit, substantially as and for the purposes set forth. 3rd. In an arc lamp, a wheel connected with the carbon rod and provided with two concentric bearing surfaces, a clutch block arranged to engage with each of said surfaces, and mechanism, substantially as described, for varying the position and distance between the bearing surfaces of said blocks in accordance with changes of resistance in the main circuit of the lamp, substantially as and for the purposes set forth. 4th. In an arc lamp, a wheel or disc for controlling the movement of the carbon rod provided with a flanged periphery, substantially as and for the purposes set forth. 5th. In an arc lamp, a clutch for controlling the movement of the carbon feeding devices, consisting of a vibrating lever actuated by changes in the resistance of the arc circuits, and carrying two or more brakes or clutch blocks arranged to engage with opposite surfaces of the carbon feeding devices, substantially as and for the purposes set forth. 6th. In an arc lamp, the combination of the wheel G, connections between said wheel and the carbon rod, the lever I, brakes or clutch blocks J, j, carried by said lever and arranged to engage with opposite surfaces of said wheel, and of a differential solenoid or electro-magnet, one coil or armature of which is arranged

in the main circuit of the lamp, and the other of which is arranged in a shunt circuit of higher resistance, substantially as and for the purposes described. 7th. In an arc lamp, the combination of the wheel G, connections between said wheel and the carbon rod, the lever I, a stop arranged to engage with said lever, brakes or clutch blocks J, J, carried by said lever and arranged to engage with opposite surfaces of said wheel and of a differential solenoid or electromagnet, one coil or armature of which is arranged in the main circuit of the lamp, and the other of which is arranged in a shunt circuit of higher resistance, substantially as and for the purposes set forth. 8th. In an arc lamp, the combination of a wheel or disc for controlling the movement of the carbon rod, and a clutch adapted to engage with and rotate said wheel, and thereby effect the separation of the carbons sufficiently to form an arc when the lamp is switched into circuit, substantially as and for the purpose set forth. 9th. In an arc lamp, the combination of a wheel or disc for controlling the movement of the carbon rod, and a clutch adapted to engage with the periphery of said wheel and rotate the same, and thereby effect the separation of the carbons sufficiently to form an arc when the lamp is switched into circuit, substantially as and for the purposes set forth.

No. 41,603. Grain Drill. (*Semoir en ligne.*)

Charles E. Patric, Springfield, Ohio, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The combination, in a grain drill with a frame, consisting of the front and side rails substantially at right angles, and a cross bar, as described, and a tongue secured to said cross bar and extending forward of the front rail of said frame, of the transverse rotating bars connected at each end to said frame, and provided at or near the middle with a bearing plate connected to said tongue and frame, and means for connecting the drag bars to said rotating bars, substantially as specified. 2nd. The combination, with a frame having the front and side rails formed of a single piece of flat metal, as described, and a cross bar connected at each end to said side rails, and extending parallel with said front rail, a tongue secured to said cross bar, a transverse bar or bars attached to said tongue and to said frame, and means for connecting the drag bars to said transverse bar or bars, substantially as specified. 3rd. The combination, with a frame, of parallel rotating bars journaled at each end in said frame, each provided with projecting arms, and drag bars connected to said projecting arms, of intermeshing gear segments connecting said bars so that a rotation of one bar produces a corresponding movement of the other bar, and stop projections in one segment adapted to come in contact with the teeth of the other segment, and thus limit the rotary movement of said segments and bars, substantially as specified. 4th. The combination, with the tongue and frame, of the transverse rotating bars extended across said frame, gear segments on said bars, a bearing plate connected to said tongue and to said frame, and provided with bearings for the hubs of said gear segments, projecting arms on said rotating bars, and means for connecting the drag bars to said projecting arms, substantially as specified. 5th. The combination, with the rotating bars having the arms or fingers with the connecting projections thereon, the gear segments on said rotating bars having stop projections, a bearing support having bearings for said gear segments, said bearing support being connected to the tongue and frame, respectively as described, of the bifurcated drag bars formed of resilient metal, and connected to said projections by being spread apart and forced over said projections which project in opposite directions, substantially as specified. 6th. The combination, with the frame having the front and side rails formed of a single bar of metal as described, and a transverse wooden bar connecting said side rails, connecting pieces at each end of said transverse bar, each having a socket for said bar, and laterally projecting lugs adapted to embrace said frame, and means for connecting said frame, bar and connecting pieces, substantially as specified. 7th. The combination, with a frame having the front and side rails formed of a single piece of metal, as described, and a transverse wooden bar connecting said side rails, a tongue connected to said bar, and a bearing support from said bar to the main axle, substantially as specified. 8th. The combination with the frame, having the front and side rails formed of a single piece of flat metal, as described, and a transverse wooden bar connected at each end to said side rails, and extended across the frame parallel to the front rail, a tongue secured to said cross bar, a bearing support from said cross bar to the axle, transverse rotating bars on said frame, and a bearing yoke or support connected to said tongue and to the front rail of said frame, and provided with bearings for said transverse rotating bars, and means for connecting the drag bars or shoes to said transverse rotating bars, substantially as specified. 9th. The combination with the main axle and a supporting or carrying wheel normally loose on said axle, a clutch collar adapted to engage with said wheel and cause the same to revolve with said axle, an axle box having a main bearing for said axle, connecting links extending through said axle box at each side of said main bearing, and engaging with said clutch collar, and a rock shaft supported in said axle box and adapted to engage at each end with said links, substantially as and for the purpose specified. 10th. The combination with an axle box and a clutch collar, as described, of the connecting links having bearings in said axle box on each side of the main bearing, a rock shaft journaled in said axle box at right angles to the connecting

links, crank arms on said rock shaft adapted to engage with said connecting links, and means for rotating said rock shaft, substantially as specified. 11th. The combination with the main axle box and a clutch collar, as described, of the sliding links engaging with said clutch collar and adapted to reciprocate through said axle box, a rock shaft journaled in said axle box and provided at one end with a crank adapted to engage one of said links, and at the other with a bell crank, one arm of which engages with the other link, and the other arm being connected to mechanism for operating said rock shaft, substantially as specified. 12th. The combination with the shoes, and hoes and their drag bars, of a lifting bar extended over and connected to said drag bars, a lifting lever for operating said lifting bar, a main axle box and a clutch for one or both carrying wheels, a rock shaft and sliding connecting links connected thereto in each axle box, said sliding links being connected to said clutch, and a connection from each crank arm on the end of the lifting bar to the rock shafts in said axle boxes, substantially as specified. 13th. The combination with the lifting lever, of a pivoted latch extending transversely across the end of the same, said latch being provided with an engaging projection, substantially at right angles thereto, and a laterally projecting flange formed on the arc of a circle and provided with notches with which said latch is adapted to engage, substantially as specified. 14th. The combination with a lifting lever and its supporting stand, having a lateral flange or segment provided with notches therein, a latch extending transversely across the end of said lever and pivoted at one end thereto, a spring engaging with said latch a connection from the outer end of said latch to a thumb lever, and an engaging projection on said latch adapted to engage in the notches of said frame or segment, substantially as specified. 15th. The combination with the frame and axle, of an axle box having the main part or frame portion adapted to be secured to said frame, and a bearing which fits loosely in said frame portion, said bearing being provided with an annular flange adapted to rest against the main or frame portion, and a stop projection to prevent the revolution of said bearing, substantially as specified. 16th. The combination with the main axle and the wheels and clutches, as described, a bearing box having a loose bearing portion with a projecting flange and a stop projection, as described, a rock shaft journaled in said axle box, and the reciprocating links connected to said rock shaft and adapted to engage with said clutch, substantially as specified. 17th. The combination with the frame and axle, of an axle box formed in two parts, one of said parts being provided with a web or flange portion, having an opening therein, and the other part being adapted to fit into said opening, having a stop flange with a notch or opening therein, and a projecting lug on the main portion adapted to engage in said opening, substantially as described. 18th. The combination with the main frame, formed of a single piece of metal, of a transverse wooden connecting bar, connecting plates between said frame and bar, said plates being provided with an extended flange, and means connecting said bar to said extended flange, substantially as specified. 19th. The combination with the frame, formed of a single piece of metal, as described, and a transverse wooden connecting bar, of bearing plates at each end of said bar, each having a socket to receive the end of said bar, and lateral projecting flanges to embrace said frame, one side of said socket being extended along the side of said bar and connected thereto, substantially as specified. 20th. The combination in a grain drill, of a frame consisting of the front and side rails formed of a single piece of metal, substantially at right angles, and a cross bar connecting said side rails, said rails being turned inwardly at the rear and connected together by a plate, substantially as described.

No. 41,604. Spring Hinge. (*Charnière à ressort.*)

E. C. Stearns & Company, assignee of Edward Carl Stearns, all of Syracuse, New York, U. S. A., 16th January, 1893; 6 years.

Claim.—1st. The combination, with the pivotally connected leaves of the hinge, of a spring casing arranged on one of the leaves and having its rear side made open for the introduction of the spring, substantially as set forth. 2nd. The combination, with the pivotally connected leaves of the hinge, of a spring casing cast integrally with one of the leaves and having an open rear side, which is closed by the contiguous face of the door or other part to which the leaf is secured, substantially as set forth. 3rd. The combination, with the pivotally connected leaves of the hinge, of a spring casing rigidly secured to one of said leaves and flaring toward its inner end, a spring arranged within said casing, a draw bar having a head bearing against the outer end of the spring and a loop arranged on the other leaf, eccentrically to the pintle line of the hinge and with which the inner end of the draw bar is connected, substantially as set forth. 4th. The combination, with the pivotally connected leaves of the hinge, of a spring casing having an open rear side and a slot formed in its inner head and open at its rear end, a spring arranged in said casing and a draw bar connected with said spring, and attached eccentrically to the other leaf, substantially as set forth. 5th. The combination, with the pivotally connected leaves of the hinge, of a spring casing rigidly secured to one of said leaves, a longitudinally compressible spring arranged in said casing, a draw bar passing through said spring and provided at its outer end with a follower which compresses the spring, and having at its

inner end an eccentrically arranged connection with the outer leaf, substantially as set forth.

No. 41,605. Vehicle Spring. (*Ressort de voiture*)

Hulbert Brooks, Kalamazoo, Michigan, U. S. A., 16th January, 1893; 6 years.

Claim.—In a vehicle, the combination of the body, the side springs having the central offsets, and the transverse springs loosely attached at the ends to the side spring and the spring bars on the transverse springs, said bars being adjustably attached to the body, whereby the transverse springs may be moved toward the ends or forth of the vehicle, according to the burden, substantially as set forth.

No. 41,606. Mail Bag. (*Sac postal.*)

Charles P. Tatro, Spokane Falls, Washington, U.S.A., 16th January, 1893; 18 years.

Claim.—1st. In a mail bag, the combination with the quadrangular jointed frame, of sliding and locking bars having angular projections, a bag and a locking device, substantially as specified. 2nd. The combination in a mail bag, of a quadrangular jointed frame, the adjustable or sliding bars provided with perforated protuberances headed in close relation to one of the joints of said frame, the device adapted to engage with said sliding bars, and a locking device applied to said protuberances, substantially as specified. 3rd. In a fastening device for mail bags, four side plates hinged together, as described, two of said plates being provided with openings and projecting pins on the other two plates adapted to pass through said openings, said pins having a circumferential groove near their ends, combined with two independent oppositely moving locking plates attached to the side plates (having the openings) by a sliding connection, said locking plates being provided with key shaped openings which register with the openings in the side plates, and through which the pins pass, substantially as and for the purpose specified. 4th. In a fastening device for mail bags, four side pieces hinged together, as described, two of said plates having openings through which pins on the other two plates pass when the bag is closed, said pins having each a circumferential groove near its end, combined with two independent oppositely moving locking plates attached to the side plates (having openings) by a sliding connection, said locking plates having key shaped openings which register with the openings in the side plates and through which the said pins pass, and overlapping each other, said lugs being provided with holes for the reception of the hasp of a lock, substantially as and for the purpose specified. 5th. In a fastening device for mail bags, attached thereto by a sliding connection, of levers pivoted on said side plates, and engaging the locking plates to operate them, substantially as specified. 6th. In a fastening device for mail bags, the combination with the side plates, and two locking plates attached thereto by a sliding connection, of crank levers pivoted on said side plates, the short arms of said levers engaging the locking plates to operate them, substantially as specified. 7th. In a fastening device for mail bags, the combination with the side plates, and two locking plates attached thereto by a sliding connection, each of said locking plates being provided near its inner end with a recess, of crank levers pivoted on said side plates, the short arms of said levers engaging the recesses in the locking plates, substantially as specified.

No. 41,607. Storage Battery. (*Accumulateur d'électricité.*)

George Arthur Washburn, Cleveland, Ohio, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In a storage battery cell, a porous pot containing active material, and a conductor in the pot constructed to yield under lateral pressure or expansion, substantially as described. 2nd. A storage battery cell containing a porous cup, conductors in said cell constructed to be more or less compressed by the expansion of the active material, and active material in said cup about said conductors, substantially as described. 3rd. In a storage battery, a porous cup, a compressible tube or tubes of conducting material in the cup, and active material about the tube or tubes, in combination with an electrode outside said cup, and solution within and without the cup, substantially as described. 4th. In a storage battery, a porous cup containing a hollow compressible conductor, in combination with an electrode outside of the cup formed of opposed conducting plates, and active material between said plates and in the porous cup, substantially as described. 5th. In a storage battery, an inner wall of conducting material apart from said cup, and active material between said wall and cup, in combination with a battery element centrally within said cup, substantially as described. 6th. In a storage battery, a battery cell having an outside containing cup of lead or like conducting material, a porous pot containing active material, and having conductors extending into the same, a partition between the said pot and said outside cup, and active material packed between said partition and outside cup, substantially as described. 7th. In a storage battery, a metallic containing cup, a porous pot in said cup, and a walled chamber about the sides of said cup for holding active material, in combination with active material in said chamber and said pot respectively, and conductors substan-

tially as described. 8th. A containing cup of lead or like material, and a porous pot set in said cup, in combination with a metallic division wall between said parts, said wall provided with openings for the free circulation of the solution, active material in the pot and between the cup and wall, and conductors reaching into the pot, substantially as described.

No. 41,608. Brake for Baby Carriages. (*Frein pour voitures d'enfant.*)

William Wilson, Middletown, New York, U. S. A., 16th January, 1893; 6 years.

Claim.—1st. The combination, on a brake for baby carriages, of the brake handle L, with its arms K, K, pivoted to clamps J, J, mounted upon carriage shafts J, J, said arms being provided with pivoted hooks m, m, pivoted brake levers C, C, and springs n, n, connecting said levers to the hooks m, m, substantially as shown and described. 2nd. In a baby carriage brake, the cross bar A, composed of two grooved and slotted members held adjustably together by main plate B, said bar being mounted on curved brackets G, G, brake levers C, C, pivoted to said cross bar, and means for actuating the brake levers, substantially as shown and described.

No. 41,609. Band Saw Attachment.

(*Appareil pour scies à contourner.*)

John H. Mead, Concord, New Hampshire, U. S. A., 16th January, 1893; 6 years.

Claim.—1st. In a guide for band saws, a bevelled rotative back rest, having its journal mounted at right angles with the saw and means, substantially as described, for adjusting said journal longitudinally within its bearing, and maintain continuous contact of the bevelled edge of said back rest with the back of said saw. 2nd. In a guide for band saws, a rotative back rest having a bevelled periphery and mounted at an angle with the saw, and means, substantially as set forth, whereby said bevelled periphery shall be kept in contact with the back of said saw and in a position at right angles therewith. 3rd. The combination, in a guide attachment for band saws, of wooden guides applied to the sides of a saw having their outside edges incline as shown, and a metal frame for holding the same having its sides inclined, and provided on its front with ears and screws threaded therein for the purpose of securing said wooden guides as required.

No. 41,610. Camera. (*Camera.*)

James T. Walker, Palmyra, New York, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In a camera, the combination of a plurality of exposing tablets arranged around and parallel with a common axis, and means for bringing said tablets within the field of the lens one after another, substantially as described. 2nd. In a camera, the combination of a plurality of exposing tablets arranged around and parallel with a common axis, means for bringing said tablets within the field of the lens one after another, and means for holding a photographic film upon the tablets, substantially as described. 3rd. In a camera having a plurality of exposing tablets arranged around and parallel with a common axis, and means for rotating said tablets to bring them within the field of the lens, the combination with each of said tablets, of a ledge, a spring, and a button for holding the plates in position, substantially as described. 4th. The combination of a dispensing spool for a strip of flexible photographic film, a rotary exposing tablet and a reel for storing the exposed film, substantially as described. 5th. In a camera having a film dispensing spool, and a storage reel, a rotaty exposing tablet provided with puncturing points at opposite edges, substantially as described. 6th. In a camera, the combination of a dispensing spool, a rotary exposing tablet and a take up storage reel, substantially as described. 7th. In a camera, the combination of a dispensing spool, a rotary tablet, a registering stop, and a take up storage reel, substantially as described. 8th. In a camera, the combination of a dispensing spool for flexible photographic film, a brake for said spool, a rotary tablet having puncturing points at the edge to prevent possibility of slip between it and the film strip and to register the length of the negative, a registering stop for the tablet and a take up storage reel.

No. 41,611. Multiple Saw Frame.

(*Chassis à scies multiples.*)

Antoine Jeansau, Paris (6 Bd de Strasbourg) France, 16th January, 1893; 6 years.

Resumé.—1° Une machine à scier les blocs de pierre telle qu'elle est décrite ci-dessus et expliquée par les dessins annexés. 2° Dans une telle machine, le déplacement horizontal du système sciant, afin de pouvoir produire des planches de pierre très minces. 3° Dans une telle machine l'excentricité des tambours porte-scies afin de produire un mouvement alternatif en haut et en bas des scies. 4° Dans une telle machine des cames de formes variées portant contre une des extrémités de l'arbre porte-scies pendant qu'un ressort de rappel est placé à l'autre extrémité, afin de pouvoir scier automatiquement des planches de pierre de profils variés, tel que ci-dessus décrit et pour les fins indiquées.

No. 41,612. Feed Water Heater.*(Réchauffeur de l'eau d'alimentation.)*

Nicholas Clute, Schenectady, New York, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In a feed water heater, the combination, with the heating chamber, of the steam-pipe having an opening at the side thereof for the steam, and the guard plate set over the steam-pipe and having its edge above and contiguous to the plane of the steam-pipe opening, substantially as described. 2nd. In a feed water heater, the combination, with the heating chamber, of the steam-pipe therein, the guard plate over the steam-pipe, and the oppositely disposed water, shedding plates, substantially as described, terminating over the guard plate, substantially as described. 3rd. In a feed water heater, the combination, with the heating chamber, of the steam-pipes and their guard plates, the water shedding plates set in oppositely disposed pairs intermediate in height to the several steam pipes, each pair of said plates being set to deliver the descending streams of water unto the next lower guard plate. 4th. In a feed water heater, the combination, with the heating chamber and means supplying steam thereto, of the water box having the longitudinal opening in the floor thereof, and the water distributing plate set below said opening, whereby the water is distributed to the opposite sides of the heating chamber, substantially as described. 5th. In a feed water heater, the combination, with the heating chamber and means supplying steam thereto, of the water box having a longitudinal opening in the floor thereof, a distributing plate, substantially as described, fixed below said opening, and the perforated plate between the water box and heating chamber, whereby the water is delivered to the opposite sides of the chamber in substantially equal quantities in numerous small streams, substantially as described. 6th. In a feed water heater, the combination, with the heating chamber and pipes, substantially as described supplying steam thereto, and means supplying water to the chamber, of the steam chambers at the sides of the heating chamber and extending to the lower part thereof, said steam chambers being connected below the normal water line with the heating chambers, substantially as described.

No. 41,613. Method of and Apparatus for Carbonating Beer. *(Méthode et appareil pour carbonater la bière.)*

The Universal Carbonating Company, assignee of John Baptist Stobaens, and Frederick Christian Wackenhuth, all of Newark, New Jersey, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The continuous method of preparing beer for the market, consisting in supplying ruh beer from a vessel to a carbonic acid charger under a substantially constant head, causing a current to flow from the vessel to the charger by allowing the beer to be discharged through a pipe against a fluid resistance smaller than the pressure due to the constant head, injecting carbonic acid into the current thus produced in the charger, and passing the mixed beer and carbonic acid through a separator and through a filter, and discharging the same, substantially as specified. 2nd. The continuous method of preparing beer for the market, consisting in supplying ruh beer from a vessel to a carbonic acid charger, under a substantially constant head, causing a current to flow from the vessel to the charger by allowing the beer to be discharged through a pipe against a fluid resistance smaller than the pressure due to the constant head, injecting into the current thus produced in the charger carbonic acid gas under constant pressure, so regulated as to prevent complete saturation under the conditions of pressure and temperature at the charger, and passing the mixed beer and carbonic acid on its way to the place of discharge through a separator, substantially as specified. 3rd. The continuous method of preparing beer for the market, consisting in supplying ruh beer from a vessel to a carbonic acid charger, under a substantially constant head, causing a current to flow from the vessel to the charger, by allowing the beer to be discharged through a pipe against a fluid resistance smaller than the pressure due to the constant head, injecting into the current thus produced in the charger, carbonic acid gas under constant pressure, so regulated as to prevent complete saturation under the conditions of pressure and temperature at the charger, and passing the mixed beer and carbonic acid through a pipe, and discharging the same, substantially as specified. 4th. The continuous method of preparing beer for the market, consisting in passing ruh beer from a vessel through a pipe, under substantially constant head, injecting carbonic acid gas into the beer in the pipe, passing the mixed beer and carbonic acid through a pipe against a resistance less than the pressure of the mixed beer and carbonic acid and discharging it, substantially as specified. 5th. In an apparatus for impregnating beer with carbonic acid, a vessel containing beer, a carbonic acid charger, a pipe or hose connecting the vessel with the charger, means substantially as described, for producing a substantially constant pressure at the charger, one or more nozzles for injecting carbonic acid into the current passing through the charger, a separator, a pipe or hose leading from the charger to the top of the separator, and an outlet at or near the bottom of the separator, connected with a pipe or hose for carrying off the charged beer, substantially as shown and described. 6th. In an apparatus for impregnating beer with carbonic acid, a vessel containing beer, a carbonic acid charger, a pipe or hose connecting the vessel with the charger, means substantially as described, for pro-

ducing a substantially constant pressure at the charger, a check valve at or near the charger, one or more nozzles for injecting carbonic acid into the current passing through the charger, a separating vessel, a pipe or hose leading from the charger to the top of the separator, a pipe or hose leading from near the bottom of the separator to a filter, and a pipe or hose leading from the filter to the place of discharge, substantially as shown and described. 7th. In an apparatus for impregnating beer with carbonic acid, a vessel containing beer, a carbonic acid charger, a pipe or hose connecting the vessel with the charger, means substantially as described, for producing a substantially constant fluid pressure at the charger, a check valve at or near the charger, one or more nozzles for injecting carbonic acid into the current passing through the charger, a separating vessel, a pipe or hose leading from the charger to the top of the separator, a pipe leading from the top of the separator back into the charger between the check valve and the injecting nozzles, and an outlet at or near the bottom of the separator for carrying off the charged beer, substantially as shown and described.

No. 41,614. Machine for Setting Type.*(Machine à composer.)*

Joshua Alexander Kay and Robert Alexander Vaughan Rae, both of Balwyn, Victoria, Australia, 16th January, 1893; 6 years.

Claim.—1st. In machinery for setting type, a travelling band brush G, or its equivalent, to convey ejected type, substantially as hereinbefore described. 2nd. In machinery for setting type, the combination, of a band brush G, or its equivalent, with a cabinet or type case A, having either fixed or interchangeable channels, substantially as hereinbefore described and as shown in the drawings. 3rd. In machinery for setting type, the combination, of a band brush G, or its equivalent, with race J, and throat K, substantially as hereinbefore described. 4th. In machinery for setting type, the combination, of levers D, and grooved pivot bar D', substantially as hereinbefore described. 5th. In machinery for setting type, the combination of race J, channel mouth piece J', throat or mouth K, of justifying stick, substantially as hereinbefore described. 6th. The general combination and arrangement of parts constituting my type-setting machine, substantially as hereinbefore described and as shown in my drawings.

No. 41,615. Apparatus for Printing Photographs.*(Appareil pour imprimer les photographes.)*

Richard John Wynkoop and John Moris Kemp, both of Patterson, New Jersey, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In an apparatus for photographic printing, the combination, with a casing and means contained therein for holding and actuating sensitized paper, of a cover constructed with a holder in which a negative may be removably secured, and also provided with a shutter for admitting the light to and excluding it from the negative holder, substantially as set forth. 2nd. In an apparatus for photographic printing, the combination, with a casing and means contained therein for holding and feeding sensitized paper, of a hinged negative holder, and a separately hinged shutter, substantially as set forth. 3rd. The combination, with a negative holder, of a paper feeder and a paper cutter, substantially as set forth. 4th. The combination, with a casing, a negative holder, and a shutter of a paper cutter, and a shaft from which the shutter and paper cutter are operated, substantially as set forth. 5th. The combination of a casing, a negative holder, a shutter on the latter, a paper feeder, a paper cutter, and a shaft from which the shutter, feeder and cutter are operated, substantially as set forth. 6th. The combination, with a casing, of a negative holder, a vignette holder on the latter, and a shutter on the vignette holder, substantially as set forth. 7th. The combination, with a casing, of a negative holder, a vignette holder on the latter, a shutter on the vignette holder, a spring arm for operating the shutter and a shaft adapted to vibrate the spring arm, substantially as set forth. 8th. The combination, with a casing, of a negative holder, a vignette holder on the latter, a shutter on the vignette holder, a spring arm for operating the shutter, a shaft having an arm, a slide adapted to be acted upon by said arm and said slide connected with the spring arm, substantially as set forth. 9th. The combination, with a negative holder, of a frame to which the latter is connected and having a slot therein adapted to receive a slide whereby light is excluded, when the negative holder is raised from the frame, substantially as set forth. 10th. The combination of a casing, a cover provided with an opening, a negative holder, a vignette holder, a cover or shutter, a spring on the cover, a projection on the cover, a spring arm, a spring actuated slide having a nose thereon and a crank having an extension thereon, substantially as set forth. 11th. In an apparatus for photographic printing, the combination, with a pad or support for supporting the film or sensitized paper, of a spring actuated bar for pressing the film or paper against the pad and a gripping device for feeding the paper and drawing it across and in close contact with the pad or support, substantially as set forth. 12th. In an apparatus for photographic printing, the combination of the casing, a frame, shaft, guide plates and a swinging paper feeder on the shaft, substantially as described and shown. 13th. In an apparatus for photographic printing, the combination of the casing of a frame, a shaft, U-shaped bar or cross pieces, a spring, pads, rods and cranks on the shaft, substantially as described and shown.

14th. In an apparatus for photographic printing, the combination of the casing, a frame, a swinging paper, feeding device and the curved plates $p p^1$, for guiding the paper, substantially as described and shown. 15th. In an apparatus for photographic printing, the combination of the casing, frame thereon, a pad in said frame, a shaft, spring m on the same adapted to act on the pad, a negative holder and a paper feeding device, substantially as described and shown. 16th. In an apparatus for photographic printing, the combination of the casing, the frame H, guides for a paper sheet, guides k and a swinging paper feeder on which the guides k , k^1 act, substantially as described and shown. 17th. In an apparatus for photographic printing, the combination of the casing, the frame H therein, a paper feeder, a shaft from which said paper feeder is operated, the guide plates and a cutter below said plates and operated from the shaft, substantially as described and shown. 18th. In an apparatus for photographic printing, the combination of the casing A, the frame H therein, the guide plates P, P^1 , a swinging paper feeder operated from the shaft G, a fixed knife below the plates P P^1 operated from the shaft G, substantially as described and shown. 19th. In an apparatus for photographic printing, the combination of the casing A, a negative holder, a paper feeder, and a paper cutter operated from the same shaft, a drawer in said casing and a slide on said drawer, substantially as described and shown. 20th. In a photographic apparatus, the combination with a negative holder and a support for the film or sensitized paper, of a gripping device for feeding the paper and another device for holding the paper while the feeding gripping device is being moved to take a fresh grip, substantially as set forth. 21st. In a photographic apparatus, a cutter in combination with means for severing the sensitized paper after the operation of printing, substantially as set forth. 22nd. In a photographic apparatus, the combination with a negative holder and support for the film or sensitized paper, of a cutter for cutting the sensitized paper after it has been printed, and a device for gripping and holding the paper while it is being cut, substantially as set forth. 23rd. In a photographic apparatus, the combination with a cutter, of a removable box for receiving the severed sheets of sensitized paper, the box being provided with a cover to exclude the light from its contents, substantially as set forth. 24th. In a photographic apparatus, the combination with a negative holder shutter and means of supporting sensitized paper while being printed, of means for feeding and holding the sensitized paper and a cutter for severing it into sheets after it has been printed, substantially as set forth. 25th. In a photographic apparatus, the combination of the following instrumentalities, to wit: a negative holder, a support for the film or sensitized paper, and means for automatically feeding, holding and cutting the sensitized paper, substantially as set forth.

No. 41,616. Apparatus for Operating the Stocks of Percussive Drills. (*Appareil pour actionner les boîtes à forêt.*)

William A'Court Granville Birkin, The Park, Nottingham, England, 16th January, 1893; 6 years.

Claim.—1st. In a rock drill, the combination of a jacket A, a solenoid B, magnetic disc D, plunger G, tool holder H, spring F, as set forth, and substantially as shown on the annexed drawings. 2nd. In a rock drill, the combination with a jacket A, solenoid B, and magnetic disc C, the automatic make and break appliance P, N, R, as set forth and shown on the annexed drawings. 3rd. In a rock drill, the combination of solenoids B, B^1 , B^{11} , plunger E, magnetic disc D, tool holder H, operated as set forth.

No. 41,617. Dynamo Electric Machine.

(*Machine dynamo-électrique.*)

William Morris Mordey, Victoria Works, Lambeth, Surrey, England, 16th January, 1893; 6 years.

Claim.—1st. In a dynamo electric machine of the type herein referred to, a laterally detachable armature coil, such as 2, a pair of bolts between which the outer end only of said coil is clamped, and bolts extending through said plates and coil, projecting laterally from one side thereof, and adapted to be secured to an armature supporting frame, substantially as herein described for the purpose specified. 2nd. In a dynamo electric machine of the type herein referred to, an armature comprising a supporting frame, a series of laterally detachable coils, plates between which said coils are clamped at their outer ends only, and horizontal bolts connecting said plates and coils, and having extensions adapted to be secured to said frame, some of said plates being formed with holes for the passage of the ends of the corresponding coil, substantially as herein described. 3rd. In a dynamo electric machine, an armature comprising a supporting frame, and a series of laterally detachable and radially adjustable armature coils secured near their outer ends to said frame, substantially as herein described. 4th. In a dynamo electric machine, an armature comprising a supporting frame having an inwardly projecting flange, a series of armature coils laterally attached to and radially adjustable on said flange, and a series of screws arranged between said frame and the outer ends of said coils, and each adapted to adjust the radial position of the corresponding coil, substantially as herein described. 5th. In a dynamo electric machine, an armature comprising a stationary non-magnetic supporting ring having an inwardly projecting flange, a series of armature coils, a

series of plates arranged in pairs between each of which one of said armature coils is clamped, one of the plates of each pair being formed with holes for the passage of the ends of the corresponding coil, and the other being formed with outwardly extending projections, bolts extending laterally from said coils, and whereby said coils are clamped at their outer ends between said plates, and secured to the side of said flange, and a series of adjusting screws, each having its shank extending through a screw threaded hole in said ring, and its head engaged with said projections, substantially as herein described for the purpose specified. 6th. In a dynamo electric machine, the combination of a rotary field magnet having a single winding, and two series of radial curved polar extensions 25 of unlike polarity, and a stationary armature comprising a non-magnetic supporting frame having an inwardly projecting flange, and a series of coils attached by their outer ends to one side of said flange and extending into the space between the series of polar extensions, substantially as herein described. 7th. In a dynamo electric machine, the combination of a rotary field magnet, having two series of magnetic poles and a stationary armature comprising a non-magnetic supporting ring, a series of armature coils and plates arranged in pairs, between each of which one of said coils is clamped near its outer end, one of the plates of each pair being formed with holes for the passage of the ends of the corresponding coil, substantially as herein described. 8th. In a dynamo electric machine, the combination of a rotary field magnet, having two series of magnetic poles, a non-magnetic supporting frame and an annular series of laterally detachable and rapidly adjustable armature coils secured near their outer ends to said frame and extending between the two series of magnetic poles, substantially as herein described. 9th. In a dynamo electric machine, the combination of a rotary field magnet, and a stationary armature comprising coils connected in series, one of said coils having its ends in connection with two insulated terminals, substantially as herein described for the purpose specified. 10th. In a dynamo electric machine, the combination of a stationary armature comprising an annular series of coils, and a rotary field magnet having a single winding, said magnet comprising a central portion or core extending axially through said armature, and dish end portions 24, each formed with a series of curved polar extensions 25, the air spaces between each series, of which is closed at the outer sides for part of their length by a web or shielding piece 26, having a number of lateral openings therein, substantially as herein described for the purpose specified. 11th. In a dynamo electric machine or motor, the combination with a rotary field magnet, of a stationary armature comprising two or more series or groups of coils, each arranged in a vertical plane, the coils in one of said series or groups being displaced in a circular direction relatively to those in the other group or groups, substantially as herein described for the purpose specified. 12th. In a dynamo electric machine, an armature comprising an annular series of coils divided into two or more groups arranged in the same vertical plane, the coils in each of said groups being displaced in a circular direction relatively to the coils in the other group or groups, substantially as herein described for the purpose specified. 13th. A multiple phase dynamo electric machine, comprising a rotary field magnet, having a single winding and two series of magnetic poles, and a stationary armature comprising coils secured at their outer ends to an annular non-magnetic support, and arranged in two or more groups located each in a vertical plane between the said two series of magnetic poles, the coils in each of said groups being displaced in a circular direction relatively to the coils in the other group or groups, substantially as herein described for the purpose specified.

No. 41,618. Electric Transformer.

(*Transformateur électrique.*)

William Morris Mordey, Victoria Works, Lambeth, Surrey, England, 16th January, 1893; 6 years.

Claim.—1st. In a transformer, the combination, with primary and secondary coils having an elongated form with a central space between their long sides, of an iron sheath built up of thin sheet metal, and comprising perforated plates arranged to surround said coils, rectangular plates arranged to alternate with said perforated plates and to extend through said coils, and channel shaped plates arranged between said perforated plates in the plane of said rectangular plates, and to partly surround said coils, substantially as herein described for the purpose specified. 2nd. In a transformer, the combination, with primary and secondary coils, having an elongated form with a central space between their long sides, of an iron sheath built up of thin sheet metal and comprising perforated plates arranged to surround said coils, rectangular plates arranged to alternate with said perforated plates and to extend through said coils, channel shaped plates arranged between said perforated plates in the plane of said rectangular plates, and to partly surround said coils and plates arranged within the coils between said rectangular plates and in the plane of the perforated plates, substantially as herein described. 3rd. In a transformer the combination, with primary and secondary coils, and a link shaped bobbin A therefor, of a laminated iron sheath comprising rectangular perforated iron stampings A^1 , B^1 , C^1 , D^1 , rectangular iron stampings E, F, G, H, I^1 shaped, iron stampings H^1 , A^1 , D^1 , G^1 and E^1 , B^1 , C^1 , F^1 , and square iron stampings a , b , c , d , said iron stampings being made of the proportions mentioned and arranged with reference to each other and said coils, substantially

in the manner and for the purpose specified. 4th. In a transformer, the combination of primary and secondary coils, a laminated iron sheath surrounding said coils, fixed terminals in connection with the ends of said primary coils, a double pole switch comprising a cam shaped insulating block R, with external handle R', and spring contacts q, q' , each arranged between one of said fixed terminals and the cam shaped insulating block, but normally out of contact with the former, substantially as herein described and for the purpose specified. 5th. In a transformer, the combination of primary and secondary coils, a laminated iron sheath surrounding said coils, fixed terminals in connection with the ends of said primary coil, a double pole switch comprising a cam shaped insulating block R, with external handle R', spring contacts q, q' , each arranged between one of said fixed terminals and the cam shaped insulating block, but normally out of contact with the former, and high tension fuses each comprising a fusible conductor embedded in a non-conducting substance and connected to one of said spring contacts, substantially as herein described. 6th. In a transformer, the combination of primary and secondary coils, a laminated iron sheath surrounding said coils, a terminal slab of insulating material whereon the terminals of said coils are mounted, a switch for controlling the circuit of the primary coil, and an outer iron casing made in two longitudinal portions separated by insulating material, and having at one end a door by which access can be gained to said terminal slab, substantially as herein described.

No. 41,619. Mounting for the Motors of Electric Cars.
(*Monture pour moteurs de char électrique.*)

Sidney Howe Short, Cleveland, Ohio, U.S.A., 16th January, 1893;
6 years.

Claim.—1st. The combination, with a car, of a propelling motor comprising an axially placed and directly connected armature and field magnets provided with bearings on the car axle, and supports for sustaining the weight of the field magnets at points in two vertical planes parallel with the said axle, substantially as described. 2nd. The combination, with a car, of a propelling motor comprising an axially placed and directly connected armature, and field magnets provided with cushioned bearings on the car axles and at points in two vertical planes parallel with the said axle, substantially as described. 3rd. The combination, with a car, of a propelling motor comprising an axially placed and directly connected armature, and field magnets provided with bearings on the car axle and at points in two vertical planes parallel with the said axle, one or more of said bearings being cushioned, substantially as described. 4th. The combination, with a car, of an insulated propelling motor comprising an axially placed and directly connected armature, and field magnets provided with bearings on the car axle, and supports for sustaining the weight of the field magnets at points in two vertical planes parallel with the said axle, substantially as described. 5th. The combination, with a car, of an insulated propelling motor comprising an axially placed and directly connected armature, and field magnets provided with bearings on the car axle, and at points in two vertical planes parallel with the said axle, one or more of said bearings being cushioned, substantially as described. 6th. The combination, with a car, of a propelling motor comprising an axially placed and directly connected armature, and field magnets provided with bearings on the car axle, and with supports on opposite sides of said axle for sustaining the weight of the field magnets, substantially as described. 7th. The combination, with a car, of a propelling motor comprising an axially placed and directly connected armature, and field magnets provided with cushioned bearings on the car axle, and on opposite sides of said axle, substantially as described. 8th. The combination, with a car, of a propelling motor comprising an axially placed and directly connected armature and field magnets provided with bearings on the car axle, and on opposite sides of said axle, one or more of said bearings being cushioned, substantially as described. 9th. The combination with a car, of an insulated propelling motor, comprising an axially placed and directly connected armature, and field magnets provided with bearings on the car axle and with supports on opposite sides of said axle, for sustaining the weight of the field magnets, substantially as described. 10th. The combination with a car, of an insulated propelling motor, comprising an axially placed and directly connected armature, and field magnets provided with bearings on the car axle and on opposite sides of the same, one or more of said bearings being cushioned, substantially as described. 11th. The combination with a car, of a propelling motor comprising an axially placed and directly connected armature, and field magnets provided with bearings on the car axle, and with supports on the truck or frame below the car body on opposite sides of said axle for sustaining the weight of the field magnets, substantially as described. 12th. The combination with a car, of a propelling motor, comprising an axially placed and directly connected armature, and field magnets provided with cushioned bearings on the car axle and on the truck frame, or a frame in general under the car body on opposite sides of said axle, substantially as described. 13th. The combination with a car, of a propelling motor provided with bearings on the car axle and with supports on opposite sides thereof for sustaining the weight of the field magnets and comprising an axially placed and directly connected armature, having its axis of rotation fixed with relation to the field magnets, substantially as described. 14th. The combination with a car, of a propelling motor provided

with cushioned bearings on the car axle and on opposite sides thereof, and comprising an axially placed and directly connected armature, having its axis of rotation fixed with relation to the field magnets, substantially as described. 15th. The combination with a car, of a motor provided with bearings on the car axle and with supports on opposite sides thereof for sustaining the weight of the field magnets, and comprising an axially placed and directly connected armature, journalled in bearings in the frame of said motor, substantially as described. 16th. The combination with a car, of a propelling motor having bearings on the car axle and with supports on opposite sides thereof, for sustaining the weight of the field magnets, and comprising an axially placed and directly connected armature, and field magnets arranged symmetrically with reference to the car axle, substantially as described. 17th. The combination with the car, of a propelling motor comprising an axially placed and directly connected armature and horizontally arranged field magnets provided with bearings on the car axle and with supports on opposite sides thereof, for sustaining the weight of the field magnets, substantially as described. 18th. The combination with a car, of a propelling motor provided with bearings on the car axle, and with supports on opposite sides thereof, for sustaining the weight of the field magnets, and comprising an axially placed and directly connected armature, and field magnets placed above (or not materially below) the lowest point of the armature, substantially as described. 19th. The combination, with a car, of a propelling motor provided with bearings on the car axle, and with supports at points on opposite sides of said axle for sustaining the weight of the field magnets, and comprising an axially placed and directly connected armature, and field magnets at the sides of the armature parallel with the said axle, substantially as described. 20th. The combination, with a car, of a propelling motor provided with bearings on the car axle, and with supports at points on opposite sides of the same for sustaining the weight of the field magnets, and comprising an axially placed and directly connected armature, and field magnets projecting at the sides of said armature from yokes perforated for the passage of said axle, substantially as described. 21st. The combination, with a car, of a propelling motor provided with bearings on the car axle, and with supports at points on the opposite sides of same for sustaining the weight of the field magnets, and comprising an axially placed and directly connected armature, and multipolar field magnets, substantially as described. 22nd. The combination, with a car, of a propelling motor provided with bearings on the car axle, and with supports on opposite sides of the same for sustaining the weight of the field magnets, and comprising an axially placed and directly connected armature and multipolar field magnets arranged with the magnets of the two lowermost poles, equidistant from the lowest point of the armature in front and rear of the same, substantially as described. 23rd. The combination, with a car, of a propelling motor provided with the cushioned bearings on the car axle and on opposite sides thereof, and comprising an armature mounted on a hollow shaft surrounding the car axle, and having a direct driving connection therewith and journalled in the motor, substantially as described.

No. 41,620. Car Propelled by Electricity.

(*Appareil de propulsion des chars par l'électricité.*)

Sidney Howe Short, Cleveland, Ohio, U.S.A., 16th January, 1893;
6 years.

Claim.—1st. The combination, with a car, of a propelling motor comprising an armature, mounted on or axially placed with reference to a driving axle, and connected directly with said axle, and field magnets mounted on side bars connecting the pedestals and journal boxes of the car, and upheld by said journal boxes independently of the car body and the main car springs, substantially as described. 2nd. The combination, with a car, of a propelling motor, comprising an armature, mounted on or axially placed with reference to a driving axle, and directly connected with said axle and field magnets, spring mounted on a frame below the car body, substantially as described. 3rd. The combination, with a car, of a propelling motor, comprising an armature mounted on or axially placed with reference to a driving axle, and directly connected with said axle, and field magnets spring mounted on side bars, connecting the pedestals and journal boxes of the car axle below the car body, substantially as described. 4th. The combination, with a car, of a propelling motor, comprising an armature mounted on or axially placed with reference to a driving axle, and directly connected with said axle, and field magnets spring mounted on a truck frame upheld by the journal boxes of the car, independently of the car body and the main car springs, substantially as described. 5th. The combination, with a car, of a propelling motor, comprising an armature upheld by springs or buffers, independently of the field magnets, said armature being mounted on or axially placed with reference to a driving axle, and connected directly with said axle, substantially as described. 6th. An electric motor, having the armature upheld by springs or buffers, independently of the field magnets, substantially as described. 7th. In an electric motor, having the armature and field magnets upheld independently on springs or buffers, substantially as described. 8th. The combination, with a car, of a propelling motor, having its armature and field magnets upheld independently on springs or buffers, the said armature being mounted on or axially placed with reference to a car axle, and directly connected with said axle, substantially as described. 9th. The combi-

nation, with a car, of a propelling motor whose field magnets are movable transversely to the armature axis, and whose armature is mounted on or axially placed with reference to a car axle, and directly connected with said axle, and means, such as a collar working in grooved or forked ears, whereby transverse movements are permitted and longitudinal movements prevented, substantially as described. 10th. The combination, with a car, of a propelling motor whose field magnets are movable transversely to the armature axis and whose armature is mounted on or axially placed with reference to a car axle, and is directly connected with said axle, and means, such as an adjustable collar, working in grooved or forked ears, whereby the said field magnets may be adjusted relatively to the armature while transverse movements are permitted, substantially as described. 11th. The combination, with a car, of a propelling motor insulated from the wheel base by way of its mounting and driving connection, and comprising field magnets, and armature movable relatively to each other transversely to the armature axis, said armature being mounted on or axially placed with reference to a driving axle, and directly connected with said axle, substantially as described. 12th. The combination, with a car, of an armature axially and elastically mounted on and insulated from the car axle, and having a direct insulating connection with said axle for driving the same, and field magnets independently mounted, substantially as described. 13th. The combination, with a car, of a propelling motor comprising a spring held armature axially mounted on a driving axle, and connected directly with said axle, and field magnets mounted on a truck frame or frame supported by the ordinary journals of the car, substantially as described. 14th. The combination, with a car, of a propelling motor comprising a spring held armature axially mounted on a driving axle, and connected directly with said axle, and field magnets mounted on a frame under the car body, substantially as described. 15th. The combination, with a car, of a propelling motor comprising a spring held armature mounted on or axially placed with reference to a driving axle, and directly connected with said axle, and field magnets spring mounted on a frame below the car body, substantially as described. 16th. The combination, with a car, of a propelling motor comprising an armature mounted on or axially placed with reference to a driving axle, and connected directly with said axle, and field magnets mounted on a frame under the car body, and a collar working in grooved ears for preventing motion of said field magnets lengthwise of the armature axis, substantially as described. 17th. The combination, with a car, of a propelling motor comprising an armature mounted on or axially placed with reference to a driving axle, and connected directly with said axle, and field magnets mounted on a truck frame, or frame supported by the ordinary journals of the car, and a collar working in grooved ears for preventing motion of said field magnets lengthwise of the armature axis, substantially as described. 18th. The combination, with a car, of a propelling motor comprising an armature mounted on or axially placed with reference to a driving axle, and connected directly with said axle, field magnets mounted on a truck frame or frame supported by the ordinary journals of the car, and means, such as an adjustable collar worked in grooved ears, whereby the said field magnets may be adjusted lengthwise of the armature axis, substantially as described. 19th. The combination, with a car, of a propelling motor comprising an armature mounted on or axially placed with reference to a driving axle, and connected directly with said axle, and field magnets mounted on a frame under the car body, and means, such as an adjustable collar working in grooved ears, whereby said field magnets may be adjusted lengthwise of the armature axis, substantially as described. 20th. The combination, with an armature and field magnets independently mounted on springs or buffers, of means, such as a collar working in grooved ears, whereby the transverse movements of the field magnets are permitted, and their movements longitudinally of the armature axis is prevented, substantially as described. 21st. The combination, with an armature and field magnets independently mounted on springs, of means, such as an adjustable collar working in grooved ears, whereby said field magnets may be adjusted lengthwise of the armature axis, and transverse movements of said field magnets at the same time permitted, substantially as described. 22nd. The combination, with a car, of a propelling motor, comprising an armature axially mounted on a driving axle, and connected directly with said axle, and field magnets placed at the sides of the armature, and mounted on a truck frame or frame supported by the ordinary journals of the car, substantially as described. 23rd. The combination, with a car, of a propelling motor comprising an armature axially mounted on a driving axle, and connected directly with said axle, and multipolar field magnets mounted on a truck frame or frame supported by ordinary journals of the car, substantially as described. 24th. The combination, with a car, of a propelling motor, comprising an armature axially mounted on a driving axle, and connected directly with said axle, and multipolar field magnets placed at the sides of said armature, and mounted on a truck frame or frame supported by the ordinary journals of the car, substantially as described. 25th. The combination, with a car, of a propelling motor comprising an armature axially mounted on a driving axle, and connected directly with said axle, and multipolar field magnets arranged with the magnets of the lowermost pair of poles equidistant from the lowest point of the armature, in front and rear of said point, and mounted on a truck frame or frame upheld by the ordinary journals of the car, substantially as described. 26th. The combination, with a car, of a propelling motor comprising

an armature axially mounted on a driving axle, and connected directly with said axle, and field magnets projecting from yokes at the sides of the armature, which yokes are perforated for the passage of the car axle, and mounted on a truck frame or frame supported by the ordinary journals of the car, substantially as described. 27th. The combination, with a car, of a propelling motor comprising an armature, mounted on or axially placed with reference to a driving axle, and connected directly with said axle, field magnets mounted on a truck frame or frame supported by the ordinary journals of the car, and a commutator and commutator brushes mounted on the car axle by a collar, substantially as described. 28th. The combination, with a car, of a propelling motor comprising an armature mounted on or axially placed with reference to a driving axle, and connected directly with said axle, and field magnets mounted on cross bars on opposite sides of said axle, said cross bars being supported at the ends by side bars upheld by the journal boxes, independently of the car body and the main frame car spring, substantially as described. 29th. The combination, with a car, of a propelling motor comprising an armature, mounted on or axially placed with reference to a driving axle, and connected directly with said axle, and field magnets spring mounted on cross bars on opposite sides of said axle, said cross bars being supported at the ends by side bars upheld by the journal boxes, independently of the car body and the main car springs, substantially as described. 30th. In a car propelled by electricity, a truck comprising side bars, which are upheld by the journal boxes, independently of the car body and the main car springs which extend beyond the car wheels at each end of the truck, and which are provided with motor holding cross bars on opposite sides of the corresponding car axle, substantially as described.

No. 41,621. Method of Feeding Boilers.

(Méthode d'alimentation des chaudières.)

Nicholas Clute, Schenectady, New York, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The herein described method of maintaining the water level in boilers by regulated pumping, consisting in pumping to normally over supply the boiler, draining the over supply from the boiler at the water line into a regulator having a continuously open discharge outlet of less capacity than the inlet thereto, and operating the regulator float of the pump by the variable accumulation of said drainage water. 2nd. The herein described method of feeding boilers by regulated pumping, consisting in pumping to normally over supply the boiler, draining the overflow from the boiler at the water line into a regulator having a continuously open discharge outlet of less capacity than the inlet thereto, operating the regulator float of the pump by the variable accumulation of the drainage water and returning said drainage water to the pump supply whereby the water level is maintained and the drainage water returned to the boiler with a minimum pumping. 3rd. The herein described method of regulating the water supply of boilers fed by steam actuated pumps, consisting in draining the over supply from the boiler at the water line into a float provided regulator having a continuously open discharge outlet of less capacity than the inlet thereto, and controlling the pump actuating supply from the regulator float.

No. 41,622. Vehicle Spring. (Resort de voiture.)

Nelson A. Newton, Kalamazoo, Michigan, U.S.A., 16th January, 1893; 6 years.

Claim.—A torsion spring for a wagon body, consisting of a long outer part g attached to the axle, an inner horizontal part g^2 , attached to the said wagon body, but having its outer portion free to turn for torsion, and an intermediate doubly bent part g^1 , the said parts g^1 and g^2 , forming three torsion bars arranged transversely with respect to the length of the wagon, and operating substantially as and for the purpose as set forth.

No. 41,623. Electric Railway.

(Chemin de fer électrique.)

James Ferguson Munzie, Brooklyn, New York, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In an electric railway, the combination with the feeding conductor, of a trolley track consisting of a series of sections suspended in an upright position and adapted to swing downwardly, substantially as described. 2nd. In an electric railway, the combination with the feeding conductor, of a trolley track consisting of a series of sections suspended in an upright position and adapted to swing downwardly, said sections being normally out of conductive connection with the feeding conductor, substantially as described. 3rd. In an electric railway, the combination with the feeding conductor, of a trolley track consisting of a series of sections suspended in an upright position and adapted to swing downwardly, said sections being normally out of conductive connection with the feeding conductor and grounded, substantially as described. 4th. In an electric railway, the combination with the main feeding conductor and its branch conductors, of contact plates connected to the terminals of the branch conductors, and a trolley track consisting of a series of sections suspended in an upright position out of conductive contact with said contact plates, and adapted when swung

downwardly to complete connection with said contact plates, substantially as described. 5th. In an electric railway, a car provided with a series of trolleys mounted upon its upper portion, the terminal members of the series being of insulating material and the intermediate ones of conductive material, substantially as described.

No. 41,624. Electric Railway.

(*Chemin de fer électrique.*)

James Ferguson Munsie, Brooklyn, New York, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In an electric railway, the combination with the supply or feeding conductor, of a contact normally out of electrical connection with said feeding conductor, and means mounted upon the car for bringing said contact into electrical connection with the feeding conductor, said means being located in the motor circuit of the car, substantially as described. 2nd. An electric railway comprising a feeding conductor, a series of branch conductors extending therefrom and separated by intervening spaces, contacts normally out of electrical connection with said branch conductors, and a bar mounted upon the car and in the motor circuit of the car, said bar being adapted to bring said contacts successively into electrical connection with the branch conductor, substantially as described. 3rd. An electric railway comprising a feeding conductor, a series of branch conductors extending therefrom and separated by intervening spaces, contacts normally out of electrical connection with said branch conductors, and a bar mounted upon the car and in the motor circuit of the car, said bar being adapted to bring said contacts successively into electrical connection with the branch conductors and being of a length greater than the distance between adjacent contacts, substantially as described. 4th. An electric railway comprising a conduit, a feeding conductor located within said conduit, a series of posts located at distances apart from each other along the line, branch conductors located within said posts, contacts mounted upon the posts and normally out of electrical connection with the branch conductors, and means, substantially as described, mounted upon the car for bringing said contact successively into electrical connection with the branch conductors, substantially as described. 5th. An electric railway comprising a conduit, a feeding conductor located within said conduit, a series of posts located at distances apart from each other along the line, branch conductors located within said posts, terminal plates for said branch conductors, insulators upon which said terminal plates are mounted, contact rollers normally out of electrical connection with said terminal plates, and means, substantially as described, mounted upon the car for bringing said contact rollers successively into electrical connection with said terminal plates, substantially as described.

No. 41,625. Brick Machine. (*Machine à brique.*)

Bruce Clark White and James Angus Boyd, both of Chicago, Illinois, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The combination with a mould, and plungers working in, of means for actuating the plungers, embracing toggle arms connected with the opposite plungers, a crank shaft, a beam connected with the said crank shaft and with the middle joint of the toggle arms, and a shifting fulcrum for the beam, comprising a pivotally supported arm upon the frame, provided with a plurality of pins or projections upon the beam, severally engaging the recesses or notches of said arm, substantially as described. 2nd. The combination with a mould, of upper and lower plungers sliding therein, and means for actuating the lower plunger, having elastic or yielding connection therewith, permitting downward movement of said lower plunger relatively to the actuating devices, and stops or shoulders limiting such downward movement or yielding of said plunger with relation to said actuating device, substantially as described. 3rd. The combination with a mould, of upper and lower plungers sliding therein, means for actuating the lower plunger, having yielding connection therewith, stops or shoulders limiting the downward movement or yielding of the plunger, and an adjustable stop limiting the upward movement of the plunger relatively to the parts which actuate the same, substantially as described. 4th. The combination with a mould, of upper and lower plungers sliding therein, means for actuating the lower plunger, having yielding connection therewith, an adjustable stop limiting the upward movement of the lower plunger relatively to the actuating devices, and a scale or index marked to indicate the depth of mould as determined by the position of said adjustable stop, substantially as described. 5th. The combination with a mould and lower cross head, of a lower plunger which is movable vertically with relation to the cross head, and a weighted lever pivoted upon the cross head and acting upon the plunger, said lever being provided with a vertically adjustable stop, limiting the upward movement of the lever by contact with an adjacent part of the machine frame, whereby the lower plunger may be brought flush with the top of the mould, substantially as described. 6th. The combination with a mould, upper and lower plungers, toggle arms connected with both plungers, and movable vertically at both ends with the plungers, a toggle operating beam fulcrumed between its ends and connected with the central joint of the toggle, and a stationary stop or stops located in position to engage the upper plunger and limit the descent of the same, and thereby operating, to determine the vertical position of

the plunger within the mould at the time of greatest compression, substantially as described.

No. 41,626. Wood Working Machine.

(*Machine à travailler le bois.*)

Frank Seward Madison, Grand Rapids, William E. Hoyt, Greenville, and Ezra Jones Ware, Grand Rapids, all in Michigan, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In a wood working machine, the combination of a vertical pendent head, a face plate attached to said head, a yoke pivoted to said face plate, an adjusting screw attached to said face plate and head, of vertically adjusting said yoke, a sleeve journalled to said yoke, and a cutter spindle secured to said sleeve adapted to rotate therewith. 2nd. In a wood working machine, the combination of a vertical pendent hollow head, provided with a vertical opening, as 9, a face plate provided with a stud, as G¹, adapted to move vertically in said opening, a yoke pivoted to said face plate, a screw attached to said head and yoke for vertically adjusting said yoke, a sleeve journalled to said yoke, a cutting spindle arranged within said sleeve and adapted to rotate therewith, and a latch for adjusting the vertical inclination of said yoke. 3rd. In a wood working machine, the combination of a vertical pendent hollow head, provided with a vertical opening, as 9 a face plate, as G, having a periphery, provided with notches, and a stud, as G¹, adapted to said vertical opening, a yoke having a seat engaging with said face plate, a bolt for securing said face plate and yoke together, and on which the yoke adapted to turn, a vertical adjusting screw is arranged within said hollow head, provided with a wheel for operating the same, attached to said head and face plate for vertically adjusting said yoke, a sleeve journalled to said yoke, a cutting spindle arranged within said sleeve and adapted to rotate therewith, a latch secured to said yoke engaging said notches on the face plate, a collar, as R, provided with a rod, as T, and a lever, as U, and a set collar as S, arranged, substantially as described and for the purpose set forth. 4th. In a universal wood working machine, the combination of a vertical pendent hollow head, a face plate secured to said head, a screw for vertically adjusting said face plate arranged within said head, a yoke having a seat provided with a curved tongue adapted to a corresponding groove in said face plate, a bolt passing through said yoke and face plate and head, whereby said face plate and yoke are secured together, and to said head, a sleeve journalled to said yoke and a cutter spindle secured in said sleeve and adapted to rotate therewith, substantially as described.

No. 41,627. Apparatus for Propelling and Steering Vessels. (*Appareil pour propulser et gouverner les vaisseaux.*)

John Isaac Thornycroft, assignee of Sidney Walker Barnaby, both of Chiswick Mall, Middlesex, England, 16th January, 1893; 6 years.

Claim.—1st. In propelling and steering apparatus for navigable vessels, the combination, with a screw propeller and a fixed tube within which said propeller can rotate, of supplementary screw blades mounted to rotate with said screw propeller, and arranged outside of and in front of said tube, substantially as herein described for the purpose specified. 2nd. In propelling and steering apparatus for navigable vessels, the combination, of a screw propeller, a fixed tube within which said screw propeller can rotate, supplementary screw blades mounted to rotate with said screw propeller, and arranged outside of and in front of said tube, and inwardly projecting straight guide plates or blades fixed to the forward end of said tube, substantially as herein described for the purposes specified. 3rd. In propelling and steering apparatus for navigable vessels, the combination, with a "Thornycroft propeller" comprising a screw propeller, a rearward body of the kind herein described, arranged in line with and behind said screw propeller, and provided with guide plates or blades, and a fixed tube surrounding said screw propeller and rearward body, of supplementary screw blades mounted to rotate with said screw propeller, and arranged outside of and at the forward end of said tube, substantially as herein described for the purpose specified. 4th. In propelling and steering apparatus for navigable vessels, the combination, with a Thornycroft propeller, comprising a screw propeller, a rearward body, and a tube provided at its rear end with guide plates or blades, and within which said screw propeller can rotate, of supplementary screw blades carried by a separate boss fixed on the shaft carrying said screw propeller, and arranged outside and in front of said tube, and guide plates or blades fixed to the forward end of said tube, substantially as herein described for the purposes specified.

No. 41,628. Sewerage Apparatus. (*Appareil d'égoûts.*)

Walter Scott West, Brooklyn, New York, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In a pumping station for sewage, the combination, with the chimney and its surrounding ventilating shaft communicating with said chimney, of the underground pumping chamber, its descending fresh air ducts, boilers, pumps and screen floor, the sewage inlet pipes above said screen floor, and the ventilating pipes extending from said inlet pipes to the ventilating shaft around the chimney, substantially as specified. 2nd. In a pumping station for sewage, the combination, with the chimneys, boilers and pumps,

and the underground pumping apartment having the descending fresh air inlet, of the main ventilating shaft surrounding the chimneys and communicating therewith above, and with the underground apartment below, the screening floor, the sewage inlet pipes above the same, their adjustable valve gates, and their ventilating pipes leading to the ventilating shaft, substantially as specified. 3rd. The combination, with the sewage pipes leading thereto, of a deep underground receiving apartment, its exterior descending air chutes, and central ventilating air shaft having inlet openings at its base, the chimney inclosed in said air shaft and communicating therewith, the boilers and pumps, the valved sewage inlet pipes, and their ventilating pipes communicating with the ventilating shaft, and the screening floor below the sewage inlet pipes, and separating the same from the lower or trough portion of the underground apartment, from which the suction pipe ascends to the pumps, substantially as described.

No. 41,629. Magnetic Pen Holder.

(*Porte plume magnétique.*)

Fred. H. Brown, Chicago, Illinois, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The hollow magnetized pen shaft, combined with a top or end B, of different material from the staff. 2nd. The hollow pen holder, having two magnetic poles of dissimilar polarity, one of these poles or ends being fitted to receive a pen, and the other being adapted to receive an artificial feather, substantially as described. 3rd. The combination of a writing pen, a hollow magnetized pen staff, and an artificial feather, substantially as described. 4th. As a new article of manufacture, a pen holder comprising essentially a permanently magnetized tube or staff, having its opposite ends of dissimilar polarity, and one of said ends adapted to receive an ordinary writing pen, and a top or end B, secured in the other end of said magnetized tube or staff, as set forth. 5th. As a new article of manufacture, a magnetic pen holder consisting essentially of a permanently magnetized tube or staff, having its opposite ends of dissimilar polarity, an artificial top or feather B, fitted tightly in one end of said open tube or staff, and means within the other end of the tube or staff to receive and retain therein an ordinary writing pen, as set forth.

No. 41,630. Feeding Mechanism for Carding Engines. (*Appareil d'alimentation pour machines à carder.*)

Jacob Frank Geb, Franklin, Massachusetts, U.S.A., 16th January 1893; 6 years.

Claim.—1st. As a means of operating the toothed apron shaft of a card feeder, the driving shaft *b*, and a gear thereon, combined with the upright shaft *d*, the apron shaft or roll *c* and a gear thereon, the said gear being also constructed as a clutch part, a clutch part co-operating with the latter, and gears on the shaft *d*, engaging the gears on the driving and apron shafts, as set forth. 2nd. The apron shaft and driver gear fast thereon, constructed as a clutch part, combined with a co-operating clutch part, loose upon the shaft and adapted to engage the clutch part of the said gear, a lever *s*, adapted to be moved into and out of engagement with the clutch part loose upon the shaft, a weighing scale, and devices intermediate of the latter, and the lever *s*, for actuating the said lever, as set forth. 3rd. The driving shaft, the upright shaft *d*, gears connecting with the said shaft, and an eccentric on the upright shaft, combined with the pater and its fulcrumed shank, and a pitman adjustably connected with the said shank and actuated by the said eccentric, as set forth. 4th. As a means for operating the stripping apron of a card feeding machine, the combination with the shafts *e* and *i*, and gears thereon, of gears constructed and arranged as hereinbefore described, intermediate of the gears on the said shafts, as set forth. 5th. The combination with the main shaft and an eccentric thereon, of the vibrating comb, its rock shaft, a lever on the said shaft, and a pitman connecting the said lever with the said eccentric, all constructed, arranged and operating, as set forth.

No. 41,631. Toy and Advertising Device.

(*Jouet et appareil d'annonce.*)

The Keane Novelty Company, assignee of Frank H. Smith, Chicago, Illinois, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In the device herein before described, one or more vertically operating plungers D, cubes N, imposed upon the top or tables of said plungers, said cubes operated within a case B, said case having a separate compartment for each cube, an elbow lever G, pivoted to each plunger, a revolving wiper H, operating against one of the arms of said elbow lever to draw said plungers downward, a spring J, operating said plungers upward, and the other arm of said elbow levers connected with a push or slide button J, for the purpose substantially as described. 2nd. In the device herein before described, in combination with vertical operating plungers D, the top or inclined tables F of said plungers, and cubes N, resting upon said tables, said cubes operated within case B by plungers D against the rounded top of said case, for the purpose described. 3rd. In the device herein before described, one or more vertically operating plungers D, cubes N, imposed upon the top or tables of said plungers, said cubes operated within a case B, and

elbow lever G, pivoted to each plunger, a revolving wiper H operating against one of the arms of said elbow levers, as described, to draw said plungers downward, a spring J, operating said plungers upward, and the other arm of said elbow levers connected with a push or slide button J, all elbow levers G in the series capable of being operated by the described and pivoted rod M, said rod operated by lever L, in the manner and for the purpose described.

No. 41,632. Apparatus for Propelling Vessels.

(*Appareil de propulsion pour vaisseaux.*)

Joseph Wirth, Washington, District of Columbia, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In propelling apparatus for vessels, the combination of cylinders containing pistons provided with revoluble frames having hinged valves, and said pistons operated by lazy-tongs connecting rods arranged in casing secured to said cylinders, as shown. 2nd. The combination of one or more cylinders and pistons provided with revoluble frames having hinged valves operated, as described, with the lazy-tongs connecting rods placed in casings having removable covers and attached to the sides of the cylinders, all constructed as shown and described. 3rd. The combination of the cylinders made in sections with flanges, and the casings containing lazy-tongs connecting rods, and provided with removable covers to gain access thereto, and the hollow elongated pistons made in halves, bolted together and provided with revoluble frames carrying hinged valves, all as and for the purpose specified. 4th. The combination of cylinders extending from bow to stern of a vessel, the revoluble frames arranged in hollow elongated pistons and provided with semi-circular hinged valves having their shafts extending through stuffing boxes, and the springs to assist in opening said valves, all arranged as shown and set forth. 5th. The combination of lazy-tongs connecting rods placed in casings having removable covers, and said rods connected to the side of the hollow pistons provided with revoluble frames having hinged valves and arranged to facilitate the vessel to go in either direction. 6th. The lazy-tongs connecting rods arranged in a rectangular casing and connected to hollow elongated pistons provided with revoluble frames having pivoted valves, in combination with cylinders extending from bow to stern, and provided with drop valves at each end, all arranged as and for the purpose set forth. 7th. The combination of one or more cylinders extending from bow to stern, and provided with drop valves at each end with hollow elongated pistons provided with friction rollers, and revoluble frames having hinged valves and operated by lazy-tongs connecting rods placed in a casing having a longitudinal slot in its side for the pin of the piston, as shown and specified. 8th. The combination of coupled cylinders having rails at their base for the rollers of the pistons, and the casings in which the lazy-tongs operate and by their end links connected to said pistons, and said cylinders provided with openings for pumping out the water when the drop valves are closed, as set forth. 9th. The propelling apparatus herein described as an entirety, consisting of one or more cylinders extending from bow to stern, having hollow pistons with revoluble frames, to which the valves are hinged, and said pistons operated by lazy-tongs placed in casings, and the cylinders provided with drop valves at each end, all constructed and operating as and for the purpose specified.

No. 41,633. Rotary Snow Plow.

(*Charrie à neige rotatoire.*)

Edward Leslie, Orangeville, Ontario, 16th January, 1893; 6 years.

Claim.—1st. In a rotary snow plow, a wheel provided with pockets having rigid walls and open in front to admit the snow, and open at the top for the exit of the snow, substantially as shown and described. 2nd. In a rotary snow plow, a wheel provided with pockets rigidly fastened to the hub of the wheel, and each provided in front with an opening to admit the snow, and open at the rim of the wheel for the exit of the snow, substantially as shown and described. 3rd. In a rotary snow plow, a wheel provided with radially arranged pockets, each having a front and a top opening, and automatically reversing knives arranged in the said front openings, substantially as shown and described. 4th. In a rotary snow plow, a wheel provided with radially arranged pockets having rigid walls and located one along side the other, and made in the form of hollow cones, substantially as shown and described. 5th. In a rotary snow plow, a wheel provided with radially arranged pockets having rigid walls and located one along side the other, made in the form of hollow cones, and each having a front opening, substantially as shown and described. 6th. In a rotary snow plow, a wheel provided with radially arranged pockets having rigid walls, and having front openings standing at right angles to the axis of the wheel, substantially as shown and described. 7th. In a rotary snow plow, a wheel provided with radial pockets formed of hollow cones, open in front to admit the snow, and two knives hinged in each opening at the sides, and adapted to alternately open and close, substantially as shown and described. 8th. In a rotary snow plow, two pivoted knives arranged opposite each other, and a link for connecting the same so as to alternately open and close the knives, substantially as shown and described. 9th. In a rotary snow plow, the combination with two hinged knives, and a link for pivotally connecting the said knives with each other, of lugs secured on the said knives, and fixed bars

adapted to be engaged by the said lugs to limit the movement of the said knives, substantially as shown and described. 10th. In a rotary snow plow, the combination with hinged knives, of fixed bars for limiting the swinging movement of the said knives, substantially as shown and described. 11th. In a rotary snow plow, the combination with a wheel provided with radial pockets, each formed of a hollow cone having an opening in the front to admit the snow, of two knives hinged on each pocket in the said opening, and links for pivotally connecting two adjacent knives of two successive pockets, substantially as shown and described. 12th. In a rotary snow plow, the combination with a wheel provided with radial pockets, each formed of a hollow cone having an opening in the front to admit the snow, of two knives hinged on each cone in the said opening, links for pivotally connecting two adjacent knives of two successive cones, and means, substantially as described, for limiting the swinging motion of the said knives, as set forth. 13th. In a rotary snow plow, a wheel provided with a hub having a cone shaped end and angular cutter bars secured thereon, substantially as shown and described. 14th. In a rotary snow plow, the combination with a wheel provided with a hub, and radial pockets secured on the said hub, and having openings in the front for the admission of the snow, of two independently hinged knives arranged in the said openings, and adapted to alternately open and close, substantially as shown and described.

No. 41,634. Hose Reel. (Dévidoir de boyau.)

William Theodore Yeatman Schenck, of San Francisco, California, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The combination, of the aligned water tubes G, the T-shaped coupling piece mounted and turning on said tubes, the hose connected to the middle arm of the coupling piece, and the reel mounted and turning on the tube sections G, substantially as herein described. 2nd. The combination, with the stand pipe and the tubular system into which said pipe discharges, and which consists of the tubes *f*, *f'*, and facing aligned tubes G, of the T-shaped coupling piece mounted and rotatable on the tubes G, the reel mounted and rotatable on said tubes, and the hose attached to the middle arm of the T-shaped coupling piece. 3rd. The combination, with the stand pipe, the supported stuffing box thereabove, the tube D, fitting and rotatable in said stuffing box, and the system of tubing connected to the said tube, and consisting of the tubes *f*, *f'*, and aligned facing tubes G, of the T-shaped coupling piece mounted and turning on the tubes G, the reel mounted and turning on said tubes, and the hose attached to the middle arm of the T-shaped coupling piece. 4th. The combination, of the stand pipe, the T-shaped coupling piece F, having one lateral arm bent upward and again outward, so that it is higher than the opposite lateral arm, the aligned pipe sections G, and the side pipe sections *f'*, connecting the respective lateral arms of the T-shaped coupling piece, with the outer ends of the corresponding pipe sections G, substantially as herein described. 5th. The combination, with the stand pipe, the T-shaped coupling piece, the pipe sections *f*, *f'*, and coupling pieces *f''*, *f'''*, of the pipe sections G, having their facing ends connected by bars *g''*, and provided at their opposite ends with rectangular rabbets *g''*, the brace rod *f''*, the nuts *f''*, and the reel mounted on the pipe sections G, substantially as herein described. 6th. The combination of a bracket A, secured to the wall of a building, a T-shaped coupling piece carried by said bracket, and the reel mounted on said coupling piece, said reel and coupling adapted to be rotated toward either side, substantially as and for the purpose described. 7th. In a swinging hose reel, the pivotally connected reel carrying bracket having a hollow head communicating with the water supply, and a hollow arm communicating with the said head and the reel hub, substantially as herein described. 8th. In a swinging hose reel, the combination of the pivotally connected bracket having a hollow head communicating with the water supply and a hollow arm communicating with said heads and a reel journalled in the bracket arms and having a hollow hub communicating with the hollow arm of the bracket, substantially as herein described.

No. 41,635. Cultivator. (Cultivateur.)

William Hewitt, Brantford, Ontario, Canada, 16th January, 1893; 6 years.

Claim.—1st. The combination of the coupling F, pivoted on a suitable support or spindle D, and the tooth E, and spring G, secured to said coupling and means for applying pressure on the springs G, to retain or regulate the rigidity of the tooth in the ground, substantially as shown and described, and for the purpose specified. 2nd. The coupling F, pivoted on the spindle, D, and the tooth E, and spring G, secured to said coupling F, in combination with the cross bar H, and the guards or guides I, to prevent the teeth moving to either side, substantially as shown and described, and for the purpose specified. 3rd. The combined pivotal and pressure cross beam J, and means for pivotally securing it to the teeth, and to an operating lever so that it will be the medium through which pressure will be applied to the teeth to regulate their rigidity in the ground, as well as to permit the teeth to adapt themselves to uneven or inclined land, substantially as shown and described, and for the purpose specified. 4th. The combined pivotal and pressure cross beam J, pivotally secured to the connecting arm L, and means for operating the same in combination with, and pivotally secured to the cross bar H, the springs G, the teeth E,

the couplings F, and the spindle D, substantially as shown and described, and for the purpose specified. 5th. The combined pivotal and pressure cross beam J, pivotally secured to the connecting arm L, and means for operating the same in combination with and pivotally secured to the cross bars H, the guards or guides I, the springs G, teeth E, couplings F, and spindle D, substantially as shown and described, and for the purpose specified.

No. 41,636. Fire Escape. (Sauveteur d'incendie.)

Nazaire Bouvier, Montreal, Quebec, Canada, 16th January, 1893; 6 years.

Resumé.—1er. Le brancard en fer A composé des grandes barres C réunies par les petites barres G et muni des crochets D. 2ème. Le sac sans fond I attaché au brancard A, muni des cordes E et de la corde F, le tout tel que ci-dessus décrit et pour les fins mentionnées.

No. 41,637. Sewing Machine. (Machine à coudre.)

Myron C. Lisle and Marcus A. Pierce, both of Grand Rapids, Michigan, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The combination, with the hollow arms of a sewing machine having an arc slot therein, of the main shaft having an eccentric thereon, an upper connecting rod actuated by said eccentric, and pivoted at its lower end to a slotted link, said link being pivoted at its opposite end to its arm, a lower connecting rod having at its upper end a pin engaging with the said slotted link and having a flexible connection at its lower end with the main feed lever, and a bell crank lever pivoted within the hollow arm, one arm of said bell crank projecting through the said arc slot therein, the other end having a loose connection with the upper end of the lower connecting rod, substantially as set forth. 2nd. The combination, with the hollow arm of a sewing machine having an arc slot therein and a main shaft having an eccentric thereon, of an upper connecting rod supported upon and actuated by said eccentric and pivoted at its lower end to a slotted link, said link being pivoted at its opposite end to the arm, a lower connecting rod having at its upper end a pin engaging with said slotted link and flexibly connected at its lower end with the main feed lever, a bell crank lever pivoted within the hollow arm, one arm of said bell crank lever having a flexible connection with its upper end of the lower connecting rod, and the other arm projecting through the arc slot in the wall of the machine arm and provided with a thumb screw and an indicator point, and an index upon the face of the arc, substantially as set forth. 3rd. The combination, with the hollow arm of a sewing machine having an arc slot therein, a main shaft, and an eccentric, of a feed mechanism consisting of an upper connecting rod actuated by said eccentric and pivoted at its lower end to a slotted link, said link being pivoted at its opposite end to the arm, a lower connecting rod engaging at its upper end with and actuated by said slotted link and flexibly connected at its lower end with the main lever, a detachable ball pivot for making said connection, a bell crank lever pivoted within the arm, one arm of said crank being loosely connected with the upper end of the lower connecting rod, and the other end projecting out through the arc slot in the wall of the arm and provided with a thumb screw and an index point, and an arc formed upon the arm having a slot and an index, substantially as and for the purpose set forth.

No. 41,638 Pump. (Pompe.)

William McLennan, Port Angeles, Washington, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In an oscillating pump, the combination with a stationary lower casing, provided with a check valve, of a semi-circular top casing hinged thereto and separated therefrom by a partition provided with valves, an oscillating shaft journalled in the top casing and provided with valved wings, an outlet to said top casing, and an exterior operating handle at either or both ends of the shaft, substantially as set forth. 2nd. In an oscillating pump, the combination with a semicircular casing, provided at one side with a journal box and at the opposite side with a vertical groove, of a shaft carrying valved wings and having one end passed through and bearing in said journal box, and the opposite end seated in the groove, and a concave block inserted in the vacant portion of the groove and forming the second bearing for the shaft, substantially as and for the purpose set forth.

No. 41,639. Machine for Threading and Cutting Pipe. (Machine pour fileter et couper les tuyaux.)

Arthur Wise Cash, Bridgeport, Connecticut, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In a machine of the character described, the combination with the hollow shaft and suitable tools carried thereby, of the gear mounted upon said shaft, the transversely arranged primary shaft, the worm upon said primary shaft, a set of change speed gears, and the means, as described, whereby said worm is connected directly to said primary shaft, or is immediately connected therewith through the gears, substantially as set forth. 2nd. In a machine of the character described, the combination with the hollow tool carrying shaft and the spur gear secured thereon, of the transversely arranged primary shaft and the means for imparting rotation thereto, the worm and gear secured around said shaft, the change

speed gears, as described, and the stud secured upon the primary shaft, whereby the latter may be locked fast to the worm or may be engaged therewith through the gearing, substantially as set forth.

3rd. In a machine of the character described, the combination with the base, of a hollow upward projection therefrom, whereby a cavity is formed for the reception of oil or other lubricant, the hollow shaft journaled in said upward projection, the gear secured upon said shaft, the transverse primary shaft and the worm, and the change speed gears and the locking stud, whereby the rotation of the worm is varied, substantially as described.

4th. In a machine of the character described, the combination with the hollow shaft and means for rotating the same, of the head secured upon and carried by said hollow shaft, radially movable dies arranged in said head, and means, as described, whereby said dies may be projected inward to their operative position or may be projected outward and the shaft opening left free, substantially as described.

5th. In a machine of the character described, the combination with the hollow rotary shaft and means for operating the same, of the head secured upon said shaft, the dies carried by and radially movable in said head, and means, as described, for operating said dies to their engaged or disengaged position, and for locking said dies in their engaged position, substantially as specified.

6th. In a machine of the character described, the combination with the hollow shaft, the means for operating said shaft, and the head carried by said shaft, of the radially movable die blocks, dies adapted to be secured to said blocks, a hand wheel arranged around the shaft behind the head and independently movable upon said shaft, and means, as described, interposed between said hand wheel and the die blocks, whereby radial movement will be imparted to the latter upon the operation of the former, substantially as described.

7th. In a machine of the character described, the combination with the hollow shaft and means for rotating the same, of the head carried by said shaft, the die blocks radially movable in said head, the cranked shafts engaging said die blocks and provided with gears at their rear ends, and a toothed ring, and means for operating said ring about the shaft, whereby movement is imparted to said cranked shafts, substantially as specified.

8th. In a pipe cutting and threading machine, the combination with the hollow shaft, the head upon said shaft, and the die blocks and dies, of the cranked shafts having wrists engaging the die blocks, gears carried by said shafts within the head, the toothed ring surrounding the hollow shaft, and the hand wheel secured to and adapted to operate said ring, substantially as described.

9th. In a machine of the character described, the combination with the rotative head and the shaft whereby said head is carried, of the radially movable dies and die blocks, the cranked shafts journaled in the head and adapted to operate said die blocks, gears secured to said shafts within the head, a toothed ring adapted to engage said gears, and means for operating said ring, and a locking pawl, and means for disengaging the same, whereby said ring and the gears meshing therewith are securely held, substantially as set forth.

10th. In a machine of the character described, the combination with the rotary head, of die blocks radially movable in said head, said head being provided with standard marks, dies also having standard marks, and means, as described, for securing and adjusting said dies upon the die block, substantially as described.

11th. In a machine of the character described, the combination, with the head, the die blocks and dies, and the short cranked shafts journaled in the head and having gears at their rear ends, of the toothed ring engaging and adapted to operate the gears, the hand wheel loosely connected to said ring, the pawl adapted to engage and to lock said ring, and the means secured upon the hand wheel, whereby said pawl may be withdrawn out of engagement, substantially as described.

12th. In a machine of the character described, the combination, with the head and the die blocks and dies arranged therein, of two independently actuated carriages bearing cutting off tools, and the means, as described, for imparting an inward feeding movement to said carriages, substantially as described.

13th. In a machine of the character described, the combination, with the head and the die blocks and threading dies carried thereby and movable radially relative thereto, of the carriages bearing cut off tools arranged alternately with the die blocks and adapted to move radially in the head, and the means, as described, for imparting to the cutting off carriages an inward feeding movement, substantially as described.

14th. In a machine of the character described, the combination, with the rotary head and the dies radially movable therein, of a pair of radially movable carriages arranged in said head alternately with the dies, and means for moving both the die blocks and dies and the cutting off carriages inward, said dies and carriages being so arranged that when either is projected inward it constitutes a stop as against the inward projection of the other, substantially as described.

15th. In a machine of the character described, the combination, with the head, of the carriages arranged radially therein and provided with cutting off tools, screws engaging and adapted to move said carriages, feeding wheels secured to said screws and projecting beyond the periphery of the head, and a trip secured to the frame of the machine and adapted to engage and turn said wheels, substantially as described.

16th. In a machine of the character described, the combination, with the head, of the radially arranged carriages having bearings in said head and adapted to carry the cut off tools, screws provided with feeding wheels, whereby the movement of said carriages is effected in both directions, and a hinged tripping device secured to the frame of the machine and

adapted to engage the wheels, substantially as described.

17th. In a machine of the character described, the combination, with the head, of the carriages provided with cut of tools arranged radially therein, screws adapted to feed said carriages in both directions, feeding wheels arranged upon the ends of the screws, a hinged trip adapted to engage and operate the feeding wheels, and an incline upon said trip arranged in the plane of rotation of the ends of the carriages, substantially as described.

18th. In a machine of the character described, the combination with the threading and cutting off devices, of a vice mounted and movable longitudinally upon the bed of the machine lever fulcrumed upon said carriage, and a post projecting through said carriage from the bed and connected to the end of the lever, substantially as described.

19th. In a machine of the character described, the combination with the threading and cutting off devices, of a base mounted and adapted to move longitudinally upon the bed of the machine, vice jaws arranged upon said base, right and left hand screws engaging said jaws and having thrust bearings immediately behind the centre of said jaws, and means, as described, for simultaneously rotating said screws, substantially as described.

20th. In a machine of the character described, the combination with the threading and cutting off devices, of the vice jaws mounted and adapted to slide transversely to the bed, right and left hand screws engaging said jaws immediately behind the centres thereof and adapted to operate them, gears secured upon said right and left hand screws, and an operating shaft having gears upon the screws, substantially as described.

21st. In a machine of the character described, the combination with the threading and cutting off devices, of the vice, jaws 39, arranged and adapted to slide transversely to the bed, right and left hand screws 42, having gears 43, engaging and adapted to operate said jaws, standards 40, arranged behind and affording a bearing to take up the thrust of the screws, transverse shaft 41, having gears 44, and a handle 45, all arranged as described and for the purpose specified.

No. 41,640. Regulator for Gas. (*Régulateur de gaz.*)

Michael O'Gorman, Jersey City, New Jersey, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The combination, substantially as set forth, of a casing having a gas pressure chamber provided with an outlet to the service pipe, and having also a gas receiving chamber provided with an inlet for connection with the source of gas supply, a slotted cup-shaped valve working in a fluid seal interposed between said chambers, a similar valve in the receiving chamber controlling a passage way connecting the valve chamber of the latter valve with the pressure chamber, a mechanical connection between the two valves, whereby they are caused to move together, a piston in the pressure chamber connected with the former valve, whereby a relative increase of pressure in said chamber tends to depress both valves, and variable counterbalancing devices connected with the valves to compensate for variations in their effective weight due to varying degrees of immersion in the fluid.

2nd. The combination, substantially as set forth, of a casing provided with a gas pressure chamber having an outlet leading to the service pipe, two mechanically connected valves controlling the supply of gas to the pressure chamber, the areas of which are such that the pressure of gas upon them approximately balances them, a fluid seal or seat for each of said valves, and a piston in the pressure chamber unconfined at its periphery, having a fluid seal or seat, and connected with said balanced valves, so as to move bodily therewith.

3rd. The combination, substantially as set forth, of a casing provided with a gas pressure chamber having an outlet leading to the service pipe, and an inlet through which gas is admitted, a valve controlling said inlet, a fluid seal or seat for said valve, a valve stem, a counterbalancing device thereon, a fluid seal or seat for the counterbalancing device, and a piston in the pressure chamber unconfined at its periphery, having a fluid seal, and connected with the valves, so as to move bodily therewith.

4th. The combination, substantially as set forth, of a casing provided with a gas pressure chamber having an outlet leading to the service pipe, two mechanically connected valves controlling the entrance of gas to the pressure chamber, and each provided with a fluid seal or seat, the area of said valves being such that the pressure of gas thereupon approximately balances them, a piston in said chamber unconfined at its periphery, having a fluid seal and connected with said valve, so as to move bodily therewith, and a mechanical counterbalancing device connected with the valves.

5th. The combination of a casing having a gas receiving chamber, and a pressure chamber into which gas is admitted, and from which it is discharged, the valves G and H having fluid seals, and which open and close passages between the two chambers, the rod connecting the valves, the piston in the pressure chamber unconfined at its periphery, having a fluid seal, and connected with the valves so as to move bodily therewith, the fluid receptacle E, arranged above the pressure chamber, the sealing cup I, immersed therein, and carried by the valve rod, a counter balancing weight N, a flexible connection between the weight and valve rod, and a pivoted eccentric over which the flexible connection passes, and with which it is adjustably connected.

6th. In a gas regulator, the combination, substantially as set forth, of a casing having a pressure chamber provided with inlet and outlet ports, a cup-shaped balanced valve having a fluid seal or seat, and controlling the flow of gas to the pressure chamber, a piston in the chamber connected with the

balanced valve, and variable counterbalancing devices connected with the valve and piston, substantially as and for the purpose set forth. 7th. In a gas regulating apparatus, the combination, substantially as set forth, of a casing provided with a pressure chamber having entrance and exit ports, a slotted, cup-shaped valve at the entrance port, extending into a fluid seal recess in the casing, and devices for preventing the fluid adhering to the valve as it rises and falls. 8th. The combination, substantially as set forth, of the casing A, of the gas receiving chamber, the casing B, of the pressure chamber, the fluid seal recess in the casing A, in which the edge of the casing B is sealed, and the fluid in which forms a gas tight joint between said casings, a valve in the receiving chamber controlling a passage for gas from the receiving chamber to the pressure chamber, and a valve in the pressure chamber controlling a second passage between the two chambers. 9th. The combination, substantially as set forth, of the casings of the gas receiving and pressure chambers, having inlet and outlet openings, a valve in the receiving chamber controlling a passage from the receiving chamber to the pressure chamber, a valve in the pressure chamber controlling a second passage from the receiving chamber to the pressure chamber, a piston in the pressure chamber connected with these valves, a counterbalancing weight, an adjustable strap connected with the piston, a cam over which the strap passes, and a cover enclosing the cam and weight. 10th. The combination of a gas pressure chamber, having inlet and outlet ports, a valve having a fluid seal or seat, and a counter balancing device for the valve, also having a fluid seat.

No. 41,641. Supporter for Rails. (Support de rails.)

Elisha Gilbert Patterson, Titusville, Pennsylvania, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The combination of a rail supporter, consisting of a supporting floor, with its side or sides made in truss form and vertically or vertically and longitudinally inclining inward toward the rail and over its base, and secured thereto by wedge plates driven longitudinally to a bearing upon the base and under the head of the rail, and against the inner face of the side of the supporter, with two abutments placed on the road bed, and so arranged that the ends of the supporter shall rest upon the abutments, substantially as and for the purposes described. 2nd. A rail supporter, consisting of a supporting floor, with its side or sides curved or bent over the rail base, and vertically or vertically and longitudinally inclined toward the rail and secured thereto by wedge plates driven longitudinally to a bearing upon the base and under the head of the rail, and against the inner face of the side of the supporter, substantially as and for the purposes described. 3rd. A rail supporter, consisting of a supporting floor, with its side or sides vertically or vertically and longitudinally inclining inward over the base of the rail, with spring pressure toward the medial line, induced by wedge plates inserted between the side of the supporter and the rail or rails, so as to receive and retain the lateral spring bearing of the supporter, and communicate such spring pressure to the base and head of the rail or rails, substantially as and for the purposes described. 4th. A wedge plate in one or more pieces bearing upon the base and under the head of the rail, and with its outer face bearing against the inner face of the vertically or vertically and longitudinally inwardly inclined side of a rail supporter, such outer face being formed longitudinally concave, substantially as and for the purposes described.

No. 41,642. Method of Tamping Railway Ties.

(*Méthode de bourrage pour traverses de chemin de fer.*)

Elisha Gilbert Patterson, Titusville, Pennsylvania, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. The method of forcing and compacting ballasting or tamping material to and within the cavity or cavities under rail bearers, by the propulsive and compressive action of an aeriform fluid, applied substantially in the manner hereinbefore described. 2nd. The method herein described, of conveying ballasting material to and depositing and compacting it within a cavity or cavities under the bearers of railroad rails, consisting in forcing it into such cavity or cavities, by means of an air blast, substantially in the manner herein set forth. 3rd. The method hereinbefore described, of surfacing the rails of railroads when depressed in use, which consists in raising the bearing to the desired level, and temporarily supporting it in the desired position, and then injecting into the cavity thus formed under or within the bearing the necessary amount of ballasting material by the propulsive and compressive force of air or other elastic aeriform fluid, substantially as described.

No. 41,643. Harness. (Harnais.)

Jonas Fontaine Welcome, Richmond, Virginia, U.S.A., 16th January, 1893; 6 years.

Claim.—1st. In a harness, a bridle carrying gag runners, in combination with the reins, one end of each of which is secured at a point in rear of the bridle, the free portion of the reins being passed through said runners. 2nd. In a harness, a bridle having gag runners on each side thereof, and carried respectively by the crown strap and by the bit rings, in combination with the reins, one end of each of which is secured at a point in rear of the bridle, the free portion of the reins being passed through the said runners. 3rd. A

harness saddle, and a bridle having gag runners on each side thereof, and carried respectively by the crown strap and by the bit rings, in combination with the reins, one end of each of which is secured to a fixed portion of the said saddle, the free portion of the reins being passed through the said runners. 4th. A harness saddle having turret rings, and a bridle having gag runners on each side thereof, and carried respectively by the crown strap and by the bit rings, in combination with the reins, one end of each of which is slotted to pass over the turret rings, the free portion of the reins being passed through the said runners. 5th. In a harness, the combination with the bridle having gag runners on each side thereof, and carried respectively by the crown strap and by the bit rings, of combined reins and check strap, consisting of suitable straps secured at a point in rear of the bridle, the free portion of the straps being first passed through the crown strap runners, and then through the bit runners. 6th. In a bridle, the combination, with the bit and the crown strap, of an adjustable bit strap, the upper and the lower ends of which are bifurcated, the lower bifurcated portions being secured to the bit rings, and the upper bifurcated portions adjustably secured to the crown strap at points adjacent to the brow band.

No. 41,644. Type-writer. (Clavigraphie.)

The Dougherty Typewriter Company, assignee of James Denny Dougherty, all of Kittanning, Pennsylvania, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In a type-writer, the combination, with a carriage, of a vertically shifting frame carrying key levers and type bars, the latter having each two or more characters, whereby when the frame is shifted the type bars and keys are moved therewith, substantially as shown. 2nd. In a type-writer, the combination, of a frame and a carriage supported horizontally thereon in an elevated position, of a horizontal frame pivoted between its ends below the said carriage, and a series of type bars pivoted in the inner end of the said frame, having each two letters, whereby the tilting of the frame will move the type bars vertically and bring each letter in position to print, substantially as shown. 3rd. In a type-writer, the combination, with the carriage having two horizontal rack bars, of type bars, key levers, a pivoted feed lever having one end to oscillate between the rack bars and a dog vertically pivoted to horizontally vibrate and alternately engage the two racks as the feed lever moves back and forth between the racks, substantially as described. 4th. In a type-writer, the combination, with the carriage having two horizontal rack bars, of type bars, key levers, a pivoted feed lever having one end to oscillate between the rack bars, and a dog composed of two independently vertically pivoted parts which horizontally vibrate and alternately engage the two rack bars as the feed lever moves back and forth, substantially as described. 5th. In a type-writer, the combination with a carriage having a rack bar which is provided with teeth of such size that two equal one space, of type bars, key levers, a pivoted feed lever and a dog upon the feed lever composed of two parts each part having a longitudinal movement in the same direction in relation to the carriage, whereby the carriage makes a half space when the feed lever is depressed, and a half space when it is released, for the purpose substantially as described. 6th. The combination of the frame provided with the cross bars D, F, G, and the key levers pivoted upon the cross bars D, with the type bar, and the division plates substantially as shown. 7th. The division plates I, provided with the downwardly extensions I', at their front ends, the extensions being widest or thickest at their lower ends, substantially as described. 8th. The combination of the frame C, provided with cross bars D, F, G, the division plates secured to the bars D, G, and separated by washers, and the type bars, the plates being provided with downward extensions upon their front ends, and which extensions are made thickest at their lower ends, substantially as set forth. 9th. The combination of the pivoted lifting frame carrying the key levers and the type bars, with the standards N, provided with regulating devices for limiting the movement of the rear end of the frame, and a means for lifting the said frame, substantially as described. 10th. In a type-writer the combination with the carriage supported in an elevated position of a frame pivoted below the carriage between its ends, the type bars pivoted in the inner end of the frame and each having two characters, and means for tilting the frame, whereby the tilting of the frame brings either in position for printing, and adjustable stops above and below the frame which engage therewith for limiting its movement, substantially as specified. 11th. A dog composed of two parts which are placed upon the same pivot, and which extend in opposite directions, and which are made to overlap at their inner ends, in combination with a spring for holding the two parts in a line with each other, substantially as described. 12th. The combination in a type-writer of a normally horizontal pivoted type bar having a downwardly extending projection adjacent to its pivoted point, and a horizontal key lever below the type bar having an upwardly extending projection which engages the projection of the type bar, whereby the type bar and lever normally rest in a line one above the other, substantially as described. 13th. In a type-writer the combination of a separate and disconnected type bar and key lever, one having a projection and the other having two shoulders in the path travelled by the projection, one shoulder for moving the type bar in one direction and the other for returning it to position, substantially as shown and described. 14th. The com-

bination in a type-writer of a normally horizontal pivoted type bar having a downwardly extending projection near its pivotal point, and a horizontal key lever below the type bar having an upwardly extending socket, into which the said type bar projection rests, for the purpose shown and described. 15th. In a type-writer, the combination, with the printing mechanism, and horizontal ribbon spools, of an L-shaped pivoted feed lever, and horizontal pawls upon each side of the upper end of the said L-shaped pivoted feed lever, and which engage the said ribbon spools as the lever oscillates, substantially as specified. 16th. In a type-writer, the combination, with the printing mechanism and ribbon spools, of an L-shaped pivoted feed lever, and pawls pivoted between their ends upon the upper end of the said lever, and springs secured to their inner ends for holding them in contact with said ribbon spools, substantially as shown. 17th. In a type-writer, the combination, of the feed lever, a lever R¹, having its outer end engaged by the feed lever, a frame through which the ribbon passes pivoted at its rear end, and a lever S¹, connected respectively to the inner ends of the ribbon guiding frame and the lever R¹, whereby a downward movement of the feed lever raises the said ribbon guide frame, combined to operate in the manner substantially as shown and described. 18th. The combination, with a type-writer carriage having two parallel racks, of a dog composed of two independently moving parts which extend in opposite directions, and a spring for holding the two parts normally in a line with each other, combined to operate in the manner substantially as described. 19th. In a type-writer, the combination, with the carriage having two parallel racks, of a dog composed of two independently moving parts which extend in opposite directions, and a set screw which engages each part for limiting its movement, substantially as shown. 20th. In a type-writer, the combination, with the feeding lever, levers horizontally pivoted upon the upper end of the feed lever, and extending forward for operating the ratchets upon the ribbon spools, and the endwise sliding bar W¹, having notched hangers which engage the horizontally pivoted levers, substantially as shown and described. 21st. The combination, with a type-writer, of a pivoted frame having its free end provided with a slot or opening for the passage of the type, outwardly extending diverging guiding arms, and loops upon opposite sides of the said opening through which loops the ribbon passes, and a connection between the operating mechanism and the said frame for tilting it, substantially as described.

No. 41,645. Holder for Photographs.

(*Porte-photographie.*)

George F. Bambridge, Toronto, Ontario, Canada, 17th January, 1893; 6 years.

Claim.—1st. In a photograph holder, the combination of a base, a series of holders mounted upon said base, a hinge fastened to each of said holders and to the said base, a retaining piece extending across said holders, the photographs, an opening in the photographs, said retaining piece adapted to pass through said openings to prevent the removal of the photographs, a guard extending along the ends of said holders to prevent the displacement of the photographs, substantially as and for the purpose set forth. 2nd. In a photograph holder, the combination of a base, a series of holders mounted upon said base to receive and hold in position the photographs, a hinge connected to each of said holders and to the top of said base, a retaining piece extending across the top of said base to lock the photographs to the photograph holder, substantially as described. 3rd. In a photograph holder, the combination of a base, a series of holders mounted on the top of said base, a hinge fastened to each of said holders and to said base, each of said holders consisting of a continuous piece of wire, the ends of which are bent to form a slide to receive the photograph card, substantially as and for the purpose described. 4th. In a photograph holder, the combination of a base, a series of holders on the top of said base, a hinge fastened to each of said holders and to said base, said hinge arranged to permit the holders to move laterally, each of said holders consisting of a continuous piece of wire, the middle or body portion of which is fastened to said hinge, whilst the ends are open to form a slide to receive the photograph card, a retaining piece extending across said holders, the photograph cards, an opening in each of said photograph cards through which passes the retaining piece, guards extending along the ends of said holders to prevent the displacement of the photograph cards, a casing, hinges fastening said casing to the base, substantially as and for the purpose described.

No. 41,646. Machine Plow. (*Charrue.*)

James Carpenter, of Montreal, Quebec, Canada, 17th January, 1893; 6 years.

Claim.—1st. In a machine plow, the combination with a carriage or frame mounted on traction wheels, of plowing mechanism proper and elevated from its work. 2nd. In a machine plow, the combination with a carriage or frame mounted on traction wheels, of a propelling screw constituting the plowshare, a frame carrying such screw and being pivotally connected with said carriage, and gearing operated by one of said traction wheels for rotating said screw. 3rd. In a machine plow, the combination with a carriage or frame mounted on traction wheels, of plowing mechanism comprising a frame pivotally connected with said carriage, and an adjustable

cutting disc, a coulter, a propelling screw share, a pulverizing screw, turn furrow and gearing for rotating said screws, from one of said traction wheels, all carried by said pivoted frame, as set forth.

No. 41,647. Vessel for Measuring Liquid.

(*Appareil de mesurage des liquides.*)

Charles Allen White, Ossipee, New Hampshire, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. The improved liquid measuring apparatus, consisting of a receptacle adapted to be connected to a hoghead or other liquid holding package, and provided with an outlet having a gate or external shut-off, a valve within the receptacle adapted to control the passage of liquids through the outlet, said valve having a stem projecting through the top of the receptacle, and a float movable in the receptacle and provided with an upwardly extending rod or tube engaged as described with the valve stem, the valve being adjustable toward and from the float, substantially as and for the purpose specified. 2nd. In a liquid measuring apparatus, the combination of a plate provided with vertical guides and adapted for attachment to a hoghead or other package, said plate having an opening communicating with the outlet of the hoghead, a slide adapted to move on said guides, a receptacle attached to said slide and provided with an inlet arranged to coincide with the outlet opening in the plate when the slide is depressed, and an outlet in its lower portion having a suitable gate or shut off, means for holding the slide and receptacle in a raised position with its inlet disconnected from the outlet opening in the plate, a valve within the receptacle adapted to control the outlet, an upwardly projecting stem on said valve, and a float movable in the receptacle and provided with an upwardly extending rod or tube engaged as described with the valve stem to support the valve at various distances from the float, as set forth. 3rd. The receptacle *h*, having an externally threaded outlet nipple or projection provided with an eccentrically arranged orifice, combined with the internally threaded cap having an eccentrically arranged outlet nozzle, adapted to be connected with and disconnected from said orifice by partial rotary movements of the cap, as set forth. 4th. The combination of the plate *b*, adapted to be attached to a hoghead, the lever *k*, pivoted to said plate and provided with teeth *m*, the slide adapted to move on guides on the plate *b*, and provided with teeth *n*, and the receptacle *h*, attached to said slide, all arranged and operating substantially as set forth.

No. 41,648. Method of Forming Soluble Phosphates.

(*Méthode pour former des phosphates solubles.*)

John Edward Stead, Middlesborough, York, England, and Henry Marion Howe, Boston, Massachusetts, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. The herein described method for producing soluble phosphates, which consists in highly heating substantially insoluble phosphates with a basic substance, whereby the substantially insoluble phosphate is converted into a soluble phosphate, substantially as described. 2nd. The herein described method for producing soluble phosphates, which consists in effecting the combination of the insoluble phosphates with a basic substance in the treatment of other substances, substantially as described. 3rd. The herein described method for producing soluble phosphates, which consists in enriching phosphoric slag produced in the basic Bessemer or basic open hearth process with natural or other phosphates, added either before, after or during said process, substantially as described. 4th. The herein described method for producing soluble phosphates, which consists in charging natural or other insoluble phosphates in the Bessemer converter or open hearth puddling or other furnace, with or without the addition of lime or other basic substance, in connection with the dephosphorization of phosphoric iron in said furnace, substantially as described. 5th. The herein described method for producing soluble phosphates, which consists in highly heating or melting a charge of substantially insoluble phosphates with a charge of basic substance to convert the said insoluble phosphates into a tetrabasic or other soluble phosphates, substantially as described. 6th. The herein described method for producing soluble phosphates, which consists in highly heating or melting a charge of substantially insoluble phosphates with a charge of basic substance, present in sufficient quantity to convert all or substantially all of the said insoluble phosphates into tetrabasic or other soluble phosphates, substantially as described.

No. 41,649. Machine for Stencilling Signs.

(*Machine pour patroner les enseignes.*)

George H. Tietjin, San Francisco, California, U.S.A., 17th January, 1893; 6 years.

Claim.—1st A sign stencilling machine adapted through the medium of the herein described mechanism to impart, respectively, a rotary and reciprocating movement to the stencil brush, substantially as shown and described. 2nd. A sign stencilling machine consisting of the operating gears adapted to mesh with a series of pinions secured to suitable rotating rods, located within sleeves, so as to impart motion to the stencil brush, substantially as set forth and described. 3rd. The combination in a sign stencilling machine, of the frame, depending arms secured thereto, rotating axle having bearings within the arms and frame, drive wheel attached to the

axle, operating gear located thereupon, supporting yoke depending therefrom, movable sleeve secured within the yoke, operating rod passing therethrough having upper and lower pinion secured thereon, yoke suspended from said sleeve, axle passing through the arms thereof, gear wheel secured to said axle, supporting bracket movably secured thereto, counterbalance weight located upon the rearwardly extending rod, forwardly extending sleeve, operating rod passing therethrough, pinions attached to the forward and rearward end of said rod, yoke movably attached to the forward end, supporting holder and gear located upon axle passing through said yoke, handle attached to the holder, operating rod, having a pinion at its upper end, passing through said handle, and of the stencil brush attached to the operating rod, and adapted through the working thereof to have a rotary motion imparted thereto, substantially as set forth and described. 4th. In a sign stencilling machine, the combination with the herein described mechanism, of the forwardly extending sleeve, operating rod located therein, pinions attached to said rod, forwardly extending yoke secured to the outer end of the sleeve, axle having bearing within the yoke arms, gear located upon said axle, supporting holder working thereon, handle attached to said holder, operating rod, having pinion secured thereon, passing therethrough, and of the rotating stencil brush secured thereon, substantially as and for the purpose set forth and described. 5th. In a sign stencilling machine, the combination with the herein described operating mechanism, of the supporting holder adapted to have one or more handles attached thereto, operating rod passing through the handle, and of the stencil brush secured upon said rod, and adapted to turn with the movement of the supporting holder, substantially as set forth and described. 6th. The herein described sign stencilling machine, consisting of a series of gears, operating rods and pinions, pinions supported and arranged so as to coact one with the other for the purpose of imparting a rotary reciprocating motion to the stencil brush, substantially as set forth and described. 7th. In a sign stencilling machine of the herein described nature, the combination with the forwardly extending sleeve carrying an operating rod provided with pinions, of the yoke attached to the forward end, axle having bearings in the arms thereof, gear located thereon and adapted to mesh with the forward pinion of the operating rod, supporting holder or bracket secured thereon, eccentric mounted upon said axle and adapted to revolve therewith, forwardly extending strap passing around the eccentric, brace rigidly securing said holder upon the forward end of the sleeve, forwardly extending handle attached to the holder, operating rod secured movably to the outer end of the handle, connecting rod connecting the upper end of said operating rod to the outer end of the eccentric strap, and of the stencil brush secured to the operating rod, substantially as set forth and described. 8th. In a sign stencilling machine, the combination, with the eccentric, of the forwardly extending strap passing therearound, provided with an elongated slot for regulating the throw of the stencil brush, and of the herein described mechanism for imparting a reciprocating motion to said stencil brush, substantially as set forth. 9th. In a sign stencilling machine, the combination, with the herein described mechanism for imparting rotary motion to the stencil brush, of the handle support movably secured upon the axle F^1 , and adapted to receive handle and brush at each end thereof, substantially as set forth and described. 10th. In a sign stencilling machine, the combination, with a series of gears, pinions, operating rods working within sleeves, yokes and supporting brackets, so arranged as to allow for a coaction there between, and of a free movement of the stencil brush in any desired direction, substantially as set forth and described. 11th. In a sign stencilling machine, the combination, with the herein described mechanism for imparting motion to the stencil brush, of the bracket E^1 , movably secured upon the axle d^2 , rearwardly extending rod c^2 , connected thereto, counterbalance weight movably secured upon said rod, and of the forwardly extending sleeve having an inwardly working operating rod, secured to the front of said bracket, and adapted to have secured thereon the forwardly extending yoke, within which works the operating gear and holding support for the stencil brush handle, substantially as set forth and described. 12th. In a sign stencilling machine, the combination, with the yoke C^1 , of the movable sleeve C^2 , secured thereto by means of the screw c^1 , passing through said yoke and engaging with the annular groove c^2 , formed in the upper end of said sleeve, and of the operating rod passing through said sleeve, carrying pinions adapted to engage with suitable gears for imparting motion to the stencil brush, substantially as and for the purpose set forth and described. 13th. In a sign stencilling machine, the combination, with the eccentric, mechanism for imparting motion to the eccentric, and of the stencilling brush suitably connected thereto, and adapted by the throw thereof to have a reciprocating motion imparted thereto, as and for the purpose set forth. 14th. In a sign stencilling machine, the combination, with the handle support, operating handle, eccentric mounted thereon, mechanism for imparting motion thereto, and of the stencilling brush suitably connected thereto, and adapted to have a reciprocating motion imparted by the throw of the eccentric, as and for the purpose set forth. 15th. A sign stencilling machine, consisting of the operating gears, adapted to mesh with a series of pinions secured to suitable rotating rods located within sleeves, eccentric adapted to have motion imparted thereto, and of the oscillating brush suitably connected to the eccentric, and adapted with the throw thereof to have a reciprocating motion imparted thereto, as and for the purpose set forth.

No. 41,650. Cleaner for Grain. (*Cylindre émolteur.*)

August Heine, Silver Creek, New York, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. The combination with the perforated scouring case, of an imperforate abrading plate arranged against the outer side of a portion of the scouring case, and closing the perforations therein, and a scouring reel arranged within the scouring case, substantially as set forth. 2nd. The combination with a perforated scouring case, of an imperforate plate secured to the scouring case and provided on its inner side with a coating of emery, which closes the outer ends of the perforations, and a scouring reel arranged in the scouring case, substantially as set forth. 3rd. The combination with a scouring case, of a scouring reel rotating in the scouring case, and a brush secured in the scouring case against which the grain is thrown by the reel, substantially as set forth. 4th. The combination with a trough shaped scouring case, of a scouring reel arranged therein, and a stationary brush arranged in the scouring case above the scouring reel, substantially as set forth. 5th. The combination with a trough shaped scouring case, of a scouring reel arranged therein, a perforated top plate forming the upper inclosure of the scouring case at the head end thereof, and a brush forming the upper inclosure of the scouring case at the tail end thereof, substantially as set forth. 6th. The combination with the inclosing case of the machine, the perforated scouring case and the scouring reel arranged therein, of a draft chamber inclosing the scouring case and provided with a conveyor trough, a fan having its eye connected with the draft chamber, and a deflecting board whereby the heavy particles are directed into the conveyor trough, substantially as set forth. 7th. The combination with the inclosing case of the machine, the scouring case, and the scouring reel arranged therein, of a draft chamber having its bottom extending underneath the scouring case, and separated at its front end from the wall of the inclosing case by an air passage, and an inclined cant board arranged over said passage and separated at its upper end from the front wall of the inclosing case, and at its lower end from the bottom of the draft chamber, substantially as set forth. 8th. The combination with the scouring mechanism, of a draft chamber inclosing the mechanism and provided with a conveyor trough, a fan whereby an air current is drawn through the draft chamber, a dust depositing chamber connected with the discharge spout of the fan, and a discharge leg connected with the conveyor trough and provided with an air inlet communicating with said dust depositing chamber, substantially as set forth. 9th. The combination with the inclosing case of the machine and scouring mechanism, of a draft chamber inclosing the scouring mechanism, a fan having its eye connected with the draft chamber, a dust depositing chamber connected with the discharge spout of the fan, an upright leg which receives the grain with the depositing chamber and communicates near its lower end with the depositing chamber to receive the air therefrom, and an air trunk connecting the upper end of the leg with the draft chamber, substantially as set forth. 10th. The combination with the upright separating leg, and the fan which causes an air current to flow through the same, of a closed separating chamber arranged above the upper end of the separating leg, and a lateral passage which leads from the upper end of the separating leg to the fan, whereby the heavy particles are projected upwardly into the separating chamber, while the air current in which the lighter particles remain suspended passes off through the lateral passage, substantially as set forth. 11th. The combination with an upright separating leg and the fan which causes an air current to flow through the same, of an inclosure having its lower end connected with the upper end of said leg, and its upper end connected with the fan, and a valve arranged in said inclosure, and having on one side a depression which forms part of a closed separating chamber, while the other side of the valve forms the adjustable wall of the passage which leads to the fan, substantially as set forth. 12th. The combination with the scouring mechanism and the draft chamber inclosing the same, of a leg arranged on the front side of the scouring mechanism and receiving the grain therefrom, and a return bend air trunk connecting the upper end of the leg with the draft chamber, and provided with a separating chamber above the leg and a valve arranged therein, substantially as set forth.

No. 41,651. Machine for Making Wire Fence Strands. (*Machine pour la fabrication des torons de fil de fer pour clôtures.*)

Edgar Fay Hathaway, Hornellsville, New York, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. The combination, with an advancing support adapted to receive a filling, of a gripper to which the filling passes from said support, and side winders arranged upon each side of the gripper to carry the side wires around the projecting portions of the filling, substantially as described. 2nd. The combination, with an advancing support, having devices for receiving and retaining a filling, of a gripper to which said filling is delivered, and side winders having guides for the longitudinal or side wires, said guides having their exit ends arranged to revolve about the point of successive engagement of the gripper with the filling, to wind the side wires about the projecting parts of said filling, substantially as described. 3rd. The combination with a support, having means for holding alternate loops or bights of a filling, and with means for

imparting movement thereto, of a block or table, a slide mounted thereon, said block having reciprocation in one direction, and the slide being reciprocated at right angles to the line of movement of the block, and a guide carried by said slide, and having a double or compound reciprocation, partaking of the movement of both block and slide, to lay a filling wire upon opposite alternate points of said support, substantially as described. 4th. The combination with a suitable support, having a double series of alternating pins, of means for imparting movement in one direction thereto, a block or table having reciprocation parallel with the plane of movement, and a guide mounted upon a slide bar carried by said table and having reciprocation in a direction transverse to said plane of movement, substantially as described. 5th. The combination with a support, consisting of two similar discs, mounted upon an intermediate gear of less diameter, and having pins alternately projecting from their peripheries, of a block or table having reciprocation in the plane of rotation of said support, and a slide bar carried by said block and provided with a tubular guide arranged above the discs, with its lower end closely approaching their peripheries, said slide bar having a reciprocation transverse to the plane of rotation, substantially as described. 6th. The combination with a gripping device, consisting of two members, one being provided with seats or pockets and the other with points adapted to enter said seats, of means for giving movement thereto, and side winders arranged upon the opposite sides of said gripping device, and having tubular guides, the exit ends of which closely approach said gripper and revolve in circles of small diameter about the point of engagement of the two members, substantially as described. 7th. The combination with a gripping device, consisting of an upper and a lower member, the latter composed of discs mounted upon an intermediate gear and having in their projecting edges seats or pockets separated by rounded serrations and the former composed of a disc having its edge fitting between said discs and provided upon its opposite faces with plates having points which successively enter the seats or pockets, of gearing imparting movement to the lower member and side winders having tubular guides inclined to the axis or revolution, their exit ends closely approaching the opposite faces of the gripper and revolving the line of successive engagement of the points and seats, substantially as described. 8th. The combination, with a support consisting of two discs mounted upon an intermediate gear and having on their projecting peripheries pins arranged at suitable intervals, of a top guide having a double or compound reciprocation parallel with and transverse to the plane of rotation, a stripping plate having its end resting on the discs between the pins, a gripper having seats or pockets in one member and points upon another adapted to successively engage said seats, and side winders having tubular guides upon both sides of the gripper, the exit ends of said guides having revolution around a line drawn transversely through the point of engagement of the two members of the gripper, substantially as described. 9th. The combination, with a double series of radially projecting pins mounted on a rotating support, of a guide arranged near said support and adapted to permit the passage of the filling wire, the exit end of said guide being extended to lie and move inside the extremities of the said pins or between their ends and the supports carrying said pins, means for reciprocating said guide in a line parallel with the plane of revolution, and devices for imparting thereto a contemporaneous reciprocation at or about a right angle to said plane, substantially as described. 10th. The combination, with a gripper having devices for successively engaging a filling, the latter having portions which project beyond the said gripper on each side thereof, of side winders having guides for wire arranged to revolve around the projecting portions of the filling, substantially as described. 11th. The combination, with a suitable gripping or holding device adapted to engage with a filling portions of which project upon both sides of the gripper, of side winders having guides carrying the side wires, the exit or delivery ends thereof being brought close to the gripper and arranged to revolve around the portions of the filling projecting from the gripper, substantially as described. 12th. The combination, with a series of pins arranged upon a support at uniform intervals and alternating with a similar series arranged parallel therewith and at a suitable distance therefrom, of means for imparting a continuous movement to said support, a guide for the filling wire, means for reciprocating said guide in one direction parallel with the line of movement of the pins, a support in which said guide reciprocates, and means for imparting a simultaneous reciprocation to said support transverse to the line of reciprocation of the guide, the parts named being so timed that the guide is carried behind and then in front of a pin in one series and thence behind and then in front of a pin in the other and alternating series of pins, substantially as described.

No. 41,652. Furnace. (Fournaise.)

John H. Johnson and James Moran, both of Orange, Texas, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. A furnace comprising semicircular series of sets of metal plates, said plates being each provided with flanges encircling all the sides thereof and meeting the adjacent flanges of the adjacent plates of each series and set, meeting to form an approximately semicircular casing and semicircular end flanges, the front and rear end plates secured to said semicircular end flanges, and bolts passing through the meeting flanges, substantially as set forth. 2nd. In a

furnace, the casing consisting of semicircular series of sets of rectangular curved plates forming the sides and top of the same, said plates being each provided with flanges surrounding all four sides thereof and meeting the adjacent flanges of the adjacent plates of each series and set to form an approximately semicircular casing and semicircular end flanges, front and rear end plates secured to said semicircular end flanges, asbestos packing interposed between the various meeting flanges to form a cushion joint, the flue extending from one of said end plates, and bolts passing through the several meeting flanges, substantially as set forth. 3rd. In a furnace, the combination, with the casing having a flanged collar projecting from the rear end thereof, of the sectional flue comprising a series of independent reversely arranged pairs of semicircular plates having straight horizontal flanges along the sides thereof and semicircular flanges at their ends, the flanges of the plates and flue sections abutting and bolted together, substantially as set forth. 4th. The combination, with a furnace, of the sectional flue connected with said furnace and consisting in a series of reversely arranged pairs of upper and lower independent semicircular plates having straight horizontal flanges along the sides thereof and semicircular flanges at their ends, the flanges of the plates and flue sections abutting the ends of section of the flue terminating in circular flanges, cap plates removably secured to said circular flanges, asbestos packing interposed between the various meeting flanges to form a cushion joint, the supports receiving the lower semicircular sections of the flue, and bolts abutting the flanges together, substantially as set forth.

No. 41,653. Ball Bearing. (Coussinet à roulettes.)

Pierre Dansereau, Montreal, Quebec, Canada, 17th January, 1893; 6 years.

Claim.—The combination in a wheel and axle of the hub *c*, having lining *b*, axle *a*, having collar *m*, having groove *m'*, having a screwed outer end, having thimble *h*, provided with groove *i*, with nuts *g*, and caps *k*, with balls *f*. the whole substantially as and for the purposes set forth.

No. 41,654. Railway Spike. (Cheville de chemin de fer.)

Smith H. Bracey, Clarksburg, West Virginia, U.S.A., 17th January, 1893; 6 years.

Claim.—The herein described improved spike, the same consisting of the rectangular body terminating at its lower end in a driving point, and provided at its upper end, at its inner and outer sides with shoulders 13 and 14, the inner shoulder being disposed obtusely with relation to the shank body, and adapted to engage over and conform to the base of a rail, and the outer shoulder being in a plane below the inner shoulder, and the distance therefrom agreeing with the thickness of the base of the rail, and disposed at a right angle to the body portion of the spike, and terminating at its outer extremity in a spur or point 15, substantially as specified.

No. 41,655. Rotary Engine. (Machine rotatoire.)

Henry Raith, of Montreal, Quebec, Canada, 17th January, 1893; 6 years.

Claim.—1st. An engine, the working area of which is variable, for the purpose set forth. 2nd. An engine, the cylinder and piston area of which is variable, for the purpose set forth. 3rd. An engine, the location of the exhaust from which may be varied, for the purpose set forth. 4th. A rotary engine, having a series of work chambers or cylinders through which the steam, or like motive force, entering at one end of the series, passes in succession through them all and is exhausted at the opposite end, each work chamber or cylinder containing mechanism connected with a common shaft, extending through the several chambers upon which the steam acts to rotate the shaft. 5th. A rotary engine, having a series of work chambers or cylinders through which the steam, or like motive force, entering at one end of the series, passes in succession through any number or all, and is exhausted at an intermediate point, or at the opposite end of said series, each work chamber or cylinder containing mechanism connected with a common shaft extending through the several chambers upon which the steam acts to rotate the shaft, and each division between such chambers containing a two-way passage and controlling valve, as set forth. 6th. A rotary engine, having a series of cylindrical chambers arranged transversely to a common shaft and eccentric thereto, entry and exit ports respectively to and from the end chambers of said series, and internal communicating ports between the intermediate chambers. 7th. A rotary engine, having a series of cylindrical chambers arranged transversely to a common shaft and eccentric thereto, and with their several axes in differing relative positions one to the other, entry and exit ports respectively to and from the end chambers of said series, and internal communicating ports between the intermediate chambers. 8th. A rotary engine, having a series of cylindrical chambers arranged transversely to a common shaft and eccentric thereto, and with their several axes in differing relative positions one to the other, entry and exit ports respectively to and from the end chambers of said series, and two way passages between the chambers forming internal communicating ports, between the intermediate chambers and exhaust ports from each chamber, with valve mechanism for controlling such passages.

No. 41,656. Machine for Making Wire Netting.*(Machine à natter le fil de fer.)*

Alfred Naylor Pearson, Auburn, and Robert Penn, South Melbourne, both of Victoria, Australia, 17th January, 1893; 6 years.

Claim.—1st. The herein described method of manufacturing rectangular meshed wire netting, the essential feature of which consists in forming loops in a series of warp wires, then threading a woof wire or wires through such loops, and finally drawing the latter tightly around said woof wires; all substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawing. 2nd. In a machine for manufacturing rectangular meshed wire netting, a needle or shuttle (such as C) for carrying the woof wire or wires through loops in the warp wires, substantially as for the purposes herein described and explained, and as illustrated in the accompanying drawing. 3rd. In a machine for manufacturing rectangular meshed wire netting, the combination with the reciprocating needle, or shuttle (such as C) for carrying a woof wire or wires, through loops formed in warp wires of an adjustable lever, such as c', together with a cam, such as c'', the whole being constructed and arranged, substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawing. 4th. In a machine for manufacturing rectangular meshed wire netting, two pairs of gripping jaws, such as D, D', arranged to first grip the warp wires of the netting and then move towards each other to enable loops to be formed in said warp wires and afterwards move apart again, substantially as and for the purpose herein described and explained, and as illustrated in the accompanying drawing. 5th. In a machine for manufacturing rectangular meshed wire netting, a finger or fingers, such as E, arranged to be lowered into engagement with the warp wires of the netting, then to be rotated so as to form same into a loop, and then to be again raised out of engagement with such loop, substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawing. 6th. In a machine for manufacturing rectangular meshed wire netting, a socket or sockets such as F, in which the loops of the warp wires are made, and which afterwards serve to retain said loops in position whilst they are being drawn tightly around the woof wires, substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawing. 7th. In a machine for manufacturing rectangular meshed wire netting, a pair of gripping jaws, such as G, timed to open and close so as to grip the end of the woof wire, substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawing. 8th. In a machine for manufacturing rectangular meshed wire netting, the employment of fingers fitted with spring jaws arranged to engage with the warp wire so as to raise same previously to twisting it round to form a loop, substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawing. 9th. In a machine for manufacturing rectangular meshed wire netting, the employment of sockets formed with two notches or slits at right angles to each other, one being for the purpose of receiving the warp, and the other the woof wires, said sockets moreover forming a groove or channel for the needle carrying woof wire, the whole being constructed and arranged, substantially as and for the purposes herein described and explained, and as illustrated in the accompanying drawing.

No. 41,657. Cooking Utensil. (Ustensil de cuisine.)

Augusta Reuben Isaacs, New York, State of New York, U.S.A., 17th January, 1893; 6 years.

Claim.—The herein described cooking utensil, consisting of a perforated body open at top and bottom and provided with bearings at the top, an opening in one side and brackets on the inside in the plane of the opening, a perforated plate fitted to slide in the opening, resting upon the brackets and provided with a flange closing said opening, and a saucepan fitted in the top of the body and provided with trunions resting in said bearings, as specified.

No. 41,658. Axle Bearing. (Coussinet d'essieu.)

Hyppolite Joseph La Force, Toronto, Ontario, Canada, 17th January, 1893; 6 years.

Claim.—1st. In an axle bearing, the combination with a series of balls carried in an annular recess formed on the end of the hub or axle box, substantially as and for the purpose specified. 2nd. An axle bearing in which the weight is carried on balls held in a recess formed between the axle and its bearing box, in combination with a series of balls carried in an annular recess formed on the end of the hub or axle box, substantially as and for the purpose specified.

No. 41,659. Method of Making Articles from Paper.*(Méthode de fabrication d'objets de papier.)*

Louis Munsterburg, Berlin, Prussia, 17th January, 1893; 6 years.

Claim.—The hereinbefore described method of manufacturing bobbins, tool handles, and other articles from a composition including paper or paper waste, which consists, essentially, in mixing china clay or similar material with the paper in the proportion of about three to two and forming the mixture into a pulp with sufficient flour paste to give a suitable consistency for moulding, substantially as and for the purpose specified.

No. 41,660. Draft Rigging for Car Couplers.*(Accoutrement de tirage pour attelages de chars.)*

James Addison Hinson, Des Moines, Iowa, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. A draft plate for draw bar rigging, consisting of the back portion forming a chafing surface, the side flanges, the end cross pieces or stops, and the intermediate cross piece or stop, all projecting from the same side of said plate, substantially as described. 2nd. The combination with draft timbers having the grooves *f*, projections *g*, and wide recesses *h*, of a draft plate consisting of the back portion forming a chafing surface, the side flanges, the end pieces or stops, the ribs formed at the rear side near each end, and the recesses or grooves formed intermediate said ribs, whereby the outer face of said plate may be set flush with the face of the draft timber, substantially as described. 3rd. The combination, with the draft timbers and side plates, of a bar having its ends perforated and bent at right angles, and lugs cast or formed on the body of said bar at suitable distance from each end, substantially as described. 4th. A draw bar yoke for car couplers, formed in two pieces adapted to be rigidly secured to said bar and to be keyed together in rear of the rear follower plate, substantially as described. 5th. A draw bar yoke for car couplers, formed in two pieces having their forward ends bent at right angles and perforated and having oblong slots formed in their rear ends, in combination with a pin adapted to pass through said slots, substantially as described. 6th. The combination, with a draw bar yoke formed in two pieces having slots formed at their rear ends, of a pin adapted to enter said slots, and a pin or stem adapted to enter the rear end of the draw bar and having a slot at one end through which said first named pin passes, substantially as described. 7th. The combination, with a draw bar yoke formed in two pieces having slots formed in their rear ends, of the pin adapted to pass through said slots, a stem secured at one end to the draw bar and having a slot formed therein, and a key securing said pin in position, substantially as described. 8th. In a draw bar attachment, the combination of the draft timbers, the draw bars, the follower plates, draft plates located upon said draft timbers, a draw bar yoke formed in two pieces adapted to be rigidly secured to said bar, and to be connected in rear of the rear follower plate, said draft plates constructed with side and end flanges forming a chamber to receive the edges of the follower plates, substantially as described.

No. 41,661. Feed Regulator for Hoppers.*(Régulateur pour l'alimentation des trémies.)*

William Gribben and Joseph M. Gaige, both of Crosswell, Michigan, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In a feeder, the combination of a hopper provided with a feed opening, a cut-off arranged to regulate the size of the opening, a vertical shaft mounted in the hopper, a horizontal rod centrally secured to the vertical shaft, a sleeve loosely arranged on the shaft and connected with the cut-off and arranged above the horizontal rod, and hinged blades mounted on the horizontal rod and supporting the sleeve and adapted to raise and lower the same, whereby the cut-off will rise and fall, according to the bulk of the material within the hopper, substantially as described. 2nd. The combination, in a feeder, of a hopper provided with a feed opening, a cut-off arranged to regulate the size of the opening, a vertical shaft mounted in the hopper, a sleeve loosely mounted on the shaft and connected with the cut-off, and the hinged blades carried by the shaft and provided with cams supporting the sleeve and adapted to cause the same to rise and fall, substantially as and for the purpose described. 3rd. In a feeder, the combination of a hopper provided with a feed opening, a cut-off arranged to regulate the size of the opening, a vertical shaft mounted in the hopper, a horizontal rod centrally secured to the central shaft and extending therefrom a sleeve mounted on the shaft and connected with the cut-off, the blades provided at their upper edges with sleeves arranged on the horizontal rod, and the discs eccentrically secured to the inner ends of the blades and supporting the sleeve, substantially as described. 4th. In a feeder, the combination of a hopper provided with a feed opening and having a lower cylindrical portion 3, vertical ribs arranged at intervals on the cylindrical portion, a conical distributor, and a vertical shaft mounted in the hopper and carrying downwardly extending radial fingers arranged on the outer face of the conical distributor, substantially as described. 5th. In a feeder, the combination of a hopper provided with a feed opening, a conical dis-

tributer, the laterally extending portions 22, provided with longitudinal slots, the division board extending through the slots, the inclined deflectors provided at their sides with flanges 26, the triangular end pieces supporting the division boards and the deflectors, and the segmental guards inclined toward the deflectors, substantially as described.

No. 41,662. Filter for Water. (Filtre.)

Simon Leslie West, Washington, District of Columbia, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. A tank for holding drinking water, and a discharge pipe leading therefrom, in combination with a hot water delivery pipe for delivering water to said water tank, and a thermal valve for controlling the flow of water into said water delivery pipe, substantially as set forth. 2nd. In combination with a water heating apparatus, a water supply, a closed sterilized water service apparatus connected with said water supply, a thermal valve normally stopping the passage to said closed water service apparatus and operative by the temperature of the water of the water supply when at a germ destroying heat, and means for withdrawing the sterilized water at will from the closed sterilized water service apparatus, substantially as and for the purpose set forth. 3rd. A hot water circulating system, means for heating the water, and a drinking water tank, in combination with a delivery pipe leading from said hot water circulating system to said tank, a thermal valve controlled by the heat of the water in said hot water system, and controlling the outlet to said pipe, a discharge pipe leading from said tank to the place (or places) of use, and a filter for filtering the water before it reaches said thermal valve, substantially as set forth. 4th. The combination of a thermal valve, a water feed pipe leading thereto, a water delivery pipe of a drinking water distributing system leading therefrom, and means for heating the water in said water feed pipe, said thermal valve controlling the passage of water from said water feed pipe to said water delivery pipe, and the action of said thermal valve being controlled by the temperature of the water in said water feed pipe, substantially as set forth. 5th. The combination of a thermal valve which opens only at a temperature sufficiently high to destroy disease germs in water, a water feed pipe leading to said valve, a water delivery pipe of a drinking water distributing system leading therefrom, and means for heating the water in said water feed pipe, said thermal valve controlling the passage of water from said water feed pipe to said water delivery pipe, and the action of said thermal valve being controlled by the temperature of the water in said water feed pipe, substantially as set forth. 6th. The combination of a thermal valve which opens only at a temperature sufficiently high to destroy disease germ in water, a water feed pipe in which the water is constantly under pressure, said water feed pipe leading to said thermal valve, means for heating the water in said water feed pipe, and a water delivery pipe of a drinking water distributing system leading from said thermal valve, said thermal valve controlling the passage of water from said water feed pipe to said water delivery pipe, and the action of said thermal valve being controlled by the temperature of the water in said water feed pipe, substantially as set forth. 7th. A thermal valve which opens only at a temperature sufficiently high to destroy disease germs in water, a water feed pipe leading to said valve, and a water delivery pipe of a drinking water distributing system leading therefrom, said thermal valve controlling the passage of water from said water feed pipe to said water delivery pipe, and the action of said thermal valve being controlled by the temperature of the water in said water feed pipe, substantially as set forth. 8th. The combination of a thermal valve, a water feed pipe leading thereto, a water feed delivery pipe of a drinking water distributing system leading therefrom, and means for heating the water in said water feed pipe, said thermal valve controlling the passing the passage of water from said water feed pipe to said water delivery pipe, and the therm sensitive portion of said thermal valve being surrounded by the water in said water feed pipe whereby the action of said thermal valve is controlled by the temperature of the water in said water feed pipe, substantially as set forth. 9th. The casing O, having the inner heating chamber 13, and the outer jacket 14, and the thermal valve located within the casing, and controlled by the temperature of the water within said heating chamber in combination with the boiler F, the range or stove 11, the circulating pipe G leading from the boiler to said range or stove, the pipe H leading from said range or stove back to the boiler, said outer jacket 14, being connected with said pipe H so as to be a part thereof, the water feed pipe P leading to said heating chamber 13, and the delivery pipe N, of the sterilized water service apparatus leading from said heating chamber 13, the outlet from said heating chamber to said pipe N, being controlled by said thermal valve, substantially as set forth. 10th. The filter composed of the casing T having water passages *m, n, o, p, l, and 2*, in combination with the hollow turning plug U having a filtering medium within it, and removable cap, and provided with ports *r, w, x and y*, adapted to register with said water passages, whereby the current of the water may be reversed through the filtering medium, and the filtering medium may be cleaned, and replaced, substantially as set forth. 11th. The filter composed of a casing having water passages therethrough, and a hollow turning plug within the casing

having a filtering medium within, and having ports adapted to register with said water passages, whereby the current of water may be reversed through the filtering medium, and the filter medium may be cleaned, and replaced, substantially as set forth.

No. 41,663. Spring Board for Wood Choppers.

(*Planche à ressort pour bûcherons.*)

Joseph B. Brickley, Port Angeles, Washington, U.S.A., 17th January, 1893; 6 years.

Claim.—The combination of the standing board B, the circular bar c, and the driving bar D, with the hooks E, E', and F, F', substantially as and for the purpose hereinbefore set forth.

No. 41664. Car Coupler (Attelage de chars.)

Charles Augustus Pooley, Buffalo, New York, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In a vertical plane coupler, the draw head A, and coupling jaw B, having coupling arm *b*, and locking arm *c*, in combination with the swinging lock C, having retaining arm *e*, and operating arm *f*, and means other than said coupling jaw for swinging said lock open, substantially as set forth. 2nd. In a vertical plane coupler, having a draw head and a horizontally swinging coupling jaw, a swinging lock, and means other than said coupling jaw for swinging said lock open, constituting with said coupling jaw the sole movable and operative parts of the coupler, said lock having an operating arm constituting a part thereof, said operating arm co-operating with said coupling jaw, and acting both to cause the lock to engage with and lock the coupling jaw, substantially as set forth. 3rd. In a vertical plane coupler, the draw head and the horizontally swinging coupling jaw having coupling arm and locking arm, in combination with the horizontally swinging lock, within said draw head, said lock having two forwardly projecting arms on opposite sides of the axis of said lock, the rear one of said arms being always located behind and in the path of the locking arm of said coupling jaw, thereby constituting an operating arm, and the other and forward one of said arms being adapted to swing in front of said locking arm of said coupling jaw, thereby constituting a retaining arm therefor, and means other than said coupling jaw for swinging said lock open, substantially as set forth. 4th. In a vertical plane coupler, the draw head and the swinging coupling jaw having coupling arm and locking arm, in combination, with the swinging lock journaled on the same side of the draw head as the said coupling jaw, said lock having a retaining arm and an operating arm, said retaining arm having its inner locking face concentric with the axis of the lock, and the coupling arm of said coupling jaw having its locking face curved to fit said concentric locking face of said retaining arm, and means other than said coupling jaw for swinging said lock open, substantially as set forth. 5th. In a vertical plane coupler, a draw head and a horizontally swinging coupling jaw journaled at one side of said draw head, said coupling jaw having a coupling arm and a locking arm, in combination, with a horizontally swinging lock journaled within said draw head on the same side thereof as said coupling jaw, and having a retaining arm engaging with the free end of said locking arm of said coupling jaw, the path of the free end of said locking arm of said coupling jaw, when said locking arm is coupled with said retaining arm, intersecting at an acute angle a radial line drawn from the axis of the lock to the locking face of said retaining arm, and means other than said coupling jaw for swinging said lock open, substantially as set forth. 6th. The draw head A, having incline E, and the jaw B, having arms *b, c*, in combination, with the lock C, having arms *e, f*, and riding on said incline, substantially as set forth. 7th. The draw head A, having flange or rib *t*, and the jaw B, having arms *b, c*, in combination with the lock C, having arms *e, f*, and having nose *r*, co-operating with said flange or rib *t*, substantially as set forth. 8th. The draw head A, having bearing *w*, and the jaw B, having arms *b, c*, in combination, with lock C, having arms *e, f*, pin *d*, and boss *u*, co-operating with said bearing *w*, substantially as set forth.

No. 41,665. Digester for Paper Pulp.

(*Pourrissoir de pâte à papier.*)

Charles Curtis, Newton, Massachusetts, and Nathaniel Morrison Jones, Bangor, Maine, both in the U.S.A., 17th January, 1893; 6 years.

Claim.—1st. A digester, comprising in its construction an external metal shell, a lining of blocks or sections of artificial stone, and an inner lining composed of independent plates or sheets of acid resisting material, each of said plates or sheets being engaged independently with one of the said blocks or sections, as set forth. 2nd. A digester, composed of an external metal shell, a lining of blocks or sections of artificial stone, and an inner lining composed of plates or sheets *c*, having their edges bent to form flanges which are interposed between the said blocks or sections, as set forth. 3rd. The combination, in a digester, of the blocks or sections of artificial stone, and the lining plates or sheets each engaged at its margin with the margin of one of said blocks, as set forth. 4th. The com-

bination, in a digester, of the blocks or sections of artificial stone having grooves b^2 in their abutting edges, and the lining plates or sheets having beaded flanges, the beads of which are engaged with said grooves, as set forth. 5th. A digester, comprising an external shell, a lining composed of blocks or sections of artificial stone, acid resisting lining plates placed on the inner surfaces of said blocks, and strips of acid resisting material covering the joints between said plates.

No. 41,666. Holder for Reins. (Accroche-rînes.)

Henry G. Weatherill, Elgin, Illinois, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. As an improved article of manufacture, the herein described rein holder formed of a single piece of wire to provide the rigid attaching shank, the curved yielding arm lying substantially at right angles to the shank, and the intermediate coil, substantially as described. 2nd. A rein holder formed from a single piece of wire, and provided with the rigid screw shank B, the eccentric coils c, c' , and the curved yielding arm d , extending at right angles to the shank B, substantially as shown and described.

No. 41,667. Support for Railway Signal and Switch Rods. (Support pour signaux et tirant d'aiguilles de chemin de fer.)

Arthur George Evans, Westminster, London, England, 17th January, 1893; 6 years.

Claim.—1st. The construction and use of an elongated path or slot upon which a movable top roller is free to travel to and fro, the said roller having movement communicated to it by point rod used or employed for communicating to and fro movements on railways in connection with railway signalling apparatus, the said roller or pulley having spindles or pivots of relatively smaller diameter, substantially as hereinbefore described. 2nd. In supporting guides for rods employed in railway signalling apparatus communicating to and fro movements on railways, the combination of a bottom roller or pulley provided with spindles or pivots of relatively smaller diameter arranged to roll either on a recessed shelf on the side cheek of a standard or along the lower side of an elongated slot provided in such standard, and of a top roller also provided with spindles or pivots of relatively smaller diameter arranged to roll on a recessed shelf on the side cheek of a standard or upon the upper or lower side or path of an elongated slot provided in the standard, substantially as and for the purposes herein set forth, and as illustrated upon the drawings. 3rd. In supporting guides for rods communicating to and fro movements on railways, the construction and general arrangement of pulleys or rollers revolving in elongated slots or in recessed shelves in the side cheeks of the standards, substantially as described and illustrated on the accompanying drawings.

No. 41,668. Hat and Clothes Brush Combined.

(*Brosse pour les chapeaux et habits combinés.*)

Henry Joseph Sims, Ottawa, Ontario, Canada, 17th January, 1893; 6 years.

Claim.—1st. A combined hat and clothes brush, consisting of an ordinary brush having a square end cut close to the bristle setting, and the bristles at said end slanting outwards, and a narrow brush equal in length to the width of the main brush and adjustably connected to the main brush with its back against said square end by means of lever arms pivoted to the edges of the main brush and controlled by a pair of shoulder jointed links, substantially as set forth. 2nd. The combination of a brush A, having a square end a , the narrow brush B, having its lower edge concaved, a lever arm C, at each side, having one end rigidly secured to the brush B, and the shank pivoted to the edge of the brush A, and the other end pivoted to a link, a pair of links D, D', shoulder jointed to fold up and form a straight line, and provided with a pin or button d' , at the joint and having one end pivoted to the lever C, and the other to the edge of the brush A, and a spring E, secured to the edge of the brush A, and pressing upon the lever arm, substantially as set forth. 3rd. The combination of the brushes A and B, adjustably connected so that the latter abuts with its back against the end of the former, a pair of lever arms C, having one end rigidly connected to the brush B, and their shanks pivoted to the edges of the brush A, and a pair of links D, D', pivoted at one end to the end of each lever arm and at the other to the edge of the brush A, substantially as set forth.

No. 41,669. Piano Action. (Action de piano.)

Joseph Herrburger, Paris, France, 17th January, 1893; 6 years.

Claim.—The combination of a jack, having a rearwardly projecting nose c^1 , and a forwardly projecting head c^2 , that extends above the nose, with a mortised hammer butt and a hook secured thereto, substantially as specified.

No. 41,670. Means and Apparatus for Heating and Ventilating Railway Carriages and Other Places. (Moyen et appareil de chauffage et de ventilation des chars de chemin de fer.)

Robert Bell, 29 Lynedock Street, Glasgow, Lanark, Scotland, 17th January, 1893; 6 years.

Claim.—1st. In apparatus for heating or ventilating railway carriages and the like, the arrangement and combination of a main pipe or conductor beneath the carriage, branch pipes leading from same into the carriage and air inducing devices at the ends of said main pipe with or without the addition of a heating apparatus. 2nd. In heating railway carriages and the like, the arrangement and combination of a heating pipe A, having branches a , an upright pipe B, with regulating cock D, and a steam pipe E, whereby fresh atmospheric air, in a heated condition is supplied. 3rd. In ventilating railway carriages and the like, the arrangement and combination of pipe A, branches a either with or without the upright pipe B, and regulating cock D, whereby fresh atmospheric air is supplied. 4th. In heating railway carriages and the like, the arrangement and combination of a heating pipe A, having branches a , an upright pipe B, with cock D, a revolving fan g , and steam pipe E, whereby fresh atmospheric air, in a heated condition is supplied.

No. 41,671. Cash Recorder. (Registre de monnaie.)

Azel Clarence Hough, South Butler, New York, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In combination, with a casing having a slot, a paper receiving drum having a portion of its periphery adjacent to said slot to serve as a support for the paper while record is being made thereon, substantially as described. 2nd. In combination, with a casing having a slot, a paper receiving drum serving to support the paper while an entry is being made through the slot, one edge of the slot being formed by a plate that extends crosswise of and rests yieldingly upon the drum periphery to adapt itself to varying thicknesses of paper thereon, substantially as described. 3rd. In combination, with the casing having a slot, a paper receiving drum, serving to support the paper while an entry is being made through the slot, and a spring plate having a free edge that rests upon the drum periphery and forms an edge of the slot, and adapts itself to varying thicknesses of paper thereon, substantially as described. 4th. A recording mechanism employing a movable record receiving strip having an entry slot affording access to the latter, and a transparent section that is narrower than the width of the record receiving strip, and the entry slot to disclose only a portion of the entry, substantially as and for the purpose described. 5th. The combination, with a casing having a slot, a paper receiving drum having a portion of its periphery adjacent to said slot, to serve as a support for the paper while an entry is being made, a yielding plate having its free edge resting on said periphery to form one side of said slot, and a transparent plate forming the other side of said slot, and suitable means for rotating the drum, substantially as described. 6th. In a cash recorder employing a movable record strip, a drum for receiving and moving said strip as it rotates, and means for rotating said drum step by step, comprising a ratchet wheel attached thereto, the pivoted pawl carrying arm, and a sliding drawer adapted to raise said arm, substantially as shown and described. 7th. In a cash recorder employing a movable record strip, a drum to receive and move said strip, and support the same while a record is being made, and means for rotating the drum comprising a ratchet wheel secured thereto, a pawl to co-operate with said wheel, the pivoted arm carrying said pawl, whose pivot is the drum axis, the downward extension on said arm, and a sliding drawer having a cam surface to engage said extension, to raise said arm, substantially as described. 8th. In a cash recorder employing a movable record strip, the standards to support the latter in the form of a roll, a spring plate bearing against the roll, the drum receiving the strip directly from the roll, the roller depending from the casing top and engaging the strip between the roll and drum, the sliding spring actuated drawer, and the pawl and ratchet mechanism operated by the latter as it moves outward to rotate the drum, substantially as described. 9th. In combination with the recording mechanism of a cash recorder, a sliding drawer adapted to actuate said mechanism, the lock for the drawer having several keys, any of which are adapted to be set to release said drawer, and an alarm mechanism comprising a gong or the like on which several tones are adapted to be struck when an improper key is actuated, substantially as described. 10th. The combination, with the recording mechanism of a cash recorder, a sliding drawer adapted to actuate said mechanism, the lock for the drawer having several keys, any of which are adapted to be set to release said drawer, a gong or the like, and the two hammers to sound different alarms on the gong, according to the keys that are actuated, substantially as described. 11th. In combination, a lock having several keys, any one of which are adapted to be set as releasing keys, and an alarm mechanism adapted to sound several tones when an improper key is actuated, substantially as described. 12th. In combination with a cash drawer and its locking mechanism, a gong, a vibratory hammer, and the spring actuated motor to actuate said hammer, substantially as described. 13th. In combination with a cash drawer and its locking mechanism, a gong, a spring actuated motor having an escape wheel and pallet, the pallet arbour, the hammer on the

pallet arbor, the detent arm also on said arbor, and the keys adapted to release said arm to permit the motor to actuate the hammer, substantially as described. 14th. In combination, the sliding locking belt, the swinging frame to move the latter, and the series of keys adapted to obstruct or permit said frame to be moved to slide said belt, substantially as specified. 15th. In combination, the locking bolt, the swinging frame to actuate the same, the series of keys, and an adjustable stop device or screw carried by each key to co-operate with said frame, substantially as specified. 16th. In combination, the locking bolt, the pivoted swinging frame, the arm thereon engaging the bolt, the series of pivoted keys, and the adjustable screw carried by each key adapted to co-operate with said frame, substantially as described. 17th. In combination, the locking bolt, the pivoted swinging frame, the arm thereon engaging the bolt, the series of pivoted keys, the adjustable screw carried by each key, the rib or flange on the frame serving as a gauge for the adjustment of the screw, and the key or rod attached to the frame to swing the same, substantially as described. 18th. In combination with the pivoted keys, the rock shaft T, an arm on said shaft for each key adapted to be engaged thereby, and the alarm mechanism actuated by said rock shaft, substantially as described. 19th. In combination with the pivoted keys, having each a lateral extension, the arm for each key on said shaft T, adapted to be engaged by said extension, the crank arm on the shaft, the alarm mechanism, and the rod between the latter and said crank arm, adapted to set said alarm mechanism in operation, substantially as shown and described and for the purpose specified. 20th. In combination, the sliding locking bolt, the pivoted swinging frame connected with the bolt, the key for swinging the frame, the spring for maintaining the said latter parts in their normal position, pivoted keys carrying screws to co-operate with said frame, the bell hammer adapted to be actuated by said frame, the rock shaft, the arms thereon, one for each key, the spring actuated motor having an escape wheel and pallet, the second hammer carried by the pallet arbor, the detent arm also on said arbor, the rod connecting said arm with the rock shaft, and the forks on the keys embracing said shafts, substantially as specified. 21st. In combination, the several keys, the swinging frame, the bell hammer carried by the pivoted plate *w*, the pivoted dog *w'*, carried by said plate, and the lug on the frame to engage said dog, substantially as described. 22nd. A housing for a series of keys, having indices on its outside to designate the position of the several keys, substantially as described and for the purpose specified. 23rd. A cash recorder, having a suitable casing, a cash drawer locking mechanism for the drawer actuated by several keys, and a housing for the keys that inclose them on all sides except the bottom, substantially as described.

No. 41,672. Neck Yoke. (Volée d'avant.)

James H. Guion and George Bell, both of San Diego, California, U.S.A., 17th January, 1893; 12 years.

Claim.—1st. A curved or crescent shaped neck yoke G, having tips, ferrules or thimbles K, at both sides provided with loops I, J, K, or other devices for connecting to or attachment of the harness, and a hole Q, at the middle of the neck yoke, for connection by a bolt to a clevis D, attached to the pole, as set forth. 2nd. The combination with the pole A, of the clevis D, pivotally connected to the end by a draw bolt C, and a curved neck yoke G, pivotally connected to said clevis by a bolt E, substantially as set forth.

No. 41,673. Game. (Jeu.)

Charles E. O. Hager, Hagersville, Ontario, Canada, 17th January, 1893; 6 years.

Claim.—In a game board, the cavities C, D, G and M, raised portions E, I and I', rounded narrow pathway F, sunken broad road K, side passages H, with declivities L and L', passage way J, and raised ledge B, as described and shown.

No. 41,674. Spring Bottom for Upholstry. (Fond à ressort pour meubles.)

Ozello R. Hunt, Minneapolis, Minnesota, U. S. A., 17th January, 1893; 6 years.

Claim.—1st. A spring bottom comprising a frame, and a tightening wire or wires connecting the springs and frame, substantially as set forth. 2nd. The combination, with a frame, of coil springs, wire or wires connecting their heads to the frame, and a tension of the frame, whereby the lateral wires may be tightened and the springs held in place, substantially as set forth. 3rd. The combination, with coil springs having lateral wires extending from their heads, of tightening wires having crooked portions for connecting them to the spring heads, for the purpose set forth. 4th. A spring bottom comprising a frame, coil springs having lateral extension from their heads, wire connections between such extensions and the frame, and tightening wires engaging the spring heads and exerting tension against said connections, substantially as set forth. 5th. A coil spring having the wire extending laterally from its final coil, substantially as set forth. 6th. A series of helical springs having substantially as set forth. 6th. A series of helical springs having substantially as set forth. 7th. A helical spring for a lounge, chair or similar piece of furniture, having its terminal wire at the head extending laterally, and an eye hook formed at its

extremity, substantially as and for the purpose set forth. 8th. In a lounge or similar article of furniture, a series of helical springs having interlocked lateral extensions from their heads, wires connecting them to the frame, and other wires exerting tension in opposition to said connections, substantially as set forth. 9th. The combination, with helical springs having lateral extensions from their heads provided with eyes or hooks at the extremity, of a frame, wires connecting the extensions to the frame, and other wires connected to the spring heads, having tension away from the frame connections, substantially as set forth.

No. 41,675. Mould for Casting Car Wheels.

(Moule de fonderie pour roues de chars.)

George W. Cushing, Evanston, Illinois, and John W. Rampe, Boston, Massachusetts, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. The combination, in a mould for casting car wheels, of a cope, a drag, an interposed main or tread surface chill, a vertical pouring head inclosing a main runner or pouring channel, a horizontal runner communicating therewith and located below the mould cavity, vertical flange runners connecting said horizontal runner with the flange space of the mould cavity, and an edge chill forming the wall of the mould cavity on the side of the rim space thereof opposite the flange, substantially as set forth. 2nd. The combination, with a mould for casting car wheels, of a cope, a drag, an interposed main or tread surface chill, a vertical pouring head inclosing a main runner or pouring channel, a horizontal runner communicating therewith and located below the mould cavity, vertical flange runners connecting said horizontal runner with the flange space of the mould cavity, an edge chill forming the wall of the mould cavity on the side of the rim space thereof opposite the flange, and a ring chill forming the wall of the mould cavity at and adjacent to the inner and upper portion of the rim space thereof, substantially as set forth. 3rd. The combination, in a mould for casting car wheels, of a cope, a drag, an interposed main or tread surface chill, a vertical pouring head inclosing a main runner or pouring channel, a horizontal runner communicating therewith and located below the mould cavity, vertical hub runners connecting said horizontal runner with the lower portion of the hub space of the mould cavity, and a hub chill forming the upper end wall of the hub space, substantially as set forth.

No. 41,676. Wrench. (Clé à écrou.)

William Bill, Montreal, Quebec, Canada, 17th January, 1893; 6 years.

Claim.—1st. A wrench comprising a shank, a fixed jaw solid upon the shank, a sliding jaw having teeth formed on its face contiguous to the shank teeth formed upon the face of the shank contiguous to the sliding jaw, the teeth of the sliding jaw adapted to mesh with the teeth of the shank, a lever pivotally connected to said shank, and adapted to lift the said sliding jaw outward to disengage the teeth of the sliding jaw from the teeth of the shank, substantially as and for the purpose described. 2nd. A wrench comprising a shank, a fixed jaw solid upon said shank, a sliding jaw, a lever pivotally connected to said shank, said jaw adapted to slide upon said lever, substantially as and for the purpose specified. 3rd. A wrench comprising a shank, a fixed jaw solid upon said shank, said shank terminating in and forming a handle, a lever pivotally connected to said shank, a sliding jaw sliding along said lever, teeth formed on said sliding jaw, teeth formed on said shank, the teeth on said sliding jaw adapted to mesh with the teeth on said shank to arrest the longitudinal movement of said sliding jaw, said lever adapted to move said jaw outward from said shank, and to throw the teeth of said jaw out of engagement with the teeth on said shank, a longitudinal slot formed in said shank, a pin secured to said sliding jaw and adapted to enter said slot, substantially as and for the purpose described. 4th. A wrench comprising a shank, a fixed jaw solid upon said shank, a face plate for said jaw adapted to be interchanged and means for securing said plate to said jaw, substantially as and for the purpose set forth.

No. 41,677. Separator for Ore.

(Appareil pour séparer le minéral.)

Charles John Reed, Orange, New Jersey, U. S. A., 17th January, 1893; 6 years.

Claim.—1st. In an ore operator, a hollow drum having a roughened interior, substantially as described. 2nd. An ore separator, having a hollow drum with a roughened interior, in combination with magnets arranged exterior to the drum, substantially as described. 3rd. An ore separator, having a hollow rotary drum, with a roughened interior through which the powdered ore is passed, substantially as described. 4th. An ore separator, having a hollow rotary drum roughened on its interior, in combination with magnets arranged exterior to the drum, substantially as described. 5th. An ore separator, having a hollow rotary drum through which the powdered ore is adapted to pass longitudinally, in combination with electro-magnets arranged exterior to the drum and in close proximity thereto, and means for creating a blast through the drum, said drum being roughened on its interior, substantially as described. 6th. In an ore separator, provided with a hollow rotary drum having means on its inner surface for agitating the powdered ore as it passes longitudinally through the drum, substantially as described. 7th. An

ore separator, provided with a hollow rotary drum having agitators carried by its inner surface, in combination with magnets arranged in close proximity to the exterior of the drum, substantially as described. 8th. In an ore separator, a hollow revolving drum through which the ore passes longitudinally, in combination with a fixed magnet outside of the drum, substantially as described. 9th. In an ore separator, a hollow revolving drum through which the ore passes longitudinally, in combination with fixed magnets outside of the drum, substantially as described. 10th. In an ore separator, a hollow revolving drum through which the ore passes longitudinally, in combination with fixed magnets outside of the drum, an air current or blast, substantially as herein set forth. 11th. In an ore separator, a hollow revolving drum through which the ore passes longitudinally, in combination with fixed magnets outside of the drum, an air current or blast, a hopper or feed box, substantially as herein set forth. 12th. In an ore separator, a hollow revolving drum through which the ore passes longitudinally, in combination with fixed magnets outside of the drum, an air current or blast, a hopper or feed box and a travelling belt, substantially as herein set forth.

No. 41,678. Joint for Rails. (Joint de rails.)

John Ely Sarvis, Newburg, New York, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In a rail joint of the class described, the combination, with the rail A, having the vertical recess, the vertical wall arranged diagonally to the length of the rail, and the vertical projection, of the rail B, having the recess, vertical wall, and projection, the chair having the flanges, as described, and the wedge pieces, as and for the purpose set forth.

No. 41,679. Steadying Device for Portable Engines.

(Appareil de stabilité pour machines portatives.)

Edward Charles Emde, Tacoma, Washington, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. A steadying device for portable engines, comprising a base, and two legs held adjustably on the base and adapted to engage the axle or hub of the wheel of the engine, one of the said legs being made in sections fitted to slide one on the other, substantially as shown and described. 2nd. A steadying device for portable engines, comprising a base, and two legs held adjustably on the base and adapted to engage the axle or hub of the wheel of the engine, one of the said legs being made in sections fitted to slide one on the other, and a shifting mechanism, substantially as described, for sliding the sections of the sectional legs, as set forth. 3rd. A steadying device for engines, provided with a leg made in two sections, fitted to slide one on the other, a toothed bar held on one of the sections, a link engaging the said toothed bar, a handle pivoted with the said link, and arms connected with the said handle and pivoted on the other leg section, substantially as shown and described. 4th. A steadying device for engines, provided with a leg made in two sections, fitted to slide one on the other, a toothed bar held on one of the sections, a link engaging the said toothed bar, a handle pivoted with the said link, arms connected with the said handle and pivoted on the other leg section, and a second link pivoted on the said arms and adapted to engage the said toothed bar, substantially as shown and described. 5th. A steadying device for portable engines, comprising a base, toothed bars secured on the said base, and legs provided with shoes engaging the said toothed bars, one of the said legs being made in sections fitted to slide one on the other, substantially as shown and described. 6th. A steadying device for portable engines, comprising a base, toothed bars secured on the said base, legs provided with shoes engaging the said toothed bars, one of the said legs being made in sections fitted to slide on one or the other, and a shifting device, substantially as described, for shifting the sections of the sectional leg, as set forth.

No. 41,680. Apparatus for Starting Vehicles. (Appareil de mise en mouvement des chars.)

Joseph Desmedt, Bruges, Belgium, 17th January, 1893; 6 years.

Claim.—1st. The combination, of several mechanisms, in a complete apparatus composed of a frame V, with recuperative springs X, X, carrying the rack K, which acts upon, or is acted upon by a pinion L, according to whether the force is to be stored or restored, this pinion being made to engage by the action of an operating lever A, within reach of the driver or conductor of the vehicle, either with a central pinion E, keyed on to an axle, or with a main gear wheel with inside teeth D, concentric with and external to the preceding, and in one piece with it, as well as the method of release by the motive power itself (horse, steam, gas, etc.) acting upon a pivoted lever I, through the intervention of traction rods H, H¹, which pivoted lever moves a pawl W, which lifts a vertical spring stop J, the object of the whole being to store the force in order to restore it on re-starting after stopping by effecting the starting of the said vehicle automatically without effort on the part of the motor, whether animate or inanimate, whatever it may be. 2nd. In particular, the following members for releasing and stopping: (a) the stop J, falling into the retaining notches ν and ν^1 , of the rack K, with the purpose of arresting the motion of the rack at the end of each of its movements executed to compress the recuperative springs X, X, according as the vehicle is travelling in one or the other direction; (b) the lock M, made up of two slides in which a bolt O, and a catch

P, move the latter which acts upon the bolt being operated by a cam R, driven by its coming against the projections of the rack K, with the object of stopping the latter at the end of its travel, executed to compress the recuperative springs X, X; (c) the ratchet and pawl mechanism, consisting of a pair of pawls T, T¹, combined, for the purpose of stopping the frame B, in order to render false movements of the operating lever A impossible; (d) the check springs V, V¹, of the frame for the purpose of always bringing back the operating lever A to its initial position after each movement; (e) the special constructing of the driving pinion F, playing upon its key, and having a central cavity for the lodgment of a spiral spring P², acting in two directions, with the object of causing it to engage infallibly with the gearing opposed to it; (f) the ball bearings of the traction bars G, G¹, the object being to facilitate the traction upon the recuperative apparatus.

No. 41,681. Drying Rack. (Séchoir.)

Edward Batters and Michael Duggan, both of Toronto, Ontario, Canada, 17th January, 1893; 6 years.

Claim.—1st. The combination, with the stove pipe, of a collar, having a series of pockets, a series of racks having turned ends which fit within the pockets and hold the racks horizontal, and means whereby the collar may be clamped in position on the stove pipe, as and for the purpose specified. 2nd. The combination, with the stove pipe, of a collar having two series of vertical pockets, each of the lower series being situated and stamped out slightly to one side of each of the upper series, and a series of racks composed of double wire, the inner ends of which are bent and fit within the upper and lower series of pockets, and means whereby the collar is clamped on the stove pipe, as and for the purpose specified. 3rd. The combination, with the stove pipe, of a collar having a series of pockets, a series of racks having turned ends which fit within pockets and hold the racks horizontal, the collar having turned ends which are slightly separated and have bolts D, passing through them, and adjusting nuts on the bolts, as and for the purpose specified.

No. 41,682. Rotary Table. (Table tournante.)

Jeffrey H. Burland, Montreal, Quebec, Canada, 17th January, 1893; 6 years.

Claim.—1st. A collating table, comprising a rotary circular or disc or annular table K, suspended by rods J, from an overhead frame secured to a vertical shaft B, supported in a hanger A, bolted to a ceiling or other fixture, said shaft provided with means for rotating and stopping the rotation of the table, as set forth. 2nd. A rotary collating table K, supported by a hanger A, bolted to a ceiling or other fixture, a shaft B, journaled in said hanger, a frame G hung to said shaft and thereby rotated, rods J, suspended from said frame, and a circular table K, supported by said rods, said shaft provided with a belt pulley D, friction coupling E, lever F, rod G, and pedal H, to rotate and stop said shaft and table at the will of the collator, as set forth. 3rd. A rotary circular collating table K, suspended by rods J, from an overhead frame C, hung to a shaft B, provided with a driving belt pulley D, and friction coupling G, said rods held adjustably to said frame by binding screws M, whereby the table can be adjusted to a suitable height from the floor, and raised to an overhead position after loosening the screws, as set forth.

No. 41,683. Nailing Implement.

(Machine à chasser les clous.)

Herbert McCormack, Elgin, Illinois, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In a nailing implement, the combination with the driving mechanism and a supply chute, of a head at one end of the driving mechanism, having a bore for the driver into which the chute leads, a spring controlled arrester normally tending to extend into the path of the driver and operating to hold the nail to be driven in alignment therewith and removed thence by the driving stroke thereof, and feed regulating mechanism connected with and actuated by the movements of the arrester produced by those of the driver, to control the nails and feed them successively to the bore in the head against the arrester, substantially as described. 2nd. In a nailing implement, the combination with the driving mechanism and a supply chute, of a head at one end of the driving mechanism, having a bore for the driver into which the chute leads, a spring controlled arrester normally tending to extend into the path of the driver and removed thence by the driving stroke thereof, and feed regulating mechanism yieldingly supported in its bearings and connected with and actuated by the movements of the arrester produced by those of the driver to control the movements of the arrester successively to the bore in the head against the arrester, substantially as described. 3rd. In a nailing implement, the combination with a reciprocable driver in a tube having a head C, at one end, of a spirally arranged chute D, leading to the bore in the head and provided on the upper side of its bend u with a guard a , open along one side, a spring controlled arrester in the head normally tending to extend into the path of the driver and removed thence by the driving stroke thereof, and feed regulating mechanism connected with and actuated by the movements of the arrester produced by those of the driver, to control the nails and feed them successively to the bore in the head against the arrester, substantially as described.

4th. In a nailing implement, the combination, with the driving mechanism and a supply chute, of a head at one end of the driving mechanism having a bore for the driver into which the chute leads, a spring controlled arrester G, in the head, having a nail seat *e*, in its convex side and normally tending to extend into the path of the driver and removed thence by the driving stroke thereof, and feed regulating mechanism connected with and actuated by the movements of the arrester produced by those of the driver, to control the nails and feed them successively to the bore in the head against the arrester, substantially as described. 5th. In a nailing implement, the combination, with the driving mechanism and a supply chute, of a head at one end of the driving mechanism having a bore for the driver into which the chute leads, a spring controlled arrester normally tending to extend into the path of the driver and removed thence by the driving stroke thereof, and feed regulating mechanism comprising a rack bar engaging toward one end a guide in the arrester, and a pinion journaled near and engaged by the teeth on the opposite end of the rack bar and normally extending into the path of the nails to the said bore, substantially as described. 6th. In a nailing implement, the combination, with the driving mechanism and a supply chute, of a head at the end of the driving mechanism having a bore for the driver into which the chute leads, a spring controlled arrester normally tending to extend into the path of the driver and removed thence by the driving stroke thereof, and feed regulating mechanism comprising a rack bar yieldingly held in engagement near one end, with a guide on the arrester, and a pinion yieldingly journaled near and engaged by the teeth on the opposite end of the rack bar, and normally extending into the path of the nails to the said bore, substantially as described. 7th. In a nailing implement, the combination, with the driving mechanism and a supply chute, of a head at one end of the driving mechanism having a bore for the driver into which the chute leads, a spring controlled arrester normally tending to extend into the path of the driver and removed thence by the driving stroke thereof, and feed regulating mechanism comprising a rack bar having near one end a stud engaging a curved guide in the arrester and provided with teeth near its opposite end, and a pinion journaled in position to engage the teeth of the rack bar and extend into the path of the nails and provided with a peripheral recess, substantially as described. 8th. A nailing implement comprising, in combination, a tube A, containing a reciprocable driver B, and having a head C, containing a bore *o*, for the driver, a spiral chute D, secured to the tube and leading into the said bore, and flaring at the under side of its bend *u*, a guard *a*, at the upper side of the said bend, a spring controlled pivotal arrester G, in the head, normally tending to project into the said bore, and provided with a seat *s*, in its convex side and with a guide *f*, and feed regulating mechanism comprising a rack bar E, having a stud *k*, engaging the guide in the arrester, and a pinion F, journaled to engage the teeth of the rack bar, and extend into the path of the nails and provided with a peripheral recess *g*, substantially as described.

No. 41,684. Bill of Fare. (Menu.)

Dugald H. Roberts, Detroit, Michigan, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In an order tablet, the combination of a frame adapted to hold detachably a bill of fare, and an indicating margin adapted to receive indicating marks to indicate an order, the indicating margin being separate from and not a portion of the bill of fare, whereby the bill of fare may be repeatedly changed irrespective of the indicating margin, substantially as described. 2nd. As a new article of manufacture, an order tablet comprising a frame, an indicating margin, a removable bill of fare arranged between the indicating margin and the frame, substantially as described. 3rd. The combination of a holder carrying indicating marks to designate table and seat, and a bill of fare detachably connected thereto, substantially as described. 4th. An order tablet, consisting of a holder having thereon indicating marks for table and seat, a margin adapted to receive indicating marks capable of removal therefrom, and a bill of fare detachably secured to said holder in such manner that the indicating marks can be placed opposite items printed thereon and designate them, substantially as described.

No. 41,685. Cigar Bunching Machine.

(*Machine à lier les cigares.*)

Alexander Gordon, Detroit, Michigan, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In a cigar bunching machine, an apron and a bunching table yieldingly supported in vertical guides and provided with a plunger and the filler, in combination with a vertically reciprocating guide as described. 2nd. In a cigar bunching machine, the combination, with the apron, of a bunching table yieldingly supported, and provided with a pocket for the filler, a plunger mounted above said pocket, and means for actuating said plunger to depress the bunching table by compressing the filler in its pocket, substantially as described. 3rd. The combination of a bunching table having a pocket for the filler, a filler receptacle mounted above said pocket and having an open bottom, and an aperture for receiving the binder projecting from the binder table, a table for supporting the binder in front of said receptacle, an apron and a vertically reciprocating plunger

registering with the filler receptacle and with the pocket in the bunching table, substantially as described. 4th. The combination of the vertically yielding bunching table supported in vertical guides and provided with a pocket for the filler, the filler receptacle secured above said pocket, the bunching cloth adapted to close the bottom of said receptacle, the apron and the reciprocating plunger adapted to be projected through the filler receptacle into the pocket of the bunching table, substantially as described. 5th. The combination of the vertically yielding bunching table provided with a pocket for the filler, the reciprocating plunger for compressing the filler in said pocket, the apron and mechanical means for locking the bunching table into position after its depression by the plunger, substantially as described. 6th. The combination of a bunching table yieldingly supported in vertical guides and provided with a pocket for the filler, a filler receptacle secured above said pocket, means for holding the binder in proper relation to said receptacle, a reciprocating plunger adapted to depress the bunching table by compressing the filler in the pocket of the same, means for temporarily locking the bunching table in its depressed position, and an oscillating frame carrying the bunching rollers, a bunching cloth, all arranged to operate while the bunching table is in its depressed position, substantially as described. 7th. In a cigar bunching machine, the combination with the bunching table provided with a pivot for the filler, of the filler receptacle secured above said pocket and provided with the aperture L, and shield *g*, the bunching cloth forming the bottom of said receptacle above the bunching table in front of the filler receptacle, the reciprocating plunger secured in a vertical guide frame having the aperture M therein above the filler receptacle, substantially as described. 8th. The combination with the bunching table yieldingly supported in vertical guides, the lever *o*, carrying the bunching table, the revolving cam *q*¹, arranged to hold the bunching table in its depressed position, the apron and the oscillating frame carrying the bunching rollers, substantially as described. 9th. The combination with the apron and the bunching table supported in vertical guides, of the lever *o*, and spring *q*², yieldingly carrying said table, the shaft *n*, provided with the cam *q*¹, adapted to hold the lever *o* in a depressed position during a portion of the revolution of shaft *n*, the oscillating frame carrying the bunching rollers, and provided with the arm H¹, and the wrist pin *r*, carried by the cam and adapted to engage with said arm, substantially as described. 10th. The combination of the bunching table yieldingly supported in vertical guides and provided with a pocket for the filler, the filler receptacle mounted above the pocket in said bunching table, the vertically reciprocating plunger, the lever *k*, and its intermediate connection for actuating said plunger, the roller *l*, on said lever, and the revolving cam *m*, provided with the cam groove *n*¹, adapted to engage said roller *l*, to actuate the plunger during a portion of the revolution of the cam *m*, substantially as described. 11th. The combination of the apron, the bunching table supported in vertical guides, the lever *o*, and spring *q*², carrying said bunching table free to yield under pressure, the reciprocating plunger, the lever *k*, and its actuating connection with said plunger, the roller *l* on said lever, the oscillating frame carrying the bunching rollers, the arm H¹ on said frame, the revolving shaft *n*, the cams *q*¹ and *m* on said shaft, and the wrist *r*, on the cam *m*, substantially as described.

No. 41,686. Crushing Machine. (Machine à broyer.)

Robert McCully, Philadelphia, Pennsylvania, U.S.A., 17th January, 1893; 6 years.

Claim.—1st. In a crushing machine, the combination of the gyratory shaft E, sleeve K, having an outside taper and gyrating with shaft E, the top plate A, having central hub *a*¹, provided with a bore or opening *a*, a shoulder *a*², at the bottom of said bore, a washer *k*, between said shoulder and sleeve, and a nut or supporting device *e*¹, at the top of shaft E, and resting on sleeve K, substantially as set forth. 2nd. In a crushing machine, the combination of a gyratory shaft E, sleeve K, gyrating with said shaft, the top plate A, having a suitably formed central bore or opening *a*, to admit of the gyration of said shaft, shoulder *a*², at the bottom, and a shoulder *a*³, near the top of said bore, and a loose washer K¹, resting on said shoulder *a*³, and fitting said sleeve, substantially as set forth. 3rd. In a crushing machine, the combination of shaft E, having vertical seats or recesses *l*, crusher head F, secured to the shaft E, below said vertical seats or recesses, keys *l*¹, in said recesses, overlapping the crusher head, and a band or ring *l*², surrounding said keys, substantially as set forth. 4th. In a crushing machine, the combination of a gyratory shaft E, a crusher head F, on said shaft, recesses *l*, and keys *l*¹, on the shaft above the crusher head, a ring *l*², for said keys, and a vertically rigid key *f*, at the bottom of the crusher head between it and said shaft, substantially as set forth. 5th. In a crushing machine, the combination of a gyratory shaft E, chute *c*, having tubular shaft opening *c*¹, collar *m*¹, on the exterior periphery of opening *c*¹, and below its top edge, and a rigid or metal plate shield *m*, surrounding said shaft and shaft opening, and having a depending edge flange *m*², the bottom side of shield *m*, resting upon the top edge of opening *c*¹, and the under side of flange *m*², resting upon collar *m*¹, substantially as and for the purpose set forth. 6th. In a crushing machine, the combination of gyratory shaft E, driving wheel G, plate *g*¹, separate from and resting on the top of said wheel and gyrating with said shaft, and flexible hood *g*², fastened at its upper edge to said shaft, and its

lower edge resting loosely on plate g^1 , substantially as set forth. 7th. In a crushing machine, the combination of gyrating shaft E, driving wheel G, the plate g^1 , having central oiling chamber g^2 , and a second oiling chamber g^3 , surrounding said central chamber, said plate resting upon wheel G, and loosely keyed to said shaft, and hood G surrounding or inclosing the oil chambers in said plate, substantially as set forth. 8th. In a crushing machine, the combination of gyratory shaft E, driving wheel G, having hub g , the bottom plate D, having well d , concentric oiling chamber d^1 , communicating with said well, and a cover or washer d^2 , at the top of said chamber d^1 , and fitting said hub, substantially as set forth. 9th. In a crushing machine, the combination of bottom plate D, having well d , an oil-chamber d^1 , the top edge of which is provided with a shoulder d^2 , driving wheel G, having hub g , and washer or cover d^3 , on shoulder d^2 , and fitting said hub g , substantially as set forth. 10th. In a crushing machine, the combination of a gyratory shaft E, a driving wheel G, counter shaft H, gearing h , between said shaft and wheel, fixed disc P, loose wheel N, having arms n , straddling said disc, and break bar R, having end and central bearings in said wheel N, and arms n , and collar p , substantially as set forth. 11th. In a crushing machine, the combination of a gyratory shaft E, driving wheel G, counter shaft H, the fixed disc P, loose wheel N, having arms n , straddling said disc, registering openings in said arms n , disc P, and wheel web, break bars R, passing through said openings, and end pivoted covers or washers r , substantially as set forth. 12th. In a crushing machine, the combination of a fixed crushing chamber B, a gyratory shaft having a crusher head F, a driving eccentric G, for said shaft, bottom plate D, having a well d , an adjustable bottom d^1 , in said well, and a toggle or knuckle T, substantially as and for the purpose set forth. 13th. In combination in a crushing machine, a vertically adjustable gyratory shaft E, having a cylindrical upper end, a frame A, having in its upper part a , a fixed sleeve K, provided with an opening or bearing having a taper or inclination corresponding to the pitch or angle of the shaft, and driving mechanism for the shaft, substantially as set forth. 14th. In a crushing machine, the combination of a gyratory shaft E, an upper bearing a^1 , and an eccentric driving bearing g , for the lower end of the shaft, both of which bearings are inclined or tapered to correspond to the angle or pitch of the shaft, substantially as set forth. 15th. The combination of a crushing chamber B, an eccentric g , having an oblique opening, an adjustable gyratory shaft E, having a crusher head F, and a fulcrum for said shaft, the relative position of which to the eccentric is unchangeable when the shaft is adjusted, substantially as set forth. 16th. In a crushing machine, the combination of a top plate A, having central hub bore a , with bottom flange a^2 , sleeve K, having a cylindrical bore and an outside taper resting on flange a^2 , and gyratory shaft E, having upper cylindrical end fitting the bore of said sleeve, substantially as set forth. 17th. In a crushing machine, the combination of the top plate A, having central hub bore a , with enlarged upper end a^1 , and bottom flange a^2 , the gyratory shaft E, having upper cylindrical end, screw threaded at e , and provided with nut e^1 , a key and key seat in said nut and shaft end, and sleeve K, having a cylindrical bore and a tapered periphery, substantially as set forth. 18th. In combination with a gyratory shaft, a detachable crusher head F, having at its bottom end in its bore a vertical recess with lower open end, a correspondingly located key f on said shaft for engagement with said crusher head, recess, for preventing horizontal and downward movement of the crusher head, and devices on the shaft at the top of the crusher head for preventing the upward movement of the crusher on the shaft, substantially as set forth. 19th. In a crushing machine, the combination of gyratory shaft E, bottom frame plate D, having well d , an annular oil and sediment chamber d^1 , surrounding the top of said well, and having an overflow pipe d^{13} , leading from the top of said annular oil chamber to the outside of said plate, and having a stop cock d^{14} , at its exterior end, and having an oil supply for said annular oil chamber, substantially as set forth. 20th. The combination of a gyratory shaft E, the driving eccentric G, having at its upper end a chamber or enlarged bore, and oiling devices for said chamber or bore, substantially as set forth. 21st. In a crushing machine, the combination of a vertically adjustable gyratory shaft E, the driving eccentric G, having on its working faces soft metal segments s , s^1 , united by transverse integral bars g^6 , in corresponding openings in said eccentric, substantially as set forth. 22nd. In a crushing machine, the combination of a vertically adjustable gyratory shaft E, the driving eccentric G, having upper and lower flanges, exterior circular shell of soft metal s , inner segment s^1 , and integral transverse bars s^2 , connecting said segment and shell, substantially as set forth. 23rd. In a crushing machine, the combination of a plate A, having central hub bore with inwardly projecting bottom flange a^2 , gyratory shaft E, having upper cylindrical end, sleeve K, having a cylindrical bore fitting said shaft end supported on flange a^2 , and a screw threaded connection between said sleeve and shaft, substantially as set forth. 24th. The combination of a bearing plate A, having a bore with inwardly projecting flange a^2 , a gyratory shaft having a cylindrical end, a sleeve K, having a cylindrical bore fitting said shaft end and supported on said flange and the outside periphery of the sleeve, the bearing surfaces of said bore, and of its inwardly projecting flange for said sleeve being configured to admit of the sleeve assuming the pitch line or angle of said shaft, substantially as set forth. 25th. In a stone breaker, the combination of a vertically adjustable gyratory shaft having at its upper end an outside bearing a , and a crusher head below said bearing, a

driving wheel having an eccentric bore for the lower end of the shaft, and a knuckle or toggle step bearing T, engaging the lower end of said shaft, said toggle being so situated that it always points away from the most eccentric portion of the wheel, thereby causing it to incline constantly toward that part of the crusher head which is in action, substantially as set forth. 26th. In a gyratory crusher, a casing section C, having man hole opening c^1 , for access to the driving mechanism, substantially as set forth. 27th. The casing section C, having chute opening c^2 , counter shaft opening c^3 , and man hole opening c^4 , with or without cover c^5 , substantially as set forth.

No. 41,687. Cart Top. (*Soufflet de voiture.*)

Harnan Bunker and James Herbert McKeggie, both of Barrie, Ontario, Canada, 21st January, 1893; 6 years.

Claim.—A vehicle top or shade, in which the covering material is supported on each side of the vehicle by a pair of bars, hinged or pivoted together and adjustably connected near their joint to a post attached to the side of the vehicle, the said bars being supported so as to permit of the adjustment, substantially as and for the purpose specified.

No. 41,688. Band Saw-mill. (*Scierie à ruban.*)

Theodore S. Wilkin, Milwaukee, Wisconsin, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. In a band saw-mill, the combination of the following elements, to wit: a main frame, upper and lower saw carrying wheels mounted therein, and an engine mounted upon the main frame, and having its piston rod connected to the lower saw wheel shaft, all substantially as shown. 2nd. In a band saw-mill, the combination of the following elements, to wit: a main frame, upper and lower saw carrying wheels mounted therein, an engine mounted upon the main frame and having its piston rod connected to the lower shaft, and a counter weight, all combined and arranged substantially as shown and described. 3rd. In a band saw-mill, the combination, with the main frame, and the upper and lower saw carrying wheels and their shafts, of the cranks O, Q and P, pitman W, W, connected with the cranks O, Q, and provided at their upper ends each with a counter weight, a steam cylinder L, a piston working therein and provided with a stem S, a block V, secured to said stem, and a pitman R, connecting the block with the crank R, all substantially as shown.

No. 41,689. Band Saw-mill. (*Scierie à ruban.*)

Theodore S. Wilkin, Milwaukee, Wisconsin, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. In a band saw-mill, the combination, with the main frame and the saw carrying wheels C E, of the boxes or bearings F F for the shaft of the wheel E, levers K and L, pivoted to the main frame at opposite ends, a yoke or frame M, supporting said levers at a point between their ends, a spring supporting the yoke or frame, and rods resting at their lower ends upon the levers K L, and supporting at their upper ends the boxes or bearings F. 2nd. In a band saw-mill, the combination with the fixed shaft B and its wheel C, of the vertically adjustable shaft D, provided with a wheel E, a series of levers K L, pivoted at opposite ends to the main frame, a yoke or frame supporting said levers at a point between their ends, upright rods resting at their lower ends upon the levers and adapted to support the upper saw carrying wheel and its shaft, and a spring acting upon the yoke or frame and adapted, substantially as shown and described, to maintain a constant and uniform tension upon the saw. 3rd. In a band saw-mill, the combination with the main frame, of the levers K L, pivoted at their opposite ends, a shaft D, provided with a saw carrying wheel E, intermediate connecting mechanism, substantially such as shown, between the shaft and levers, an equalizing yoke or frame at a point between their ends, and a spring acting in conjunction with said equalizing yoke or frame, all substantially as shown, whereby both ends of the shaft will be raised and lowered equally and uniformly. 4th. In combination with frame A, shafts B D, end wheels C E, boxes F F, and pedestals G G, supporting the ends of the shaft D, pivoted levers K and L, rods I, being at opposite ends against the pedestals and the levers, a yoke M, supporting the levers at a point between their ends and provided with an upwardly extending stem N, a plate O, and springs P, interposed between the plate O and the main frame, all substantially as shown. 5th. In a band saw-mill, the combination, with the vertically adjustable shaft D, levers K L, and intermediate connections arranged substantially as shown, of the yoke M, supporting said levers and provided with wheels or rollers c , ways or guides formed upon the main frame to receive the rollers, and a spring acting in conjunction with the yoke or frame to create the necessary tension upon the saw.

No. 41,690. Apparatus for Burning Coal.

(*Mode de combustion du charbon.*)

Samuel J. Miles, Chicago, Illinois, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. The combination, in a furnace, of a series of combustion chambers, a grate in each of such chambers, elevated bridge walls separating such chambers, a series of downwardly depending

curtain walls, one following each bridge wall, and the lower ends of such curtains being lower than the upper ends of the bridge walls, so that the particles of fuel and the products of combustion from the first chamber are deflected down upon the second chamber, and so on through the series, and a blast fan and a series of pipes leading therefrom and discharging through such grates. 2nd. In a furnace, the combination of a series of perforated grates or grate bars, with one or more normally air tight ash chambers thereunder, and blast pipes, which discharge into such ash chambers, said ash chambers having apertures and slides in the bottom and inclined sides. 3rd. In a furnace, the combination of a series of perforated grate bars or plates, with a series of perforated blast pipes thereunder and therealong, and ash chambers thereunder provided with inclined walls. 4th. In a furnace, the combination of a series of perforated grate bars or plates, with a series of perforated blast pipes thereunder and therealong, and ash chambers thereunder provided with inclined walls, and a perforated bottom and slide whereby the ash chamber may be made air tight or may be opened to permit its contents to flow out.

No. 41,691. Spring for Watch Cases.

(*Ressort de boîte de montre.*)

Willis S. Richardson, Newark, New Jersey, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. As an article of manufacture, a watch case spring, consisting of a spring proper, having attached thereto a sectional jointed back piece. 2nd. A watch case spring, constructed with a spring proper, and a sectional back piece secured to the former, the adjacent or free ends of the latter being joined or secured together after insertion in the case centre, substantially as described. 3rd. A watch case spring, consisting of a spring proper, made of a single piece of metal, and having secured to the back thereof a back piece severed at some portion of its length, and having its adjacent or severed ends pinned or otherwise secured together, after being inserted in the case centre, substantially as described. 4th. A watch case spring, consisting of a spring proper B, a sectional back piece C, the adjacent ends of the latter being joined by a pin or screw, passing through the watch case centre, substantially as described.

No. 41,692. Grain Drill. (*Semoir en ligne.*)

George Wilson Kirkpatrick, Macedon, New York, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. In a grain drill, the combination, with the wheeled main frame, of the bearing plates applied to its sides, and the truss rods attached to the upper and lower ends of the plates and extended transversely of the frame, substantially as described and shown. 2nd. In a grain drill, the main frame, the bearing plates applied to the outer faces of its side bars, and two truss rods passed respectively through the upper and lower ends of the plates and extended across the frame with a bearing on an intermediate bridge or support. 3rd. In a grain drill, and in combination with the main frame, the runner hoes arranged in two independent ranks or rows, substantially as and for the purpose described. 4th. In a grain drill, the runner hoes, each provided with a follower wheel, said hoes arranged alternately in two ranks or rows, the follower wheels of the front row substantially in line with the point at which the rear hoes enter the soil. 5th. In a grain drill, the combination of a hoe, a wheel carrying arm extending rearward therefrom, and a follower wheel carried within said arm, said wheel constructed with three spokes or less, substantially as and for the purposes described. 6th. In a grain drill, a hoe, in combination with an arm extending rearward therefrom and pivoted to swing upward and downward, and a follower wheel carried by the rear end of said arm, said wheel having an angular space of 120° or more between its spokes, substantially as and for the purpose described. 7th. In a grain drill, the combination of the wheel having the annular flange or ring, and the wheel carrying arm having lips projected within said ring and over the ends of the hub.

No. 41,693. Agitator for Mixed Paint.

(*Agitateur pour peinture.*)

Charles John McLennan, Toronto, Ontario, Canada, 21st January, 1893; 6 years.

Claim.—1st. The combination, with the paint receptacle, of a series of beaters journalled in bearings in proximity to the bottom of the receptacle, and means whereby the said beaters are rotated, substantially as described. 2nd. The combination, with a paint receptacle, of a series of spirally twisted bars forming beaters *b*, the bars being journalled in the end bar C, and each adjacent bar being rotated in the opposite direction by the chain of gear pinions D, as and for the purpose specified. 3rd. The combination, with a paint receptacle, of a series of spirally twisted bars forming beaters *b*, the bars being journalled in the end bar C, and each adjacent bar being rotated in the opposite direction by the chain of gear pinions D, driven through the sprocket pinion E, sprocket chain F, and sprocket pinion G, on the driving spindle I, as and for the purpose specified. 4th. The combination, with the series of rotating beaters driven as specified, of an open work protecting frame held in position by the supports C, C', immediately above the top of the rotating beaters, as and for the purpose specified.

No. 41,694. Wooden Vessel. (*Ustensil en bois.*)

Edwin M. Reese, Santa Paula, Ventura County, California, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. A wooden vessel provided with transverse openings through its sides, widening toward their outer ends in the direction of the depth of the vessel, a hoop or band encircling the vessel adjacent to said openings, and movable rivets or pins headed at their inner ends within the vessel and engaging at their outer ends, said hoop or band preventing it from dropping off of the vessel and permitting it to be drawn thereon as the vessel shrinks, substantially as set forth. 2nd. A wooden vessel having opposite transverse openings through it, the outer ends of the openings widening in the direction of the depth of the vessel, movable headed pins or rivets extending through the said openings and engaging at their outer ends one of the vessel hoops or bands, and bail connections for said pins, substantially as set forth. 3rd. A wooden vessel having opposite transverse openings widening at their outer ends in the direction of the depth of the vessel, braces within the vessel and apertured, in register with said openings, a band or hoop encircling the vessel and having apertures registering with the wide ends of the openings, and the movable pins or rivets extending through the braces and hoop and headed at their ends, substantially as set forth. 4th. A wooden vessel having opposite transverse openings widened vertically toward their outer ends, braces within the vessel having apertures registering with said openings, a band or hoop encircling the vessel and having apertures registering with the wide ends of the openings, movable rivets or pins extending through said braces and hoops and headed at their ends, the vertically movable bail arms having eyes at their lower ends receiving the said rivets or pins behind the hoop or band, substantially as set forth.

No. 41,695. Over Shoe. (*Clagues.*)

Thomas Clearihue, Brockville, Ontario, Canada, 21st January, 1893; 6 years.

Claim.—As an improved article of manufacture, a moose, elk or deer skin moccasin or over shoe, the sole and upper A, made in one piece, and united to vamps C, and front D, said vamps and front connected by a bellows tongue B, and a combined rubber foxing and sole or shoe F, connected to the outside of said sole and upper and stitched to said upper along the edge, said sole provided with coarse corrugations H, and the vamps provided with lacing studs E, the whole as set forth.

No. 41,696. Shirt. (*Chemise.*)

Isaac J. Cooper, Toronto, Ontario, Canada, 21st January, 1893; 6 years.

Claim.—A shirt provided with a neck band, comprised of two or more sections, one of said sections provided with projections, and the other section provided with pockets into which are adapted to enter the said projections, substantially as and for the purpose specified.

No. 41,697. Saw Attachment. (*Attache pour scies.*)

Bernard Gallagher, Lynn, and Rufus Augustus Johnson, Saugus, all in Massachusetts, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. The saw supporting and guiding mechanism, consisting of the standard *f*, duly supported and the links *h*, *i*, pivoted to said standard and to the rear part of the saw frame, and the links *c*, *d*, *e*, pivoted to said standard and to the front part of the saw frame, substantially as specified. 2nd. A saw connected with standard *f*, by links, substantially as described, and said standard pivoted in block *k*, so as to admit its rotation upon its own axis, in manner as specified. 3rd. In combination, with a saw supported and arranged to operate, substantially as described, the blocks *j*, *k*, secured together so as to be varied in plane with a vertical joint in block *k*, and the vice connected to said blocks by rod *m*, substantially as specified. 4th. In combination, with a saw mounted in attachments to operate as specified, and a vice constructed and arranged to grip the article to be severed by the saw, the rod *m* secured in block *i*, and adjustably connected with the vice jaw *q*, so as to adjust the vice in its position relatively to blocks *j*, *k*, substantially as specified.

No. 41,698. Composition for Removing Varnish and Paint from Surfaces. (*Composition pour enlever le vernis ou la peinture.*)

George L. Ball, Alleghany, Pennsylvania, U.S.A., 21st January, 1893; 6 years.

Claim.—The herein described composition of matter for removing paint or varnish from wood or other substances, consisting of benzol, fusel oil and alcohol, mixed in about the proportions stated.

No. 41,699. Nut Lock. (*Arrête-écrou.*)

Cullen Kitridge Whittier, Joseph Wellington Campion and John Ernest William Macfarlane, all of Vancouver, British Columbia, Canada, 21st January, 1893; 6 years.

Claim.—1st. A lock nut provided in one face with a series of slots extending from the periphery to the central opening of the nut, as and for the purpose set forth. 2nd. A lock nut constructed of case hardened metal, and provided in one face with a series of slots

radiating from its central opening and extending through its outer edge or periphery, substantially as and for the purpose set forth. 3rd. The combination, with a lock nut provided upon one face with a series of slots extending from the periphery to its inner opening, of a key having one of its ends fitted to enter the slots, the entering end of the key being provided with a cutting surface bevelled from the centre upon both sides of the key, as and for the purpose specified. 4th. The combination, with a bolt, a nut screwed upon the bolt having slots produced in one of its faces extending from the periphery to its central opening, and a key of harder material than that of which the bolt is composed, fitted at one end to enter the slots in the nut and to engage with the threads upon the bolt, the entering extremity of the key being formed with a cutting edge having bevelled side surfaces, as and for the purpose set forth. 5th. The combination, with a bolt, of a lock nut constructed of a metal harder than that of which the bolt is made, the said lock nut being provided with slots in one of its faces, extending from its central opening out through its periphery, and a key of harder material than that of the bolt, said key having its ends fitted to enter the slots in the nut, the entering end of the key being provided with a cutting edge essentially V-shaped in cross section, as and for the purpose set forth. 6th. The combination, with a bolt, of a nut screwed thereon, said nut being provided with slots in one of its faces, extending from its periphery to its central opening, and means, substantially as shown and described, for upsetting the thread of the bolt in the slots of the nut, whereby two spurs are formed in the slots of the nut, engaging with opposite sides, a space intervening the spurs, as and for the purpose set forth. 7th. The combination, with a bolt, of a nut screwed thereon, said nut being provided with slots in one of its faces, extending from its periphery to its central opening, and spurs formed upon the threaded surface of the bolt, integral therewith, two spurs being located in a slot in engagement with opposite side walls, a space intervening the spurs, as and for the purpose set forth.

No. 41,700. Process of Casting Cases for Blasting Purposes. (*Procédé de moulage de cartouche pour mines.*)

Jacob Paulus, Berlin, assignee of Nicolaus Schmitt, Kuppersteg, German Empire, 21st January, 1893; 6 years.

Claim.—1st. The improvements in the manufacture of cases for cartridges, detonators, percussion caps and the like, consisting in forming said cases by casting in metals and metallic alloys capable of being melted at a low temperature, substantially as described. 2nd. Cases for cartridges, detonators, percussion caps and the like, made from metals and metallic alloys, by casting, such metals or alloys being capable of melting at a low temperature, substantially as described.

No. 41,701. Scalloping Device for Sewing Machines. (*Appareil à festonner pour machines à coudre.*)

George Washington Kemp and Alexander Gilbert Forbes, both of Montgomery, Alabama, U.S.A., 21st January, 1893; 6 years.

Claim.—1st. An attachment for sewing machines, consisting of a supporting frame, comprising a base plate, an upwardly projecting portion which is apertured for the reception of a pivot bolt and outwardly extending portions *b*¹, through which passes a reciprocating bar having a slotted end, a disc provided centrally with an aperture countersunk to receive the head of the pivot bolt, a friction disc located between the disc and upwardly projecting portion of the frame, a vertical bar having a slot, through which passes a set screw for holding the same in engagement with the disc, an actuating arm upon the bolt, which connects the disc to the frame, said arm being bent and provided with means for engagement with the needle bar of the sewing machine, said arm carrying a pawl which engages with the face of the disc, whereby the vertical reciprocating motion of the needle bar horizontally reciprocates the bar *E*, said attachment being in combination with a ruffler, the ruffler being carried by the pressure bar, the parts being combined and organized, substantially as shown. 2nd. In a scalloping attachment for sewing machines, the combination with a ruffling blade, and means for operating it, of the frame made up of a single piece and provided with an upwardly projecting portion *b*, apertured for the reception of a pivot bolt, said frame also having outwardly projecting portions *b*¹, a disc *F*, having a recessed aperture in which the bolt lies, and a friction disc *m*, a slotted bar *I*, connected to the disc by a set screw *i*¹, the lower end of said bar being attached to a reciprocating bar *E*, having a slotted end, an actuating arm pivoted upon the bolt *d*, said arm being bent and adapted to engage with the needle bar, the parts being organized, substantially as shown, and for the purpose set forth. 3rd. In a ruffling attachment for sewing machines, the combination of a baseplate having an upwardly projecting portion with a rectangular aperture, a bolt adapted to engage with said aperture and retain upon the upwardly projecting portion a rotary disc *F*, a bent arm mounted upon the pivot bolt, said arm carrying a spring pawl which is adapted to engage with the disc *F*, washers *m* and *e*, interposed between the upwardly projecting portion of the frame and the disc *F*, and actuating arm, means for adjusting the tension of the parts, a slotted bar *I*, and set screw for holding the

same in engagement with the plane face of the disc *F*, said slotted bar being connected to the reciprocating bar *E*, said bar having at one end a slot *e*¹, through which the fabric to be ruffled passes, the parts being organized, substantially as shown, and for the purpose set forth.

No. 41,702. Car Coupler. (*Attelage de chars.*)

William Horace Violett, Grand Junction, and John Alpha Valentine, Denver, all of Colorado, U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. An improved car coupler, having a draw head, a coupling pin, a main pin support operating in the link mortise, a gravity pin holder operating in the upper pin aperture, adapted to swing under the pin when elevated and arranged to be swung out of such position by the main support as it drops under such pin aperture, substantially as and for the purpose described. 2nd. The combination of the draw head, a gravity pin support operating in the link mortise, formed with a cam groove, a pin holder operating in the upper pin aperture, having a projection fitting the groove in the main pin support, the said holder adapted to swing under the pin when elevated, the projection adapted to be engaged by the main support when the said support drops to its lowermost position to support the pin, substantially as and for the purpose described. 3rd. In a car coupling, the combination of the draw head formed with the usual pin apertures, and with an upwardly projecting portion forming an abutment, the link mortise having an upwardly and rearwardly inclined portion opening through the top of the projecting portion of the draw head, said portion having depressions in its sides, and a cover plate formed with lateral flanges having finger portions adapted to be bent into engagement with the said depressions, all arranged as shown and for the purpose described. 4th. The improved car coupling herein described, comprising the draw head, the coupling pin, a main gravity pin support, a supplemental gravity pin holder arranged to drop by gravity in one direction and to be swung back by the main support as it drops by gravity, all substantially as and for the purpose described. 5th. The improved car coupling herein described, comprising a draw head having usual pin apertures, the coupling pin, and formed with a link mortise having an upwardly and rearwardly extending portion, the main pin support arranged to operate by gravity in said mortise and formed with a cam groove, a swinging pin holder having a body portion operating in said mortise transversely to the main pin support, said holder having an arm projecting in the upper pin aperture when down in its operative position, and with a projecting lug arranged for engagement with the cam groove in the main support, substantially as and for the purpose described. 6th. The combination of the draw head, the coupling pin, and the pin lifting mechanism, including a lifting arm expandible longitudinally and movable laterally and vertically, substantially as shown and described. 7th. In a car coupling, substantially as described, a pin lifting arm expandible longitudinally, substantially as shown and described. 8th. The combination, in a car coupling, with the car body, the draw head movable longitudinally, and the coupling pin, of a lifting arm hinged to the car body, its front end connected with the pin, said arm formed of a rigid rear member, and a front member movable longitudinally in the rear member, substantially as and for the purpose described. 9th. The combination, with the car body, the draw head, and the coupling pin, of a rock shaft journalled on the car body, a pin lifting arm secured to such shaft, an abutment for limiting the upward movement of the lifting arm, said arm having its front portion formed extensible and adapted to be moved laterally, substantially as and for the purpose described. 10th. In a car coupling, substantially as described, the combination, with the car body, the movable draw head, and the coupling pin, of a rock shaft journalled on the car body and movable sidewise in its bearings, one of such bearings formed with an abutment and an upwardly inclined recess, said shaft having an outwardly extending rigid arm formed with a socket portion at its end, a pin lifting arm connected with the pin at its front end, its rear end fitting the socket of the rigid arm and having a pivotal bearing longitudinally movable in such socket, and means for rocking the shaft to lift the pin arm, all arranged substantially as shown and described.

No. 41,703. Oil Cup. (*Godet à huile.*)

The Penberthy Injector Company, assignee of William Albert Downes, all of Detroit, Michigan, U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. In an oil cup of the kind described, the combination, with the casing and depending nipple and flange integral therewith, having an opening therein, and a plunger having a central opening and a reduced portion of smaller diameter than the opening in the casing and nipple, of a cap having a screw threaded central opening and openings equi-distant from the said opening, a bifurcated screw threaded stop in said central opening, and a spring actuated latch *I*, in said bifurcation, adapted to be inserted in the openings around the centre, substantially as described. 2nd. In an oil cup, the combination, of the casing, the reciprocating plunger therein, a cap for the casing having a filling aperture, a valve to close said aperture, an adjustable stem for regulating the throw of the plunger, said stem being supported in the valve for the filling aperture, substantially as described. 3rd. In an oil cup, the combination, of the casing, the reciprocating plunger therein, a cap for the casing having

a filling aperture, a valve to close said aperture having a central hub passing through the cap, an adjustable stem for regulating the throw of the valve supported in said hub, and means for connecting and disconnecting said hub and stem, whereby the stem may be adjusted independent of the valve, or may be used to turn the valve, substantially as described. 4th. In an oil cup, the combination, of the cap having a filling passage therein, a disc valve bearing against the inner face of the cap, a scutcheon secured to said hub outside the cap, and means for turning said hub, substantially as described. 5th. In an oil cup, the combination, of the cap, having perforations therein, a hollow hub passing through the cap having an interior thread, an adjustable stem having a threaded exterior passing through the hub, a disc on the lower end of the hub within the cup, a scutcheon on the upper end of the hub outside the cap, said disc and scutcheon controlling the upper and lower ends of the perforations in the cap, a binding nut on the hub above the scutcheon, and a reciprocating plunger below the stem, substantially as described. 6th. In an oil cup, the combination, with the perforated cap, of a disc for closing the lower end of the perforations, and a scutcheon for closing the upper end thereof, substantially as described.

No. 41,704. Galvanic Battery. (Batterie galvanique.)

Ivar H. Enholm and George W. Venable, both of New York City, and George V. Bryan, Hailey, Idaho, both in the U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. In a galvanic battery, the combination of the zinc lined or equivalent outer cup or cell and the inner cell or cup of conducting material having perforated carbon diaphragms and both cups being supplied with suitable electrolytic solutions, substantially as set forth. 2nd. A containing cup for a galvanic battery made of conducting material and forming part of an electrode, substantially as set forth. 3rd. In a galvanic battery, a containing cup of conducting material having formed in one therewith one or more diaphragms of conducting material. 4th. In a galvanic battery, the combination of a containing cup of conducting material and one or more diaphragms of similar material electrically connected thereto. 5th. The process of forming a combined containing cup and electrode for a galvanic battery, consisting in molding the cup and suitable diaphragm or diaphragms and carbonizing so as to form them into substantially one piece, substantially as set forth. 6th. The containing cup for a galvanic battery made substantially of carbon and having permanently and electrically connected diaphragms also of carbon, as set forth. 7th. The combination of the carbon containing and conducting cup and the perforated diaphragms therein, substantially as set forth.

No. 41,705. Axle for Wagons. (Essieu de wagon.)

Morris Sanford Tyler and John N. Alexander, both of Lansing, Michigan, U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. The combination with a wooden axle tree and opposite skeins thereon, of two truss bars extending along the side of said axle tree into said skeins, and bolts attached to and extending from the ends of said truss bars through apertures in the ends of the axle skeins, and provided with nuts bearing against the outer ends of said axle skeins, substantially as described. 2nd. The combination with a wooden axle tree and opposite skeins thereon, of two truss bars secured to and extending along the sides of said axle tree into said skeins, and bolts uniting the approximate ends of the axle skeins and truss bars, substantially as described. 3rd. The combination with a wooden axle tree and opposite skeins thereon, of two truss bars secured to and extending along the sides of said axle tree into said skeins, and bolts passing through apertures in the ends of said skeins and having their heads engaging with right angled offset formed on the ends of said truss bars, and their outer ends provided with screw nuts bearing against the ends of the skeins, substantially as described. 4th. The combination with a wooden axle, of two trussed bars B extending along the sides of said axle tree and having the right angled offsets D formed at their ends, the bolts C uniting said trussed bars to the axle tree and the bolts E passing through apertures in the ends of the axle skeins and through the right angled offsets and uniting the approximate ends of the axle skeins and truss bars, substantially as described. 5th. The combination of a wooden axle tree, provided with uniformly tapering, of hollow axle skeins conforming to the sides of said axle tree, and bolts uniting the approximate ends of said axle skeins and axle tree, said bolts passing through apertures in the ends of the axle skeins and having their heads engaged between overlapping offsets formed on the ends of the trussed bars, and the ends of the axle tree, substantially as described.

No. 41,706. Cash Register and Indicator.

(Registre et indicateur de monnaie.)

The John M. Waddel Manufacturing Company, assignee of Ralph Pierson Thompson, all of Greenfield, Ohio, U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. In a cash register and indicator, the combination with a casing, of keys mounted therein, indicator cards having figures adapted to be shown at sight slots in said casing, inclined troughs and registering pieces therefor, a magazine for said regis-

tering pieces, and shifting means operatively connected to said keys and indicator cards, to shift said register pieces from the magazine to the register trough. 2nd. In a cash register and indicator, the combination with a casing, of keys mounted therein, a shifting device connected to each key and carrying an indicator card adapted to be shown at sight slots in said casing, a register trough opposite each shifter, and a magazine trough for the same, registering balls adapted to travel in said troughs, and be transferred by said shifting device from said magazine to said trough under the operation of the corresponding key. 3rd. In a cash register and indicator, the combination with a casing, and numbered keys mounted therein, of inclined register troughs, registering balls adapted to travel therein, a magazine for said balls, and a shifting device operatively connected to said keys, to transfer said balls successively from the magazine to the register trough corresponding to said key. 4th. In a cash register and indicator, the combination with a casing, and numbered keys mounted therein, of an inclined register trough, registering balls adapted to travel therein, a gate at one end of said trough, a magazine trough reversely inclined to said register trough and communicating therewith through said gate, and a shifting device operatively connected to said key, adapted to receive the balls successively from the other end of said magazine trough, and transfer them to the upper end of the said register trough. 5th. The combination with a casing, keys mounted therein, a magazine and a registering device corresponding to each of said keys, of registering balls used in connection with said registering device, and a shifting device having a pocket to receive said registering balls successively from said magazine, and adapted to be operated by said key to deliver said registering balls to the registering device. 6th. The combination with weights or balls, a magazine for said weights and balls, and a register located higher than said magazine, and adapted to register said weights or balls, of a travelling shifting device having a pocket to receive one ball at a time from said magazine, and transfer it bodily from a lower to a higher plane, and deliver it to said register. 7th. In a register and indicator, the combination with a registering device, of a magazine and registering balls therein, a gate at one end of said register adapted to obstruct the return of the balls to the magazine communicating therewith, and a shifter at the other end of said magazine and registering device, to effect the transfer of said balls from said magazine to said register. 8th. In a cash register and indicator, the combination with an inclined register trough and an inclined magazine trough communicating therewith, of a gate to obstruct the return of the balls to said magazine, and a shifter at the other end of said troughs having a pocket to receive the balls successively from said magazine, and provided with an extension to operate said shifter, whereby said balls are transferred from the magazine to said register trough. 9th. In a cash register and indicator, the combination with an inclined register trough and an inclined magazine trough communicating therewith, of a gate to obstruct the return of the balls to said magazine from said register, and a shifter at the other end of said troughs adapted to receive the balls successively from the said magazine and bearing an indicator card, and adapted to be operated to show said indicator and transfer said balls automatically.

No. 41,707. Machine for Cutting Nails.

(Appareil à couper le clou.)

Charles Edward Houghton and Horace Rufus Johnson, both of Northumberland, Pennsylvania, U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. In a nail cutting machine, the combination of a stationary bed gripping die, a moving gripping die formed with point cutting die seats in their sides, point cutting dies arranged in said seats, having their abutting surfaces formed with a separable interlocking knuckle joint, and means for imparting reciprocating lateral movements to the point cutting dies, substantially as described. 2nd. In a nail cutting machine, the combination of gripping dies, formed with oppositely projecting lips arranged at different planes of elevation to form a nail holding and gripping space, point cutting dies having a lateral reciprocating movement, and means for adjusting the point cutting dies lengthwise, substantially as described. 3rd. In a nail cutting machine, the combination of point cutting dies having duplicate cutting faces, and formed with vertically directed and oppositely arranged depression and ridge, whereby when the dies are in contact a toggle joint is formed, substantially as described. 4th. In a nail cutting machine, the combination of a moving and a bed gripping die, formed with oppositely projecting lips on their gripping faces, said lips being arranged at different planes of elevation, and point cutting die seats in their side edges and central grooves in their bottom faces, point cutting dies in the said die seats, having lateral movement therein, a sliding reciprocating nipper in the bottom groove of the moving gripping die, and a spring actuated nail ejector in the groove of the bed gripping die, substantially as described. 5th. The sliding nipper herein described, consisting of a bar of steel having a "nipper face" end, and having the under surface of the bar formed slightly inclined and terminating in a shoulder near the front end, substantially as and for the purpose specified. 6th. In a nail cutting machine, the combination of a bed gripping die having a groove in its bottom face, a nail ejector in the groove of the die, a spring to throw the ejector outward and a retaining piece to hold the ejector and limit its outward movement, substantially as described. 7th. In a nail cutting machine, the

combination, with the nipper bar, the nipper spring, and the sliding nipper, of the push bar 32, and a vertically reciprocating lifting post 41, substantially as and for the purpose specified. 8th. The combination, with the nipper push bar of a nail machine, of a nipper bar 32, loosely supported at its outer end in a bearing whereby the nipper bar is given both horizontal and vertical reciprocations, substantially as described. 9th. In a nail cutting machine, for cutting nails from a rolled plate, and pointing the same, the combination, with the respective die seats thereof, of point cutting dies in said seats arranged therein to have a lateral play, substantially as and for the purpose described. 10th. In a nail machine, the combination of a moving die having an upper abutting surface, and a lower abutting surface extending in advance of the upper, with a shoulder between them, and a bed die having a lower abutting surface and an upper abutting surface extending in advance of the lower, with a shoulder between arranged at a greater height than the shoulder of the moving die, whereby by a gripping space is formed between the shoulders and surface of the dies, as specified. 11th. In a nail cutting machine, the combination of a bed die, formed with a projecting lip or shoulder extending across its end face, and a moving die formed with a projecting lip or shoulder extending across its end face, said lip being arranged at a lower parallel plane than the lip of the bed die, whereby a space is formed between the dies for gripping and holding the nail, substantially as described.

No. 41,708. Clothes Horse. (Séchoir à linge.)

Henry Marshall Wells and Thomas Richard Fuller, both of Toronto, Ontario, Canada, 23rd January, 1893; 6 years.

Claim.—A clothes rack hinged on a board fastened to the wall of a room, in combination, with a cord connected to the clothes rack, and carried through eyes extending from the wall, substantially as and for the purpose specified.

No. 41,709. Window. (Fenêtre.)

George E. Blaine, Ray S. Kaylor, John P. Newcomer and Howard Dunlap, all of Alliance, Ohio, U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. The combination, with a window sash or blind having longitudinal grooves in its sides, in which are seated rubber blocks, of the window frame having spring strips occupying grooves therein, and whose projecting edges are fluted and confined in the grooves in the sash, substantially as described. 2nd. The combination, with a window sash or blind having longitudinal grooves in its sides, of the friction strips engaging said grooves, and occupying grooves in the sides of the window frames, and curved bow-shaped spring *a*, occupying grooves in the rear edges of the friction strips, said springs having one end bent inward and inserted in perforations in said last named grooves, and having their opposite ends reversely bent to ride in said grooves, substantially as described. 3rd. In a sash supporting device employing spring strips, occupying grooves in the frame and projecting therefrom into grooves in the sashes, the removable retaining plates *p*, extending across the tops and bottoms of said strips and secured to the frames, substantially as and for the purpose specified. 4th. The combination, with the side pieces of a window frame, grooved from end to end to receive spring friction strips, of the top and bottom pieces mortised into said side pieces and forming stops for said grooves, substantially as described.

No. 41,710. Cinder Sifter and Ash Box Combined.

(Tamis et boîte à cendre combinés.)

Cornelius Buckley and Thomas W. Leeds, both of Toronto, Ontario, Canada, 23rd January, 1893; 6 years.

Claim.—The combination, of the sifter *A*, ash box *G*, cleats *C* and *E*, iron rollers or wheels *D*, hoop iron tracks agitating rod or handle *B*, and slot in end of ash box *F*, substantially as and for the purpose hereinbefore set forth.

No. 41,711. Sign for Electric Lamps.

(Enseigne pour lampes électriques.)

Edwin W. Clay and James McShane, both of Louisville, Kentucky, U.S.A., 23rd January, 1893; 6 years.

Claim.—1st. A sign for electric lamps, comprising a ring adapted to embrace the upper portion of a lamp frame, transverse braces arranged within and on opposite sides of the ring, clamps to secure the braces to the lamp frame, and a sign frame supported by rods attached to the ring, the frame having panelled sides in which the letters of the sign may be arranged, substantially as described. 2nd. A sign for electric lamps, comprising a ring arranged to embrace the upper portion of the lamp frame, an open panelled frame suspended from the ring, clamping mechanism for attaching the ring to the lamp frame, and means for adjusting the ring vertically on the clamping mechanism, substantially as described. 3rd. The combination, with the lamp frame, of upwardly extending bolts or supports clamped to the frame and arranged on opposite sides thereof, a ring adapted to embrace the lamp frame and the supports, bolts clamped to the ring and having split heads to slide on the supports, fastening screws to clamp the bolt heads to the supports, and a sign frame suspended from the ring, all substantially as described. 4th. The combination, with the lamp frame, of clamping pieces fastened

to the sides of the frame, outwardly extending eye bolts secured to the clamping pieces, upwardly extending bolts or supports secured in the eye bolts, outwardly extending bolts having split heads which are held to slide on the supports, fastening screws for securing the split heads to the supports, a ring clamped to the outwardly extending sliding bolts, and a sign frame suspended from the ring, substantially as described.

No. 41,712. Centrifugal Extractor.

(Extracteur centrifuge.)

William Everett Johnson and Robert C. Mitchell, both of New York, State of New York, U. S. A., 26th January, 1893; 6 years.

Claim.—1st. In a centrifugal machine, a basket pivotally suspended in a ring from which said basket depends, the said ring being pivotally supported in a frame carried by a shaft, substantially as described. 2nd. The combination, in a centrifugal extractor, of a basket *A*, mounted upon suitable pivots within the ring *K*, said ring being pivotally mounted at right angles to the axis of the basket, in support *I*, with a vertical shaft *E*, substantially as described. 3rd. The combination, in a centrifugal extractor, of a basket *A*, its pivot bearing *M*, *M*, supported in the ring *K*, said ring being supported by its pivots *L*, *L*, which bear in the arms *I*, *I*, with the shaft *F* and mechanism for rotating the same, substantially as and for the purpose shown and described. 4th. The combination, in a centrifugal extractor, of a perforated basket *A*, having the pivoted bearing *M*, *M*, above the centre, and supported in the ring *K*, which is supported by the bearing *L*, *L*, at right angles to the axis of *M*, *M*, said bearing *L*, *L*, supported by the arms *I*, *I*, with the vertical shaft *F*, and means for rotating the same, substantially as described.

No. 41,713. Car Coupler. (Attelage de chars.)

Aaron B. Allen, Pueblo, Colorado, U.S.A., and Phinas P. Lull, Montreal, Quebec, Canada, 26th January, 1893; 6 years.

Claim.—1st. The combination, with the coupling hook locking pin, of the axially pivoted or mounted rod or lever passing through the upper end of said pin, and provided with a lateral pin or arm adapted to rest upon the draw bar, substantially as specified. 2nd. In a car coupler, the combination, with the draw bar of the buffer or abutment, having a slotted forward end, and adapted for connection with an ordinary coupling link, substantially as set forth. 3rd. In a car coupler, the combination, with the draw bar and the coupling hook or knuckle, of the pivoted buffer or abutment adapted to stand immediately in rear of and close to said coupling hook or knuckle, and adapted to permit the engagement of said hook or knuckle with a meeting coupling hook or knuckle, substantially as set forth. 4th. The car coupler having the buffer or abutment adapted to stand immediately in rear of the coupling hook or knuckle, and having its inner end let into the draw bar and secured to a pivot bolt, and the spring coiled around the lower projecting end of said pivot bolt, and a stud on said draw bar in opposite directions, substantially as specified.

No. 41,714. Friction Clutch. (Embrayage à friction.)

Thomas H. Worrall, assignee of Alexander Lesperance, both of Loconia, New Hampshire, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. A friction clutch mechanism, comprising three members, two of which are constructed as friction discs secured to their supports, and a third formed as a clamping ring or plate independent of the said supports, one of said members being provided with a laterally projecting flange extending over or upon the periphery of the adjacent member, bolts passing through the flange of the flanged member, and through the opposite outside member, and clamping devices for acting upon said bolts, as set forth. 2nd. A friction clutch mechanism, comprising three members, two of which are constructed as friction discs secured to their supports, and a third formed as a clamping ring or plate independent of the said supports, one of said members being provided with a laterally projecting flange extending over or upon the periphery of the adjacent member, bolts passing through the flange of the flanged member, and through the opposite outside member, clamping devices for acting upon the said bolts *o*, also passing through the flange of the flanged member and outside member, as set forth.

No. 41,715. Ventilator. (Ventilateur.)

Martin Rose Ruble and Jeremiah Vreeland, Newark, New Jersey, U.S.A., 26th January, 1893; 6 years.

Claim.—A ventilating plant, consisting of a blower, provided with two outlets, one or more ventilating wheels, connected through a tube with one of the outlets of said blower and operated therefrom, and a syphon connected to the other outlet of the blower and provided with a suction pipe and a discharge pipe, all said parts substantially as described and for the purpose set forth. 2nd. A suction blower, consisting of a revolving drum, openings arranged in the sides of the drum, and a series of cup shaped chambers, arranged on the outer periphery of said drum, and adapted to draw the air out of the drum, by producing a vacuum and suction at their outlets, substantially as described and set forth. 3rd. In a suction blower, the combination with the shaft, of a drum secured to said shaft and provided on its outer periphery with a series of cup shaped

chambers, said chambers being adapted to draw or suck the air out of the drum, air inlets or openings arranged in the sides of the drum and a series of cup shaped chambers arranged within the drum, so as to form a continuous passage with the cup shaped chambers on the outer periphery, all said parts substantially as described and for the purposes set forth. 4th. The method of producing a suction, consisting in revolving a series of cup shaped chambers, secured to the outer periphery of an air drum, substantially as described. 5th. The method of producing a suction, consisting in revolving an air drum, which is provided at its periphery with a series of cup shaped chambers, extending and projecting above said drum, and a series of cup shaped chambers, extending within said drum, said outer and inner chambers forming continuous air passages, substantially as described and for the purpose set forth. 6th. In a ventilator, the combination, with a hollow ball, of a series of radially extending tubes, arranged on said ball and provided at their outer end with elbows, a tube arranged in and extending a certain distance above said ball, said tube being provided at its lower end with a series of inlets, and a pulley secured to and adapted to operate said ball, all said parts substantially as described and for the purpose set forth. 7th. In a ventilator, the combination, with a blower, of a tube provided with a series of elongated slots, a hollow ball, arranged on said tube, a series of radially extending tubes arranged on said ball, and provided at their outer ends with elbows, and a pipe conducting the air from the blower into said ball, all said parts being arranged and adapted to operate, substantially as described and for the purposes set forth. 8th. In a ventilator, the combination, with the tube, provided at its upper end with rectangular flanges and openings arranged alternately to each other, and at its lower end with a series of elongated slots, of a threaded pin secured to the lower end of said tube, an internally threaded knob secured thereto, a hollow ball, adapted to be revolved on said tube and supported by said knob, two or more radially extending tubes arranged at the outer periphery of said ball, and provided at their outer ends with elbows, and a pipe arranged in said hollow tube, and adapted to conduct the air from a blower into said ball, all said parts substantially as described and for the purposes set forth.

No. 41,716. Bottle Stopper. (Bouchon de bouteille.)

Henry Crimmel and Dallas Hammond, both of Fostoria, Ohio, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. The herein described stopper adapted to interlock with the neck of a bottle, the same consisting of a truncated cork having a central bore, a tube mounted therein and provided near its outer end with a smaller or reduced bore and at its lower end with an expanded bore, each of its bores being provided with grooves respectively differential in depth, said tube terminating at its lower end in a reduced opening, and a ball mounted in the lower end of the bore and adapted to close the opening, substantially as specified. 2nd. The herein described stopper adapted to interlock with the neck of a bottle, the same consisting of a truncated cork having a central bore, a metal tube located in the bore and provided at its upper end with an expanded bore having a reduced bore and at its lower end with a reduced valve seat, and a valve adapted to cover the seat when the stopper is in a vertical position, substantially as specified. 3rd. The combination, with the vessel having a tapered neck, the mouth of which is provided with an annular shoulder, of a stopper consisting of a cork having an upper annular shoulder forced into the neck and engaging the shoulder, said cork being provided with a bore, a metal tube snugly fitting the bore, said tube terminating at its upper end in a reduced opening and at its lower end in a reduced valve seat or opening, and a valve mounted over the lower reduced opening, substantially as specified. 4th. The combination, with a vessel having a tapered neck terminating in a reduced annular shoulder, of a cork tapered to fit the neck and having an upper reduced end forming a shoulder for engaging that of the neck, a metal tube mounted in the cork and extending below the end of the same, said tube being provided with an upwardly opening valve, and a ring mounted on the lower end of the tube and having prongs embracing the exterior of the cork and terminating at the shoulder thereof, substantially as specified. 5th. The combination, with the vessel having the tapered neck and annular shoulder at the upper end of the same, of the tapered cork fitting the neck and having an annular shoulder engaging that of the neck, a tube mounted in the cork and comprising a lower bore and an upper reduced bore, said bores having their walls corrugated, a cap having a central opening threaded on the lower end of the tube, and a ball mounted in the large bore of the tube and adapted to close the opening in the tube, substantially as specified. 6th. The combination, with the vessel having the tapered neck provided with the annular shoulder, of the tapered cork fitting the neck and provided with an external shoulder engaging that of the neck, a metal tube mounted in the cork, extending below the same, exteriorly threaded at its lower end, and having an upper and a lower bore, each of which is grooved longitudinally, the upper bore being smaller than the lower bore, a metal ring mounted on the lower end of the tube and provided with a series of upwardly disposed cork embracing prongs terminating at the shoulder of the cork, a perforated cap threaded on the lower end of the tube, a pair of balls mounted in the large bore of the tube and loosely fitting the same, a washer interposed between the lower end of the cork and

ring, and an annular boss located upon the upper end of the tube and extending over the upper end of the cork, substantially as specified.

No. 41,717. Projectile. (Projectile.)

Philip Gray Russell, Washington, District of Columbia, U. S. A., 26th January, 1893; 6 years.

Claim.—1st. An elongated projectile, for use in smooth bore guns, having its forward portion provided with inclined passages through which the gases from the rear of the projectile can pass while the latter is in the bore of a gun, having rearwardly facing abrupt sides extending down upon the taper part or point of the projectile, substantially as and for the purpose shown. 2nd. A projectile having its forward portion provided with inclined passages, through which the gases from the rear of the projectile can pass while the latter is in the inclosing bore of the gun, such passages having their forward and rear sides, respectively, abrupt and bevelled off, substantially as and for the purpose set forth. 3rd. An elongated projectile for use in smooth bore guns, having its forward portion provided with inclined passages, through which the gases from the rear of the projectile can pass, when the latter is in the bore of a gun, having abrupt rearwardly facing forward sides, and the forward portions of their rear sides cut away to allow flow of the gases over them while the projectile is in the gun bore, substantially as and for the purpose described. 4th. A projectile formed so as to have an annular channel or space around its body, forward of the rear bore engaging end of the latter, into and from which gases from the rear of the projectile can flow when the latter is in the bore of a gun, and having inclined surfaces to be engaged by the gases, substantially as and for the purpose specified. 5th. A projectile having its forward part adapted to fit the bore of a gun, its body reduced in size to leave an annular space around it forward of the rear bore engaging end of the body, into which the gases from the rear of the projectile can flow when the latter is in the gun bore, and inclined passages leading from such space through the bore fitting forward part, substantially as and for the purpose described. 6th. A projectile having at or near its forward end the portion adapted to fit the bore of the gun in which the projectile is to be used, its body to the rear of such portion formed so as to leave an annular space around between it and the walls of the bore, connected with the space at the rear of the projectile by suitable passages through the bore engaging rear portion of the body, and inclined passages in the periphery of the forward bore fitting part extending through from the rear to the front end of such part, substantially as and for the purpose specified. 7th. A projectile having the forward part adapted to fit the bore of the gun in which the projectile is to be used, its body to the rear of such part formed so as to leave an annular space around between it and the walls of the gun bore, in communication with the space at the rear of the projectile, and passages in the periphery of the projectile extending from the rear end of the forward bore fitting to and beyond the front end of the same, each having an abrupt rearwardly turned face running forward at an angle to a plane through the axis of the projectile, substantially as and for the purpose shown. 8th. A projectile having the forward cylindrical portion to fit the bore of the gun in which it is to be used, a suitable tapering point, the body having an annular channel in its periphery, and one or more passages communicating with said channel from the rear end of the projectile, and inclined passages extending forward from the channel beyond the cylindrical bore fitting part, so that their forward ends will be open and unobstructed when the projectile is inclosed in the bore of a gun, substantially as and for the purpose set forth. 9th. A projectile having the forward bore fitting part provided with a suitable point, the body to the rear of such part reduced in size and at or near its rear end provided with bore engaging lugs or projections between which the gases from the rear of the projectile can when the latter is in a gun bore pass to the annular space around the reduced part of the body, and inclined passages in the periphery of the projectile extending from the rear end to and beyond the front end of the forward bore fitting part, substantially as and for the purpose described. 10th. A projectile having the forward bore fitting part provided with a suitable point, the body reduced in size so as to form an annular channel around the same, and provided at or near its rear end with the radial projections having inclined forwardly turned abrupt faces, and inclined passages in the forward bore fitting part communicating at their rear ends with the channel around the projectile body, and at their forward ends opening at points in front of said part, substantially as and for the purpose specified.

No. 41,718. Pedal Stick. (Bois de pédale.)

William Henry Ivers, Dedham, Massachusetts, U.S.A., 26th January, 1893; 18 years.

Claim.—1st. The combination, with a piano and a reciprocating pedal stick, of a yielding support, one end of which is stationary and fast to the piano, the other connected to and moving with the pedal stick, substantially as described. 2nd. In combination, with a piano, a pedal foot and a pedal lever, a removable pedal stick mounted at one end of the pedal lever, and a yielding support or guide as a plate spring, adapted to have one end engage in and move with the pedal stick, and to have the opposite end rigidly affixed to the piano, substantially as specified.

No. 41,719. Saw Swage. (*Machine à affûter les scies.*)

Henry Williamson, Bay City, Michigan, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. In a saw swage, the adjusting bearing L, within the swage for the die shaft, substantially as described. 2nd. In a saw swage, the shaft F, provided with a segmental convex groove forming a die, said shaft having an adjustable bearing within the swage, substantially as described. 3rd. A saw swage, consisting of the shaft F, provided with a segmental convex groove forming a die, an adjustable die shaft bearing within the swage, a spindle having a flat surface forming an anvil, and a saw tooth gripping device, substantially as described. 4th. In a saw swage, the combination, with the shaft F, provided with a segmental groove forming a die, of an adjustable bearing for the die shaft within the swage, and a spindle having a flat surface forming an anvil, arranged and operated substantially as described. 5th. In a saw swage, the combination, with the box or cube A, of a shaft on which a die is formed, an adjustable bearing for the shaft within the swage, an adjustable spindle on which the anvil is formed, a handle secured to the die shaft, the setting device S, for adjusting the die, and a tooth gripping device, substantially as described. 6th. In a saw swage, the combination, with the box or cube A, of the shaft F, in which the die is formed, the adjustable bearing L, for the die shaft within the swage, the adjustable spindle K, on which the anvil K¹ is formed, the handle E on the die shaft, the setting device S, the clip R, secured to the outer end of the die shaft by the split washer V, fitting in an annular groove in the shaft, and countersunk in the clip, the adjustable guide O, and the tooth gripping device, substantially as described.

No. 41,720. Guard for Pen Holders.

(*Garde pour porte-plume.*)

Hermann Borschel, Hanover, Prussia, 26th January, 1893; 6 years.

Claim.—A protecting ring or guard for pens, consisting of an India rubber body of highly elastic nature, which can be placed at any desired distance from the end of the pen, and which is formed trumpet shape in such a way that a rest is offered to the first finger, and thus nervousness in the hand is prevented, substantially as and for the purpose specified.

No. 41,721. Horse-shoe Calk. (*Crampon de fer à cheval.*)

George Washington Wemple, Boston, Massachusetts, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. A horse-shoe calk provided with a plurality of shanks to enter holes in the body of the shoe for securing said calk thereto, the main body of which is composed of a hardened steel wearing portion, and a soft iron back or upper portion, and the shanks made of soft iron and inserted through holes in said soft iron back, and the whole welded together, substantially as described. 2nd. In removable horse-shoe calks, the combination of the main body of the calks, composed of the hardened steel wearing portion A, and the soft iron cap B, provided with the ribs c, c, and the holes b, b, and the shanks a, a, provided with flat heads a¹, the parts being assembled together and firmly welded together, substantially as described. 3rd. A detachable horse-shoe calk, comprising the tread or wearing portion A, having its upper portion made dovetailing in cross section and made of steel, the soft iron cap or upper portion B, provided with the lips c, c, and holes b, b, and the soft iron shanks a, provided with the heads a¹, said shanks being inserted through the holes b, b, in the cap B, with their heads between the ribs c, c, and the dovetailed edge of the tread portion A, being inserted between the ribs c, c, and in contact with the heads a¹, and the whole compacted by applying pressure thereto in a cold state, and welded firmly together, substantially as described.

No. 41,722. Carriage. (*Voiture.*)

Augustus Newell Parry, Amesburg, Massachusetts, U.S.A., 26th January, 1893; 6 years.

Claim.—A carriage having a wheel house to admit the cut under of the front wheels and the front seat or seats, having attached thereto a section of the side panel, formed to correspond with the wheel house, and provided with jumping irons, upon which said seat may be moved forward and rearward, while maintaining a level position, substantially as specified.

No. 41,723. Carriage. (*Voiture.*)

Augustus Newell Parry, Amesbury, Massachusetts, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. A carriage body formed with an upward curve termed a "wheelhouse," and having the sides thereof set inwards from the side of the body so as to be of less width than the body when the doors are opened, and constituting, when they are closed, a full width body, substantially as specified. 2nd. In a carriage body, the side sills a of the wheelhouse set inwards from sills D, as shown at c, and a projection c, formed upon the front seat to open and close the space between the inner face of the door and the end of the wheelhouse, substantially as specified.

No. 41,724. Sleigh Guard. (*Garde de traineau.*)

Charles N. Hartling, Halifax, Nova Scotia, Canada, 26th January, 1893; 6 years.

Claim.—1st. The combination with a sleigh or like vehicle, of flat elongated blades or auxiliary runners lying flatwise against the sides of the runners and extending longitudinally therealong, and means for raising and lowering the blades, whereby when the blades are lowered they will serve as runners and prevent lateral movement of the vehicle, substantially as set forth. 2nd. The combination with the vehicle runners, of the thin flat blades or auxiliary runners provided with slots, screws or pins extending through said slots and securing the blades flatwise to the runners, and means for raising and lowering the blades, whereby when lowered the blades will serve as runners and prevent lateral movement of the vehicle, substantially as set forth.

No. 41,725. Hame Fastener. (*Couplière d'attelles.*)

James Ingells, East Jordan, Michigan, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. A hame fastener consisting of a member provided with a series of apertures, and having a loop or eye at one end, another member provided with a hook at one end and having its other end bent upon itself and corrugated, said member being also provided with a lug adapted to take into one of the apertures in the other member, and with two parallel hooked shaped lugs which are arranged between the first named lug and the hook end of the member, an operating lever fulcrumed between the parallel lugs and having a hook at one end, and a locking ring fitted between one of the members and its corrugated end, substantially as described. 2nd. A hame fastener consisting of a member provided with a series of apertures, and having a loop or eye at one end, another member provided at one end with a hook, and having its other end bent upon itself to form two eyes d, g, which open in opposite directions, said members also having a lug adapted to take into one of the apertures in the other member, and two parallel hook shaped lugs which are situated between the first named lug and the hook end of the member, an operating lever fulcrumed between the parallel lugs and having a hook at one end, and a locking ring fitted in the eye g, and adapted to fit over the free end of the operating lever and into a notch e¹, formed therein, substantially as described.

No. 41,726. Holder for the Blocks of Wooden Knobs During the Course of Formation. (*Appareil pour tenir en position les blocs pour boutons de bois pendant leur fabrication.*)

William Williamson Sloan, assignee of Alice Grace Hess, assignee of Emil George Hess and William Hess, all of Toronto, Ontario, Canada, 26th January, 1893; 6 years.

Claim.—1st. An apparatus for fluting knobs, consisting of a plain table combined with a cutter head having its cutters revolving in a plane parallel to the face of the table, and with a knob holder consisting of a polygonal part A, and a holding end, the sides of the polygonal part being fitted to bear upon the table and sustain the holder and knob, substantially as described. 2nd. In a machine for fluting wooden knobs, and, in combination, the holding block having rotary step by step movement, and means for holding it at each step, mechanism upon the end of the block for holding the shank of the knob blank, a revolving cutter and mechanism for affecting a relative movement of the cutter and the holder in lines running across the face of the knob and continuously across its periphery, substantially as described. 3rd. A holding block having step by step rotary movement, and having also a device for holding the stem of a knob blank, in combination with a rotary cutting tool carried on supporting mechanism arranged to reciprocate in lines parallel with the axis of the block and also in lines across said axis, substantially as described. 4th. In combination, a rotary block constructed to hold the shank of the blank to be operated on having a reduced holding, and devices for holding the block in different positions, and a rotary cutter and mechanism for imparting relative movement to the cutter and the knob on the holder in lines across the face and periphery of the knob, substantially as described. 5th. A pivoted holding block adapted to turn step by step, means for holding thereto the blank by one end only, in combination with a revolving cutter mounted on a flexible arm for operating across the free face of the blank and across its periphery, as described. 6th. In combination with a cutter, a pivoted support, a holding block for the blank mounted thereon, and having rotary movement on its longitudinal axis, and an inclined support for the said block in rear of the pivoted support to vary the relation between the blank and cutter, substantially as described. 7th. In combination, the cutter, the pivoted holder J, the bearing collar pivoted thereto, the pattern block journalled in said collar, and the inclined guide, substantially as described. 8th. In combination, the cutter, the pivot d, holder J, the collar I, pivoted thereto, the pattern block journalled in said collar, the inclined guide, and the spring for forcing the holder normally away from the cutter, substantially as described.

No. 41,727. Tower for Wind Mills.*(Tour pour moulin à vent.)*

Joseph Luger, Lansing, Michigan, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. In a wind mill tower, corner posts of angle iron, having longitudinal ribs or flanges formed at the edges, substantially as described. 2nd. In a wind mill tower, corner posts formed of angle iron, having longitudinal flanges at the edges thereof extending entirely beyond the outer face, forming an inner flat face B, in combination with braces C, secured to the said flat face B, substantially as described. 3rd. In a wind mill tower, the combination of corner posts of angle iron rolled with a rounded apex and longitudinal rounded ribs or flanges at both edges extending entirely from the outer face thereof and having flat inner faces B with braces C, secured to said flat faces, substantially as described.

No. 41,728. Railway Signal.*(Signal de chemin de fer.)*

Gilbert A. Bartholomew and Reuben B. Mitchell, both of Mannee, Ohio, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. In a railway signal, the combination, with a toggle lever supported alongside a rail, springs for holding said lever normally raised, and a link depending from the lever and having a stud at its lower end, of a disc having a slot which said stud engages, a shaft to which the disc is eccentrically secured, a double lever secured to said shaft, wires leading from the arms of said lever to signals, and springs in the wires, as and for the purpose set forth. 2nd. In a railway signal, the combination, with a toggle lever whose ends are slotted, pins passing through the slots whereby the lever is supported alongside a rail, springs for holding said lever normally raised, and a link pivoted to and depending from the center of the lever and having a stud at its lower end, of a disc having a slot which said stud engages, a shaft to which the disc is eccentrically secured, a lever secured to said shaft, and wires leading from said lever to signals, as and for the purpose set forth. 3rd. In a railway signal, the combination, with a toggle lever supported alongside a rail, springs for holding said lever normally raised, and a link pivoted to and depending from the lever and having a stud at its lower end of a disc having a concentric slot which said stud engages, the ends of the slot being deflected toward the center of the disc, a shaft to which the disc is eccentrically secured, a double lever secured to said shaft, and wires leading from the arms of said lever to signals, as and for the purpose set forth. 4th. In a railway signal, the combination, with a toggle lever supported alongside a rail, and a link depending from the lever and having a stud at its lower end, of a disc having a concentric slot which said stud engages, the ends of the slot being deflected toward the center of the disc, a shaft to which the disc is eccentrically secured, a signal, and connections, substantially as described, between the shaft and the signal, as and for the purpose set forth. 5th. In a railway signal, the combination, with a toggle lever supported alongside a rail, and a link depending from the lever and having a stud at its lower end, of a disc having a concentric slot which said stud engages, said disc being eccentrically pivoted, a signal, and connections, substantially as described, between the disc and signal, as and for the purpose set forth. 6th. In a railway signal, the combination, with two posts carrying signals, a rock shaft adjacent each post, and means substantially as described for oscillating said shaft by the passage of the train, of a double lever secured to each shaft, wires connecting the corresponding arms of the levers so as to cause the latter to work in unison, and wires connecting the opposite arms of the levers with the signals to cause the latter to operate in unison, as and for the purpose set forth. 7th. In a railway signal, the combination, with two posts carrying signals, and means substantially as described for causing each of said shafts to make a partial rotation in one direction at and by the first passage of a train, and in the opposite direction at the next passage thereof, of a double lever secured to each shaft, wires connecting the corresponding arms of the levers so as to cause the latter to work in unison, and wires connecting the opposite arms of the levers with the signals to cause the latter to operate in unison, as and for the purpose set forth.

No. 41,729. Toy Gun. (Fusil jouet.)

The Rubber Tipped Arrow Company, assignee of Peter Porter, all of Boston, Massachusetts, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. In a toy spring gun, the rod or rock shaft journaled in suitable bearings, having a spring retaining arm or catch on its forward end, and an operating arm or lever on its rear end, whereby said rod may be rocked or oscillated in its bearings and caused to withdraw its catch and release the spring, as set forth. 2nd. In a toy spring gun, the rod or rock shaft journaled in suitable bearings, having a spring retaining arm or catch on its forward end, and an operating arm or lever on its rear end, whereby said rod may be rocked or oscillated in its bearings and caused to withdraw its catch and release the spring, and a spring adapted to normally hold the said catch in its spring retaining position, as set forth. 3rd. The improved toy gun, comprising a stock, a barrel set thereon, a spring in said barrel, and a rod under the barrel, having its forward end bent up and projecting through an orifice in the barrel, forming

a catch for the forward end of the spring when compressed, the rear end of said rod being also bent and adapted to be moved to bring the forward end or catch above mentioned out of the barrel, thus releasing the spring, as set forth. 4th. In a toy gun, the combination, with a stock, a barrel set thereon, a spring in said barrel, a spring operated hammer, and a releasing trigger therefor, of a rod journaled in the stock below the barrel, having its forward end bent up at substantially a right angle to the length of the rod, and projecting into the barrel through an orifice therein, and forming a catch for the forward end of the spring when compressed, the rear end of said rod being also bent substantially at right angles to the length of the rod and projecting through a slot in the stock, at a point where it will be struck by the hammer when the same descends, the two projecting ends of said rod being so arranged that when the rear end is depressed by the hammer the front end or catch will be moved downwardly out of the barrel, releasing the spring, and a spring *c*, adapted to normally hold the said catch in position in the barrel, as set forth. 5th. In a toy gun, the combination with the barrel, the spring therein, and the stock provided with a side slot *s*, of the rod or rock shaft extending lengthwise of the barrel and mounted to rock or oscillate in the stock, said rod having at one end an arm arranged to serve as a catch or detent for the outer end of the spring when the latter is compressed, and at the other end an arm projecting through the slot *s*, said slot permitting the rocking motion of the rod and preventing endwise movement thereof, as set forth. 6th. The combination, with the barrel and the rocking rod *f*, having two arms *f*¹, *f*², adapted to project through slots into the barrel, of the spring made in two sections *e*², *e*³, connected at their meeting ends by a head *e*¹, adapted to engage the arm *f*², when the inner section is compressed, the outer end of the section *e*², being adapted to engage the arm *f*¹, when the entire spring is compressed, as set forth.

No. 41,730. Tire Punching Machine.*(Machine à percer les bandages.)*

The Gendron Manufacturing Company, Toronto, Ontario, Canada, assignee of Peter Gendron, Toledo, Ohio, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. In a tire punching machine, the combination, with a supporting bed, of a series of radial punches, and a corresponding series of dies, substantially as described. 2nd. In a tire punching machine, the combination, with a supporting bed, of a series of radial punches, and a corresponding series of radially movable dies, and of actuating mechanism for said dies and punches, substantially as described. 3rd. In a tire punching machine, the combination, with a supporting bed and the punches, of a series of radially moving dies and actuating mechanism for said dies, substantially as described. 4th. In a tire punching machine, the combination, with a supporting bed, of a series of radial dies moving outwardly from the centre, and a series of oppositely moving punches, substantially as described. 5th. In a tire punching machine, the combination, with a supporting bed, a series of radial guide grooves therein, a series of dies in one end of said groove, a series of punches in the other end thereof, and means for moving said dies and punches towards each other, substantially as described. 6th. In a tire punching machine, the combination, with a supporting bed, a series of dies radially arranged on said bed, a corresponding series of punches, and a head for actuating said dies, substantially as described. 7th. In a tire punching machine, the combination, with the frame, a series of die supporting beds radially arranged centrally thereof, a series of dies adjustably secured on said beds, and a head for moving said beds simultaneously, substantially as described. 8th. In a tire punching machine, the combination, with the frame of the machine, of a series of radially arranged sliding beds, a series of dies adjustably secured on said beds, a corresponding series of punches, a central head adapted to move said beds outwardly and forming an abutment for said beds, substantially as described. 9th. In a tire punching machine, the combination, with the frame, a series of dies radially arranged, a series of sliding beds upon which said dies are secured, a central shaft for moving said dies outwardly, and means for retracting said dies, substantially as described. 10th. In a tire punching machine, the combination, with the frame, of a series of radially arranged dies, a series of sliding beds upon which said dies are secured, a central shaft against which said beds bear, an inclined bearing for actuating said beds outwardly, and a second inclined bearing connected with said shaft for retracting said beds, substantially as described. 11th. In a tire punching machine, the combination, with the bed, its dies and punches, of a series of adjustable supporting arms for centering a tire thereon, substantially as described. 12th. In a tire punching machine, the combination, with the bed, its dies and punches, of supporting arms for centering said tire and means for adjusting said arms laterally and vertically, substantially as described. 13th. In a tire punching machine the combination, with the bed of the spring actuated arms *S*, having guiding horns *S*¹, of means for securing said arms adjustably to the frame of the machine and the set screw *S*², for adjusting said arms vertically, substantially as described. 14th. In a tire punching machine, the combination, with the movable dies, of the guide arms *Q* secured thereto, substantially as described. 15th. In a tire punching machine, the combination, with the movable dies, of the guide arms *Q* secured thereto, having a horizontal bearing *R*¹, substantially as described. 16th. In a tire punching machine, the

combination, with the movable dies of the guide arms Q, secured thereto, and means for adjusting said guide arms, substantially as described. 17th. In a tire punching machine, the combination of the die supporting blocks P, adjustably secured upon the sliding bed Q, substantially as described. 18th. In a tire punching machine, the combination, with the frame, of the sliding beds O, notched upon their upper surfaces, the die supporting blocks P, having corresponding notches to engage therewith, the clamping bolt P¹, and the dies in said blocks, substantially as described. 19th. In a tire punching machine, the combination, with a die supporting block apertured to receive the die *i*, of the passage *i*², connecting with the passage *i*¹, and the discharge tube *k*, substantially as described. 20th. The combination, with a die supporting block, radially apertured, of the die *i*, and the screw threaded block *j*, for adjusting said die, substantially as described. 21st. The combination, with the frame of the machine, having a series of central dies radially arranged, of a corresponding series of punches, means for adjusting said punches to and from said dies, and means for actuating said punches, substantially as described. 22nd. In a tire punching machine, in combination, with the frame, a series of central dies radially arranged, a corresponding series of punches, means for adjusting said punches to or from the dies, and a single actuating shaft for said punches, substantially as described. 23rd. In a tire punching machine, the combination, with the frame, of the radially arranged punching blocks K¹, of the screw threaded sockets L, upon the said punching blocks, the tool holder L¹, engaging in said sockets and the punch secured to said tool holders, substantially as described. 24th. The combination, with the tool holder L¹, of the punch having a shank portion *f*¹, and the bevelled portion *f*², substantially as described. 25th. The combination, with the tool holder L¹, of the plug *f*, and the punch *g*, substantially as described. 26th. In a tire punching machine, the combination, with the frame, the dies and punches, substantially as described, of drive mechanism consisting of a central transverse shaft and connections from that shaft to the punches and dies, substantially as described. 27th. In a tire punching machine, the combination, with the frame, the punches and dies, substantially as described, of drive mechanism consisting of a transverse shaft, a vertical shaft for actuating the dies, and a vertical frame for actuating the punches and cams upon said transverse shaft, for actuating said vertical shaft and frame, substantially as described. 28th. In a tire punching machine, the combination, with the frame, a series of centrally arranged radial dies, a corresponding series of radial punches, the bell crank levers J, engaging with said punch with one arm, and with the other arm engaging with a bearing on the frame H, and means for actuating said frame, substantially as described. 29th. In a tire punching machine, the combination, with the frame, the punches and dies, of a throw off spider having radial arms extending beneath the plane of said punches, and means for intermittently actuating said spider, substantially as described. 30th. In a tire punching machine, the combination, with the frame, the punches and dies, of a spider consisting of a circular ring, with interiorly extending radial arms T¹, means for intermittently actuating said spider, and a spring adapted to return said spider to its normal position, substantially as described. 31st. In a tire punching machine, a throw off mechanism, consisting of the rim T, having radial arms T¹, the lever U, pivoted at U¹, the connecting rod U², the lever U³, means for actuating said lever and the spring V¹, substantially as described.

No. 41,731. Machine for Hooping and Heading Kegs.

(*Machine pour poser les cercles et fonds de tonneaux.*)

Theodore A. Cook, Callicoon, New York, U.S.A., 26th January, 1893; 6 years.

Claim.—1st. In a machine for hooping and heading kegs, the combination with a bed plate and a bottom header adjustable thereon, of an upper vertically movable plate, a spring pressed head plate, and pivoted hoopers on said upper plate, substantially as described. 2nd. In a machine for hooping and heading kegs, the combination with a bed plate, a bottom header adjustable thereon, and a vertically movable upper plate having hoopers pivoted therein, of a spring actuated spindle that presses the upper head in place, substantially as described. 3rd. In a machine for hooping and heading kegs, the combination with a header plate, a movable upper plate or table, and means to reciprocate said table, of a flange or ring on said table that will surround a keg, the plate 24, within said ring, spring actuated hoop drivers pivoted therein, a tube attached to said plate, and a spring pressed follower on said tube provided with an upper header plate, substantially as described. 4th. In a machine for hooping and heading kegs, the upper plate formed with the casing or flange 19, offset at 20, in combination with the plate 24, hoopers 26, springs 27, tube 23, spindle 30, and spring 31, substantially as described. 5th. In a machine for hooping and heading kegs, the combination with a bed plate channeled in its upper surface, of a bottom header plate secured by a bolt movable in said channel, substantially as described.

No. 41,732. Balance Slide Valve. (Tiroir équilibré.)

John Parker, assignee of Fred. E. Clark, both of Sturgeon Falls, Ontario, Canada, 27th January, 1893; 6 years.

Claim.—The combination with the steam chest having the cover C¹, provided with an exhaust steam opening *g*, of the slide valve D, having the exhaust ports *c* and *d*, and the exhaust recess F, in its

under side, the balance piston disc G, adapted to slide vertically in the top of the valve D, and having an opening *f*, arranged correspondingly with the aforesaid opening *g*, in the cover C¹, and springs, supporting the disc, as shown and described.

No. 41,733. Steam Joint. (Joint de vapeur.)

John Brainerd Morgan, Rockland, and Horatio Adams, Boston, both in Massachusetts, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. A steam joint comprising in its construction a casing provided with the concentric chambers *b*, *b*¹, and 62, 26, movable covers to the latter chambers, ports communicating between the chambers *b*, 62, and *b*¹, 26, supply or inflow pipes communicating with the chambers *b*¹, 26, and return pipes communicating with the chambers *b*, 62, as set forth. 2nd. A steam joint comprising in its construction a casing provided with concentric chambers *b*, *b*¹, and 62, 26, movable covers to the latter chambers, ports communicating between the chambers *b*, 62, and *b*¹, 26, supply or inflow pipes communicating with the chamber *b*¹, 26, return pipes communicating with the chambers *b*, 62, and flanges and packing separating the said pipes between the base of the said casing and the cover to the chamber, 62, 26, as set forth. 3rd. A steam joint comprising in its construction a casing provided with the concentric chambers *b*, *b*¹, and 62, 26, and having the annular flange *f*, between the chambers 62, 26, the ring *d*, having the flange *d*¹, forming a cover for the chamber 62, the ring *h*, having the flange *h*¹, forming a cover for the chamber 26, the movable cover *g*, provided with a groove *f*¹, into which the flange *f* extends, ports communicating between the chambers *b*, 62, and *b*¹, 26, supply pipes communicating with the chambers *b*¹, 26, and return pipes communicating with the chamber *b*, 62, and packing interposed between said casing, cover, rings, pipes and flanges, as set forth. 4th. A steam joint comprising in its construction a casing provided with the concentric chambers *b*, *b*¹, and 62, 26, and having the annular flange *f*, between chambers 62, 26, the ring *d*, having the flange *d*¹, forming a cover for the chamber 62, the ring *h*, having the flange *h*¹, forming a cover for the chamber 26, the movable cover *g*, provided with a groove *f*¹, into which the flange *f* extends, ports communicating between the chambers *b*, 62, and *b*¹, 26, supply pipes communicating with the chamber *b*, 62, and return pipes communicating with the chamber *b*, 62, and packing interposed between said casing, cover, rings, pipes and flanges, as set forth. 5th. A steam joint comprising in its construction a casing provided with concentric chambers or reservoirs *b*, *b*¹, and concentric packing chambers, and having a solid face 59, and a raised seat, and provided also with chambers 62, 26, ports communicating between the reservoirs *b*, *b*¹, and steam chambers 62, 26, the interior rings *d*, *h*, provided respectively with the flanges *d*¹, *h*¹, extending into the steam chamber 62, 26, and provided with ports, a movable cover provided with direct and return pipes communicating with the ports in the flanges *d*¹, *h*¹, as set forth. 6th. A steam joint comprising in its construction a casing provided with chambers or reservoirs *b*, *b*¹, and flange *f*, and having a solid face 59, and a raised seat, and provided also with steam chambers 62, 26, ports communicating between the reservoirs *b*, *b*¹, and steam chambers 62, 26, the interior rings *d*, *h*, provided respectively with flanges *d*¹, *h*¹, extending into the chambers 62, 26, and provided with ports, a movable cover provided with an annular groove *f*¹, into which the flange *f* extends, and having direct and return pipes communicating with the ports in the flange *d*¹, *h*¹, and a spring bearing on the cover, as set forth. 7th. A steam joint comprising in its construction a casing *a*¹, provided with concentric chambers or reservoirs *b*, *b*¹, and annular flange *f*, and having a solid face 59 integral with a raised seat, and provided also with the annular steam chambers 62, 26, ports communicating between the reservoirs *b*, *b*¹, and steam chambers 62, 26, the interior rings *d*, *h*, provided respectively with flanges *d*¹, *h*¹, extending into the chambers 62, 26, and provided with ports, a movable cover, provided with an annular groove *f*¹, into which the flange *f* extends, and having direct and return pipes communicating with the ports in the flange *d*¹, *h*¹, packing on opposite sides of the flanges, discs and pipes, and a spring bearing on the movable cover, as set forth. 8th. A steam joint comprising in its construction a casing provided with one or more concentric reservoirs *b*, *b*¹, solid face 59, integral with a raised seat, annular chambers 62, and ports communicating between the reservoirs *b*, *b*¹, and steam chambers 62, the sleeve *o*, at the centre, the flanges *d*, *h*, provided respectively with the flange projectors *d*¹, *h*¹, extending into the annular chambers 62, and provided with ports communicating with the ports leading from the supplies or reservoirs *b*, *b*¹, to the steam chambers 62, a ring adapted to turn on the sleeve *o*, a groove 52 in the outer casing with drip attached, packing between the face 59, and ring, a spring bearing comprising the rotary disc, and packing with spring and screw, and the bolt *o*¹, and coupling for connecting joints in either direction, as set forth.

No. 41,734. Film Holder for Photographic Cameras.

(*Porte-toile pour cameras photographiques.*)

Gustave David Millburn, Rochester, New York, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. In a magazine film holder for a camera, the combination of a front chamber to receive unexposed films in series, means for pressing the films forward, means for removing the films from the front, one at a time, a flexible septum or curtain, and means for introducing the same behind the foremost film previous to its exposure. 2nd. In a film holder for a camera, a box or case to receive films in

series, a follower or pressure device to urge them forward, a flexible septum or curtain, endless carriers to which said curtain is attached, and by which it may be moved from front to rear at will, and means, substantially as described, for releasing the front film that the septum may be passed thereunder. 3rd. In a film holder for a camera, the box or case A, a follower, a flexible septum or curtain, means for carrying the same from front to rear of the case at will, rollers to confine the ends of the film, and mechanism, substantially as described, for operating the bands and the rollers, as set forth. 4th. In a magazine holder for a camera, a case or receptacle for the unexposed films, a follower to press the films forward in series, a flexible septum, and means for carrying the same, substantially as described, rolls overlying the ends of the film, roll N, to act on the back of the forward film, and gearing, substantially as described, for turning the rolls differentially to and fro'. 5th. In a magazine film holder for a camera, a case or receptacle to hold the cut films in series, a follower or pressure mechanism to force them forward, two rolls overlying the opposite ends of the films, and means for turning the rolls, substantially as described, and to release the films at the front one at a time. 6th. In a magazine film holder for a camera, the combination of a case or receptacle to hold the cut films in series, a roll E, overlying the front film to deliver the same endwise, a roll N, to act on the rear of the film, and means for turning said rolls in reverse directions, whereby the foremost film may be delivered and the escape of the next film prevented. 7th. In combination with a case or receptacle to hold cut films in series, means for pressing the same forward toward the open side of the case, rolls overlying the ends of the films and adapted to turn to and fro', and finger S, adapted to lift the foremost film when released at one end.

No. 41,735. Potato Harvester. (*Arrache-patates.*)

Joseph North Cocker, West Devonport, Tasmania, U.S.A., 27th January, 1893; 6 years.

Claim.—In a potato harvester, the combination of a frame carried on two side wheels and a steering wheel, an elevator wheel carried on the frame and having inwardly projecting blades, a share with mould board gratings inclosing three sides of the elevator wheel over part of its circumference, and a grated platform inclined to one side within the upper part of the path of the wheel blades, all arranged and operating substantially as described.

No. 41,736. Glazed Structure. (*Structure vitrée.*)

William Herbert Culson, Jersey City, New Jersey, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. In a glazed structure, the combination, with a hollow ridge bar, and a series of hollow glazing having a connection with the ridge bar, of eaves bars located beneath the lower extremities of the glazing bars, and an eaves trough located beneath the eaves bar, communication being established between the glazing bars, the eaves bars and the eaves trough, substantially as and for the purpose specified. 2nd. In a glazed structure, the combination, with a hollow ridge bar, provided with a longitudinal gutter, and glazing bars constructed in two hollow sections connected at their upper ends with the ridge bar, and provided with gutters having communication with the interior of eaves bars located beneath the lower ends of the glazing bars, provided with an apertured trough sections, having communication with the interior of the glazing bars, an eaves trough located beneath the eaves bars to receive the drip therefrom, and glass panes having their edges tied between the sections of the glazing bars, the outer wall of the eaves bars forming a stop for the lower ends of the glass panes, substantially as shown and described. 3rd. In a glazed structure, the combination, with a hollow ridge bar provided with longitudinal gutter, glazing bars constructed in lengths, each length being formed of two hollow sections having a space between them, the lower wall of which is provided with an apertured gutter leading to the interior, and lap bars fastened to the glazing bars at the overlapping of their lengths, the said lap bars being formed with an upper supporting section, and two gutter sections located one below the other, the said gutter sections having communication with each other and with the interior of the glazing bars, of eaves bars located beneath the lower ends of the glazing bars, provided with an apertured gutter section, and having communication with the interior of the glazing bars, eaves troughs located beneath the eaves bars and hip bars receiving the ends of several of the glazing bars, the said hip bars being constructed in essentially a similar manner to the glazing bars, substantially as shown and described. 4th. In a glazed structure, a glazing bar consisting of a lower rail section, provided at its upper face each side of the centre with a gutter and an upwardly extending flange, and a cap section having communication with the rail section, and provided upon its inner side with loops adapted to receive the flanges of the rail section, substantially as shown and described. 5th. In a glazed structure, a glazing bar consisting of a lower tubular rail section, provided at its upper face each side of the centre with a gutter having openings therein, and an essentially vertical flange at the inner side of the gutters, and a tubular cap having communication with the interior of the rail, the under surface whereof extends essentially horizontally over the gutter surface of the rail section, the said under surface of the cap section terminating at each side of its centre with a loop to receive flanges of the rail section, substantially as specified. 6th.

In a glazed structure, the combination, with the tubular body or rail of a glazing bar, provided at its upper face with apertured gutters, and an upwardly extending flange at each side of its centre, of a tubular cap section provided with an essentially horizontal under surface near its sides, and loops adapted to receive the rail flanges, and means, substantially as shown and described, for tying the cap section to the rail section, as and for the purpose specified. 7th. In a glazed structure, the combination, with the tubular body or rail of a glazing bar, open at the top and having its inner ends flanged upward and provided with an apertured gutter between its outer side surfaces and flanges, of a tubular cap section having essentially angular outer edges and provided with a central opening in its under surface, and a loop and a horizontal surface at each side of the opening, transparent panes inserted between the contiguous surfaces of the cap and rail over the gutter of the latter to a bearing against its flanges, and means, substantially as described, for binding the panes between the sections of the glazing bar and tying the said sections to each other, substantially as specified. 8th. In a glazed structure, the combination, with the tubular body or rail of a glazing bar, having an opening at its top, and the walls of which opening are flanged upward and provided with apertured gutters between the flanges and the upper outer side walls, of a tubular cap section, having an opening in its under face communicating with the interior of the rail section, the walls of which opening contact with the flanges of the said section, a nut fitted essentially to the inner contour of the cap section, and a bolt passed through the said section into the said nut, substantially as specified. 9th. In a glazed structure, the combination, with a glazing bar, consisting of a hollow essentially rectangular body or rail section, having an opening in its top, a flange at each side of the opening and a gutter near said flanges, and a hollow cap section having a cylindrical upper surface and an opening in its under face, the walls whereof contact with the rail flanges, the said cap section being also provided with essentially angular lower side edges, of a clamping net shaped to the cylindrical contour of the cap and provided with a shank having a threaded bore extending downward into the rail section into the shank bore of the nut, substantially as shown and described. 10th. In a glazed structure, the combination, with a glazing bar consisting of a hollow essentially rectangular body or rail section having an opening in its top, a flange at each side of the opening and a gutter near said flanges, and a hollow cap section having a cylindrical upper surface and an opening in its under face, the walls whereof contact with the rail flanges, the said cap section being also provided with essentially angular lower side edges, of a clamping nut shaped to the cylindrical contour of the cap and provided with a shank having an interior bore integral with its under surface, a bolt passed through the bottom of the rail section into the shank of the nut, and provided with a lock nut at its lower end, and a spring located between said nut and the bottom of the rail section, substantially as shown and described, and for the purpose specified. 11th. In a glazed structure, the combination, with a glazing bar consisting of a tubular lower or rail section having a convex bottom, and a cap section provided with a cylindrical upper surface having communication and contact with the rail section, of a clamping nut shaped to the cylindrical contour of the cap and provided with an integral shank having a concaved lower end and a threaded bore, a bolt threaded at both ends passed through the bottom of the rail into the bore of the clamping nut, a spring plate inserted upon the lower end of the bolt, having a bearing against the under concaved surface of the rail section, and a lock nut binding the spring to place, substantially as shown and described. 12th. In a glazed structure, a lap bar consisting of flexible metal bent to form an upper platform provided with a flange at one side, a gutter beneath said platform, and a second or lower gutter extending beneath the first gutter, substantially as specified. 13th. In a glazed structure, a lap bar adapted to seal and support the opposed edges of glass panes, consisting of a metal plate bent to form an upper platform provided with a flange at one side, a perforated gutter beneath the same, having one side of less height than the other, and a second lower gutter extending beyond the higher side wall of the upper gutter and having an upturned flange at its upper end, substantially as specified. 14th. In a glazed structure, the combination, with the glazing bars constructed with a lower tubular rail section and an upper tubular cap section, of lap bars extending into the lower sections of the glazing bars, consisting of metal bent to form an upper platform having a flange at one side, a perforated gutter beneath the same, and a second lower gutter extending beyond one side of the upper gutter, the said lower gutter being provided with openings leading into the glazing bars, substantially as specified. 15th. In a glazed structure, the combination, with the glazing bars constructed with a lower tubular rail section and an opposed tubular cap section, and panes of glass clamped between the sections of the bars and overlapped at their ends, of lap bars extending into the lower sections of the glazing bars, consisting of metal bent to form an upper platform having a flange at one side and adapted to support the lower end of the upper glass pane, a perforated gutter beneath the same, having one wall of less height than the other, the upper edge of the lower glass pane being adapted to rest upon the shorter wall of said gutter and extend upward over the same, and a second lower gutter extending beyond one side of the upper gutter, the said lower gutter being provided with openings leading into the glazing bars, substantially as specified, whereby any vapour, rain or melted snow, finding its way between the overlapping

joins of the glass panes will be conducted into the glazing bars, as specified. 16th. In a glazed structure, an eaves bar constructed substantially as described, the same consisting of a metal plate bent to form a central flat body or bearing surface, an apertured trough at the outer or front side, the outer wall of which trough extends beyond the plane of the body surface, and the perpendicular rear wall extending upward from the rear side of the body surface, and having an outwardly projecting flange on its upper edge, substantially as specified. 17th. In a glazed structure, an eaves bar constructed substantially as described, the same consisting of a metal plate bent to form a central flat body or bearing surface, an apertured trough at the outer or front side, the outer wall of which trough extends above the plane of the body surface, a perpendicular rear wall extending upward from the rear side of the body, and provided with a forwardly bent horizontal flange, the said rear wall and its flange being recessed at intervals to receive the glazing bars of the structure, substantially as specified. 18th. The combination, with an eaves bar, the same consisting of a metal plate bent to form a flat body, an apertured trough at the forward or outer end of the body, the outer wall of which is projected above the plane of the body, and perpendicular wall extending upward from the inner or rear side of the body, of an eaves trough attached to the body of the eaves bar, and extending beneath and beyond the trough section of said eaves bar, substantially as specified. 19th. In a glazed structure, the combination, with the eaves rail and eaves frame of the structure, and an eaves trough secured to the same, of an eaves bar also attached to the said rail and frame, consisting of a flat body portion, an apertured trough formed at the outer side of the body projecting within the eaves trough, and a wall extending upward from the inner or rear side of the body, and provided with a forwardly disposed horizontal flange, the said wall and flange being recessed to receive the glazing bars of the structure, substantially as and for the purpose specified. 20th. In a glazed structure, the combination, with the eaves rail and the eaves frame bar, of a structure and an eaves trough secured to the said bar and rail, of an eaves bar consisting of a flat body portion, an apertured trough formed at the outer side of the body projecting downward within the eaves trough, the outer wall of which extends above said body, an upwardly extending perpendicular wall at the rear side of said body, provided with an upwardly extending horizontal flange, the said wall and flange being recessed at intervals, and lugs formed upon the outer or front wall of said eaves bar opposite the said recesses, of glazing bars, substantially as described, and extending through the recesses of the eaves bar, and contacting with the lugs therein, an eyebolt located within each of the glazing bars and passed through the forward walls of the eaves bar, and a tie bolt passed through the eyebolt and the eaves frame and bar, substantially as and for the purpose specified. 21st. In a glazed structure, the combination, with a series of glazing bars arranged at each side of the ridge, of a ridge bar curved at its top and recessed to receive the upper ends of the glazing bars, the metal of the said ridge bar being bent from the under face downward across the inner ends of the glazing, and beneath said bars for attachments to the ridge angle irons of the structure, substantially as shown and specified. 22nd. In a glazed structure, the combination, of a series of glazing bars, arranged at each side of the ridge and provided with recesses in their upper ends, and a ridge bar having a cylindrical top recessed to receive and contact with the exterior of the glazing bar, the metal of the said ridge bar being carried diagonally downward at each side covering the upper ends of the glazing bars, and also carried within the recesses of said bars, forming an apertured gutter, and thence downward beneath the glazing bars, and means, substantially as described, for securing the ridge bar and the upper ends of the glazing bars to the ridge irons of the structure, as specified. 23rd. In a glazed structure, the combination, with the glass receiving gable rail of the structure and the ridge bar, of a flashing secured to and covering the said rail, and extending up within the ridge bar, re-enforcing plates bearing against the face of the flashing, and capping the ends of the ridge bar, a clamping bolt located within the ridge bar having an eye at its inner end, and a threaded outer end provided with a lock nut extending through the flashing, and re-enforcing plates and a tie bolt passed horizontally through the ridge bar and the eye of the clamping bolt, substantially as and for the purpose specified.

No. 41,737. Steam Cooker. (*Appareil de cuisine à vapeur.*)

John D. Brotherston, Cobourg, Ontario, Canada, 27th January, 1893; 6 years.

Claim.—A steam cooker, comprising a steam cylinder A, provided with a condensing jacket D, and having food pans C, C, C, one upon the other, and a steam space intervening the wall of the cylinder and pans, a flat steam generator E, having a depression E, at the top, and steam pipes H, H, connecting with the cylinder A, and a conical or funnel-shaped reservoir G, having an aperture in the small end connecting with the steam generator at the bottom of said depression, and extended beyond the circumference of the jacket D, to catch water of condensation, as set forth.

No. 41,738. Feed Water Regulator.

(*Régulateur de l'eau d'alimentation.*)

Joshua Thomas, Cleveland, Ohio, U.S.A., 27th January, 1893; 6 years.

Claim.—The combination of boiler A, pipes B, C, joined by cross heads D, E, cross head D, connected by pipe F, with top of boiler

cross head E, connected with pipe G, with bottom of the boiler, pipe Q, connecting pipe F with pipe G, the valve H, supported by the yoke K, valve stem J, passing through the stuffing box I, in yoke K, and having collar M, spring N, and rods P, P, connecting cross bar O, with the yoke, the stem being connected with cross head D, by turn buckle L, all constructed to operate, substantially as described.

No. 41,739. Bogie Frame for Locomotive Engines.

(*Train de quatre roues mobiles pour machines locomotives.*)

Gustav Lentz, Dusseldorf, Prussia, German Empire, 27th January, 1893; 6 years.

Claim.—In a two or more wheeled bogie frame for locomotive shafts carried by the bogie frame and placed at an angle to the longitudinal centre line of the engine, in combination with links or connecting pieces, one end of which is connected to the said shafts, while the other end is connected to the main frame of the engine.

No. 41,740. Fender for Cars. (*Défense pour chars.*)

Samuel Emmett Horne, Chester Horne and Joseph Jones Davies, all of Toronto, Ontario, Canada, 27th January, 1893; 6 years.

Claim.—1st. A fender for street cars comprised of a central portion A, having an upward rearward inclination, the side portions B, extending from the sides of the central portion outwardly with a downward inclination, the whole being covered by a wire netting and bounded by an edge bar, and means for pivotally supporting the frame of the fender in the rear and suspending the front portion from the front of the car, as and for the purposes specified. 2nd. The central portion A, having an upward rearward inclination and the side portions B, having a downward inclination from the central portion, the central and side portions being comprised of the edge bar C, having a rubber cushion N, flaring outwardly and the side bars D, which are all braced together by the braces E, I, and J, and cross bar F, and pivotally supported at the rear on the brackets G, secured to the stringers H, the whole being covered with wire netting, and means whereby the front of the fender is supported at a slight distance from the ground, as and for the purpose specified. 3rd. The central portion A, having an upward rearward inclination and the side portions B, having a downward outward inclination from the central portion, the central and side portions being covered with netting, pivotally supported at the rear, and constructed as specified and provided with an edge bar having a rubber cushion secured to it circularly surrounding the frame as shown and flaring outwardly towards the rear of the fender, in combination with a bow spring L, located behind the rubber cushion in the front of the fender and secured thereto and supported in straps rivetted to the edge bar and means whereby the front of the fender is supported above the ground, as and for the purpose specified. 4th. The central portion A, having an upward rearward inclination and the side portions B, having a downward outward inclination from the central portion, the central and side portions being covered with netting, pivotally supported at the rear, and constructed as specified, and provided with an edge bar having a rubber cushion secured to it circularly surrounding the frame, as shown and flaring outwardly towards the rear of the fender in combination with the rollers N, supported in brackets in the front of the frame and means for holding the frame and rollers clear of the ground, as and for the purpose specified. 5th. The central portion A, having an upward rearward inclination, and the side portions B, having a downward outward inclination from the central portion, the central and side portions being covered with netting, pivotally supported at the rear, and constructed as specified, and provided with an edge bar having a rubber cushion secured to it circularly surrounding the frame, as shown, and flaring outwardly towards the rear of the fender, in combination with the chains Q, Q', pulleys R, S and T, and lever U, thrown and held in any desired position in the rack V, as and for the purpose specified. 6th. The central portion A, having an upward rearward inclination, and the side portions B, having a downward outward inclination from the central portion, the central and side portions being covered with netting, pivotally supported at the rear, and constructed as specified, and provided with an edge bar having a rubber cushion secured to it circularly surrounding the frame, as shown, and flaring outwardly towards the rear of the fender, in combination with the vertical frames P', covered with netting, and means for supporting the inclined fender in position, as and for the purpose specified. 7th. The central portion A, having an upward rearward inclination, and the side portions B, having a downward outward inclination from the central portion, the central and side portions being covered with netting, pivotally supported at the rear, and constructed as specified, and provided with an edge bar having a rubber cushion secured to it circularly surrounding the frame, as shown, and flaring outwardly towards the rear of the fender, in combination with the removable portion B', secured behind the portion B, by means of the connecting bar 2, joining the abutting ends of the edge bars C and C', and secured to the same, and bolts passing through braces J, and side bar D, as specified.

No. 41,741. Earth Screw for Holding Posts.*(Poteau à vis.)*

Austin Demons Cable, Montreal, Quebec, Canada, 27th January, 1893; 6 years.

Claim.—1st. An earth screw for posts A, made out of a round bar of steel, iron or any other suitable metal, with an appropriate head B, substantially as described, and for the purposes set forth. 2nd. The combination of an earth screw for posts A, with the post G, having a central wood piece D, angle irons E, cap F, plate L, and braces M and N, and hole H, for attaching to head B, of screw A, substantially as described, and for the purposes set forth.

No. 41,742. Travelling Crane. (Grue mobile.)

Frederick Norman Dixon, Philadelphia, Pennsylvania, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. In a travelling crane, in combination, a bridge, a trolley, a compound drum, and a cable connection common to and operatively engaged with said bridge trolley and compound drum, substantially as set forth. 2nd. In a travelling crane, in combination, a bridge adapted to run upon bridge ways, a trolley adapted for movement with respect to said bridge, a cable connection leading from the trolley along the bridge, thence to one end of one bridge way, thence to the other end of said way, thence to and freely along the bridge, thence to one end of the second bridge way, thence to the other end of said way, thence to the bridge, thence along said bridge to the trolley, substantially as set forth. 3rd. In a travelling crane, in combination, a bridge adapted to run upon bridge ways, a trolley adapted for movement with respect to said bridge, a cable connection leading from the trolley along the bridge, thence to one end of the adjacent bridge way, thence to the other end of said way, thence to and freely along the bridge, thence to one end of the second bridge way, thence to the other end of said second bridge way, thence to the bridge, thence along said bridge to the trolley, and a compound drum, one member of which is engaged with the cable extending along one bridge way, and the other of which is engaged with the cable extending along the other bridge way, substantially as set forth. 4th. In a travelling crane, in combination, a bridge, a trolley, a fall block, a compound drum, and a cable connection common to all of said devices, substantially as set forth. 5th. In a travelling crane, in combination, a bridge, a trolley, a fall block, a compound drum, fall block operative mechanism, and a cable connection engaged with the compound drum, the bridge, the trolley, and the fall block operative mechanism, substantially as set forth. 6th. In a travelling crane, in combination, a bridge, a trolley, a windlass drum journaled in bearings in said trolley, an operating cable connection wrapped about said windlass drum and extending in opposite directions from the trolley and common to it and to the bridge, a lifting or fall rope engaged with said windlass drum, means for locking the trolley against travel and the windlass drum against rotation, and a compound motor drum, substantially as set forth. 7th. In a travelling crane, in combination, a bridge, a trolley, a fall block depending from a windlass drum mounted in said trolley, and a cable connection wrapped about said windlass drum, thence extending in opposite directions along the bridge, thence each along the bridge way adjacent to it to the initial end of said way, thence both to the distant ends of the respective bridge ways, thence both to the bridge and inwardly along the same until they meet, and a compound drum, one member of which is engaged with the cable extending along one bridge way and the other of which is engaged with the cable extending along the other bridge way, substantially as set forth.

No. 41,743. Bulletin Board.*(Tableau pour afficher les nouvelles.)*

Percy Seaman Tunison, Leonia, New Jersey, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. A bulletin board, consisting of rods and fittings uniting the rods, and strands of wire carried by the board and adapted to support letters, as and for the purpose specified. 2nd. A bulletin board, consisting of piping and fittings uniting the piping, and strands of wire carried by the board and adapted to support letters, as and for the purpose specified. 3rd. In a bulletin board, the combination, with a frame consisting of vertical and horizontal rods, and fittings connecting the opposed edges of the members of the frame, of wire strands adapted to support letters and carried by the frame, and means, substantially as described, for securing and exerting tension upon the wires, as and for the purpose set forth. 4th. In a bulletin board, the combination, with a frame consisting of perpendicular and horizontal rods, and fittings connecting the opposed members of the frame, of wire strands carried by the frame, and means, substantially as described, for securing the wires to the frame and exerting tension thereon, letters engaging with the wires, and staple fastenings connecting said letters with the wires, as and for the purpose specified.

No. 41,744. Machine for Sawing Lumber.*(Machine pour scier le bois.)*

Alexander Rogers, sr., Muskegon, Michigan, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. In a sawing machine, the combination of the arbour, the saws adjustably mounted thereon, the shaft journaled back of and parallel with the said arbour, the discs adjustably mounted thereon, and the shifters connecting each disc with a particular saw to hold the same in alignment, so that when the latter is adjusted a like adjustment will be given to the former, substantially as described. 2nd. In a sawing machine, the combination of the arbour, the saws adjustably mounted thereon, the shaft journaled back of and parallel with the said arbour, the discs adjustably mounted thereon, the movable racks, the fixed and hinged shifters connecting, respectively, the discs and saws with the racks, each disc being so held as to be immediately back of a particular saw, so that when the latter is adjusted a like adjustment will be given the former, substantially as described. 3rd. In a sawing machine, the combination of the main frame, the parallel arbour and shaft journaled in the said frame, the saws and discs adjustably mounted on the said arbour and shaft respectively, the guides secured to the main frame parallel with the arbour and shaft, the movable racks carried by the guides, the fixed and hinged shifters connecting, respectively, a saw and a disc with the same rack, so that the said saw and disc will be held in alignment and both adjusted to the same extent by the movement of the rack, substantially as described.

No. 41,745. Cultivator. (Scarificateur.)

William J. Copp, James McCreath and John Challen, all of Hamilton, Ontario, Canada, 27th January, 1893; 6 years.

Claim.—1st. In a cultivator, the frame, composed of a central bar A, having curved forward extension C, secured thereto at B, with hub D, and square shanks E, and the bent side bars H, pivoted to the central bar by means of washers F, in combination with the bent lever K, pivoted at L, the radial teeth T, the wheel I, having supports J, connected at vertical shaft S, provided with lever attachment collar M, substantially as and for the purpose hereinbefore set forth. 2nd. In a cultivator, composed of bars A and H, with extension C, as described, in combination with the side bar adjusting lever O, provided with curved side straps P, pivoted at W, on adjustable bearing W', having radial teeth V, substantially as described and set forth. 3rd. The combination of the frame with forward extension C, the forward part being capable of vertical adjustment by means of the lever K, the bent side bars H, capable of side adjustment by means of lever O, and its connections, substantially as described and set forth.

No. 41,746. Lubricator. (Graisseur.)

Joseph Clark, Saginaw, Michigan, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. In a lubricator, the combination, with the feed or oil supply cup and the oil discharge cup, of the vertical and horizontal feed and disengage pipes, vertical and horizontal sleeves, and set screws for adjusting said pipes, and the upper discharge pipe for delivering oil from said oil discharge cup, substantially as described. 2nd. In a lubricator, the combination, with a feed or oil supply cup, and an oil discharge cup provided with filtering or straining material, and devices for adjusting said cups, of right angularly arranged and connected feed and discharge pipes communicating with said cups, the latter pipe having its outlet end arranged a short distance above said discharge cup, and a discharge cup for delivering the oil from the latter cup, substantially as described. 3rd. In a lubricator, the combination, with a feed or oil supply cup and an oil discharge cup, of the right angularly arranged and connected feed and discharge pipes in communication with said cups, the latter pipe having its outlet end terminating a short distance above said discharge pipe, the hollow sphere, the lower discharge pipe for conveying the oil from said sphere to the surface to be lubricated, and the sleeves and set screws for vertically and laterally adjusting said oil cups, substantially as and for the purpose specified. 4th. In a lubricator, the combination with a feed or oil supply cup, and a downwardly curved discharge pipe communicating therewith, of an oil discharge cup situated just below the outlet end of said discharge pipe, a discharge pipe communicating with the latter oil cup and having its lower portion tapered, curved, and horizontally arranged, the hollow sphere, and the lower discharge pipe for supplying lubricant therefrom to the wrist pin, substantially as described. 5th. In a lubricator, the combination with a T-shaped bracket having a vertical sleeve, an oil supply cup, right angled feed and discharge pipes, the latter having its lower portion tapered, curved, and horizontally arranged, a sphere, and a lower discharge pipe provided with a knife or scraper at its upper end and connected at its lower end with the bearing of the wrist pin, so as to deliver the lubricant thereto, substantially as described. 6th. In a lubricator, the combination, with supporting means, cup G, pipes 9 and 13, an oil discharge cup, and an upper discharge pipe having its lower portion tapered, curved, and horizontally arranged, or a lower reciprocating discharge pipe, a hollow sphere secured to the upper end thereof and formed with a slot in its side, and a reciprocated knife or scraper arranged within said sphere for directing the

oil into the latter pipe, substantially as described. 7th. In a lubricator, the combination, with supporting means, an upper oil discharge cup and an upper discharge pipe having its lower portion tapered, curved, and horizontally arranged, of a lower discharge cup and its exit pipe, a lower discharge pipe, a hollow sphere secured to the upper end thereof and formed with a slot in its side, a knife or scraper, which is also secured to the upper end of the latter pipe, and means for reciprocating said sphere, pipe, and scraper, substantially as described. 8th. In a lubricator for steam engines, the combination, with the guide frame, cross head and T-shaped bracket, of the oil supply and discharge cups, sleeves and screws for adjusting said cups, the vertical feed pipe, and the downwardly curved discharge pipe for feeding oil from the former to the latter cup, the upper discharge pipe, and the lower discharge pipe for delivering oil to said cross head, substantially as described. 9th. The combination, in a lubricator, with an oil discharge cup, an upper discharge pipe having a tapered, curved and horizontally arranged lower portion, and a lower discharge pipe having a hollow, slotted, and reciprocating sphere, and a knife or scraper attached to its upper end, substantially as described. 10th. In a lubricator, the combination with the feed or oil supply cup, and the vertical feed pipe connected at its upper end to said cup, and having a plug intermediate of its ends and a horizontal sleeve at its lower end, of a bracket having a vertical sleeve at its outer end, a tubular support mounted in said horizontal sleeve, a downwardly curved discharge pipe, an oil discharge cup arranged below the same, upper and lower discharge pipes, and screws for adjusting said cups vertically and laterally, substantially as described. 11th. In a lubricator, the combination with an oil discharge cup and an upper discharge pipe having a tapered and curved lower portion, of a lower discharge pipe having a slotted hollow sphere at its upper end and a device secured within said sphere, which is arranged to engage the outlet end of said upper discharge pipe, substantially as described.

No. 41,747. Gate for Railway Car Platforms.

(*Barrière pour plate-forme de char.*)

Henry Howard, Providence, Rhode Island, U.S.A., January, 1893; 6 years.

Claim.—1st. A car having on each side of its usual entrance a recess at right angles to said entrance, such recess being just within the line of the outer side edge of the platform, in combination with sliding doors fitting such recesses, as set forth. 2nd. A railway car with a hallway, entry, porch, or vestibule, formed by constructing in the interior of the car double partitions at the ends of the car at right angles with the ends thereof and forming between the partition walls an inclosure into which doors to be used as sides of the hall, porch, or vestibule can be moved and concealed.

No. 41,748. Burglar Alarm. (Avertisseur à sonnerie.)

Charles Cassal Davis, Los Angeles, California, U.S.A., 27th January, 1893; 6 years.

Claim.—1st. The combination of the alarm mechanism, the frame and base, the driving arbour journaled in such frame and base, the winding blade secured to such arbour and arranged substantially axially parallel therewith, the main spring attached to the frame and arbour, and the securing blade secured to the frame and arranged to project into a plane tangent to the circle described by the revolution of the winding blade. 2nd. The combination of the alarm mechanism, the frame and base, the driving arbour journaled in such frame and base, the flat winding blade secured to such arbour and arranged substantially axially parallel therewith and with its width tangential to its path, the main spring attached to the frame and arbour, and the flat securing blade secured to the frame and arranged with its width tangential to the path of the winding blade. 3rd. The combination of the base, the bell secured thereto, the alarm operating mechanism secured to such base and inclosed in the chamber formed by such base and bell, the master blade attached to such base and adapted to stand at an angle thereto, and the winding blade operatively connected with the alarm mechanism and adapted to stand at an angle to the base, corresponding to the angle of the master blade.

No. 41,749. Sulphur Candle for Disinfecting.

(*Chandelle de soufre pour désinfecter.*)

Stephen B. Morss, Rahway, New Jersey, and Theodore F. Bourne, Clifton, New York, both in the U.S.A., 27th January, 1893; 6 years.

Claim.—1st. A sulphur candle, composed of a mass or block of sulphur having a combustion cavity or chamber beneath its surface, substantially as described. 2nd. A sulphur candle, composed of a mass or block of sulphur, having a combustion cavity or chamber that is larger at its lower part than at its upper part, whereby overhanging walls of sulphur are formed, substantially as described. 3rd. A sulphur candle, composed of a block or mass of sulphur, having a combustion cavity or chamber beneath its surface, and a combustible material within said cavity, substantially as described. 4th. A sulphur candle, having a cavity or chamber beneath its surface, and a hollow combustible mould D, within said cavity, substantially as described. 5th. A sulphur candle, having a cavity or chamber beneath its surface, a hollow mould D, within said cavity,

and combustible material within said mould, substantially as described. 6th. A sulphur candle having a series of depressions with corresponding ridges to prevent the too quick spread of melted sulphur over its surface, substantially as described. 7th. The combination of a candle with a band G, surrounding it, and a chamber between the upper part of said candle and band, substantially as described. 8th. The combination, of a sulphur candle, with a band G, surrounding it, said band being larger at its upper part than at its lower part, whereby a chamber is formed between the candle and the band, substantially as described.

No. 41,750. Pruning Shears. (Sécateur.)

Frank P. Kern, Missoula, Montana, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. The pruning shears, comprising an upward curved hook having a depending shank, a handle slidably mounted on the hook shank, a shear pivoted at the base of the hook and adapted to close against one side of the same, the shear having a depending shank normally extending down alongside of the handle, means for holding the shear away from the hook to permit the entrance of the limb from above, and a connection between the shear shank and the handle, substantially as described. 2nd. The pruning shears, comprising an open topped hook having a depending straight shank, a sleeve held to slide on the hook shank and adapted to be secured to a handle, a shear pivoted at the base of the hook and having a weighted shank, and connecting rods pivoted to the sleeve and to the shear shank, substantially as described. 3rd. The pruning shears, comprising an open-topped hook having a depending straight shank, a sleeve held to receive and slide on the hook shank and adapted to be secured to a handle, a shear pivoted at the base of the hook and held normally in open position, connecting rods extending from the shank of the shear to the sleeve, and a cord for moving the shear shank in relation to the shear, substantially as described.

No. 41,751. Furnace for Roasting Ore.

(*Fourneau pour le grillage des minerais.*)

Richard Pierce, Denver, Colorado, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. An annular or turret like ore roasting furnace, composed of an inner wall having a horizontal slot, and an outer wall, a continuous hearth between said walls, an inlet for the material to be treated, and an adjacent outlet for the treated material, combined with stirrers or rabbles projecting into said furnace through said slot, and means to move said stirrers or rabbles continuously through said furnace from inlet to outlet, substantially as described. 2nd. An annular or turret like ore roasting furnace, having a continuous slot in its inner wall above the hearth, combined with arms extending through said slot into the furnace, over the hearth thereof, and provided with rabbles and means to move the said arms progressively from end to end of the furnace, substantially as described. 3rd. An annular or turret like ore roasting furnace, having a continuous horizontal slot, stirrer arms projecting into the furnace through said slot, a shield carried by the said stirrer arms and held up against the said slot, and means to revolve the said arms, substantially as described. 4th. An annular or turret like ore roasting furnace, having a horizontal slot in its inner wall, and stirrer arms projecting into said furnace through said slot and united in a common hub, combined with a central stationary column, and means to revolve the said stirrer arms about such column, substantially as described. 5th. An annular or turret like ore roasting furnace, having a horizontal slot in its inner wall just above the hearth, and hollow stirrer arms projected into said furnace through said slot, combined with a hollow hub in which all of said arms are centered, and a stationary hollow column having openings communicating with the said hollow hub, and air tight connections between the said hollow hub and hollow column, substantially as described. 6th. An annular ore roasting furnace, having its inner wall slotted horizontally, combined with stirrer arms entering said furnace through said slot and composed of sections, couplings for uniting said sections, a supporting track, and rollers on said couplings running upon such track, substantially as described. 7th. An annular ore roasting furnace, comprising an outer wall and an inner wall, the latter having a continuous horizontal slot, the upper edge of which is constituted of skewbacks for the crown of the furnace, angle bars in which said skewbacks are supported, transverse I-beams and supports therefor, and bolts suspending said angle bars from said I-beams, combined with stirrer arms projecting into said furnace through said slot, and means to move said arms, substantially as described.

No. 41,752. Bottle Filling Apparatus.

(*Appareil à embouteiller.*)

John Jackson, Lonsdale, Providence Co., Rhode Island, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. The filling apparatus comprising the trough having a series of dependent tubes provided with valves, a shifting lever connected with the valves, reservoirs connected with the trough, and valves located above and below the reservoirs, the said valves being operated simultaneously, one set being closed when the other set is opened, as shown and described. 2nd. In a bottle filling apparatus, the combination, with supply tubes and reservoirs connected therewith, of valves located above and below the reservoirs, a frame

having a link connection with both sets of valves, the connection being so effected that when one set of valves is closed the other set is opened, said sections taking place simultaneously with the movement of the frame, as and for the purpose specified. 3rd. A bottle filling apparatus, comprising the trough having a series of dependent tubes provided with valves, rods extending up from the valves, a vertically sliding frame to which the upper ends of the rods are secured, guides in which the frame moves, a pivoted lever crossing the frame and pivotally connected between its ends with the said frame, and a supply mechanism leading to the trough, substantially as described. 4. A bottle filling apparatus consisting of a trough 10, having a series of partitions 29, a series of tubes depending from every compartment formed in the trough, a vertically sliding frame carrying a series of depending valve rods having valves at their lower ends located within the tubes, a lever for operating the said frame, reservoirs having a series of pipes leading therefrom, valves located both above and below the reservoirs, and a mechanism, substantially as shown and described, for operating simultaneously both sets of valves, one set of valves being closed when the other set is opened, substantially as and for the purpose set forth.

No. 41,753. Device for Opening and Closing Gates.

(Appareil pour ouvrir et fermer les barrières.)

Joseph Alexis Robillard, St. Andrews East, Quebec, Canada, 28th January, 1893; 6 years.

Claim.—1st. In a gate opening and closing device, the combination with a gate secured by brackets to a vertical rod hung in brackets to a gate post, of a grooved pulley secured to the said vertical rod, an endless chain or cable secured to this pulley and passing to either side of the said gate over loose grooved pulleys on shafts transverse to the roadway, loose pulleys on the said shafts having each two catches to engage a projection on the side of grooved pulley over which the cable operating the gate passes, shafts journaled beneath the said shaft carrying the loose pulleys, a grooved pulley secured to these shafts and connected by an endless chain or cord to the pulleys carrying the catches, these shafts having on the road side upwardly turned arms, and the horizontal projections over the roadway, the other ends of said shafts having a downward arm to which a weight is secured, substantially as set forth. 2nd. A gate opening and closing device, consisting of a shaft H, held in suitable supports, the loose pulley L, having a radial projection *i*, a loose pulley J, having cams *j*, to engage the said projection *i*, the shaft K, journaled under the said shaft H, a grooved pulley *h*, secured to this shaft K, a chain or cable L, connecting the pulleys *h* and J, the shaft K, having an arm M, at one side and a weighted arm N, at the other side, substantially as set forth. 3rd. In a device for locking the gate or gates in an open or closed position, the combination with a gate secured to a vertical rod, of the pulley E, loosely secured to the said rod, a plate R, having notches *r*, secured to the said rod, a spring rod P, secured to the gate post and adapted to be engaged by the said notches *r*, a crescent shaped plate S, secured to the pulley E, having an eccentric outer edge adapted to engage the said spring rod, a cam T, secured to the said vertical rod, adapted to be engaged by the plate S, substantially as set forth. 4th. In a gate opening and closing device, the combination, with the opening and closing mechanism G, G', gate posts C, C', brace D, vertical rods B, B', and pulley E, of the pulleys O, secured to the said rods B, B', and the chain or cable P', substantially as set forth.

No. 41,754. Bundle Carrier and Band Cutter for Thrashing Machines. (Porte-gerbe et coupe-hart pour machines à battre.)

Alonzo Booth, Augusta, Montana, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. In a bundle carrier for thrashing machines, the combination with the supporting plate, a horizontal shaft journaled thereon, a bevel pinion on the shaft, a pulley on the shaft, a horizontally disposed gear wheel mounted on the plate, having teeth on its under face and an apertured hub, an axle passing through said hub, a horizontal shaft having its inner end supported by said axle, a bevel pinion on the shaft meshing with the teeth of said wheel, a revoluble table or plate mounted on the axle above the wheel, a pulley on the shaft supported by the axle, a bearing depending from the cap through which said shaft passes, a conveyor through having an endless apron therein, drums over which said apron passes, a pulley on one of said drums, and a belt connecting with the pulley on the axle shaft, substantially as described. 2nd. In a bundle carrier for thrashing machines, the combination with a revoluble table or plate, a cover trough pivotally secured thereto, a gear wheel below the plate, an axle passing through said wheel, and to which the plate is secured, a horizontal shaft supported by said axle and plate, a pinion on said shaft meshing with said gear wheel, a connection between said shaft and the conveyor for actuating the apron thereof, and means for rotating the gear wheel, substantially as described. 3rd. In a bundle carrier for thrashing machines, the combination with a revoluble table or plate, a conveyor trough hinged thereto, a gear wheel below the plate, an axle passing through the wheel, a

bevelled gear on the shaft, a depending bearing on the plate through which the shaft passes, a pulley on the outer end of the shaft, a pulley on the conveyor trough, a band connection between the two pulleys, a band cutter on the conveyor trough, and means for actuating the several parts, substantially as described.

No. 41,755. Railway Car. (Char de chemin de fer.)

Edwin T. Earl, Los Angeles, California, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. In a car ventilator, the combination, with the lid hinged at one end, of the screen hinged to the opposite end of the lid, and the wings hinged to the lid near its side edges. 2nd. In a car ventilator, the combination, with the lid hinged at one end, of the screen hinged to the opposite end of the lid, and the wings hinged to the lid near its side edges, said wings tapering as shown and provided with notches at their larger ends, substantially as set forth. 3rd. In combination, with a car provided with openings in its roof and with hinged lids adapted to cover the openings, the side wings hinged to the lids near the side edges of the latter, said wings tapering toward the middle of the car, substantially as and for the purpose set forth. 4th. In combination, with a car provided with openings in its roof and with hinged lids adapted to cover the openings, the side wings hinged to the lids near the side edges of the latter, and the screen hinged to the free ends of the lids, all substantially as shown and described. 5th. The combination of the roof provided with the opening, the raised cleat frame surrounding the opening, the raised hinge cleat, the lid hinged to the roof and provided with the face flanges arranged to fit the cleat frame, the hinge cleats secured to the under face of the lid with a space between them, the tapering side wings hinged to the under face of the lid, and the screen hinged to the under face of the lid, as set forth.

No. 41,756. Electric Railway. (Chemin de fer électrique.)

Henry S. Pruyn, Hoosick Falls, New York, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. In a railroad track, the combination with the rail, of two supporting girders therefor, the bolts or rivets for uniting the girders, said bolts or rivets having enlarged central portion for spacing said girders, substantially as described. 2nd. In a railroad track, the combination with the rail, of two supporting girders therefor, united by spacing bolts or rivets, and a filling of sound deadening material between said girders, substantially as described. 3rd. In a railroad track, the combination with the rail, of two supporting girders therefor, united by spacing bolts or rivets, the space between said girders being filled with plastic material which afterward hardens, substantially as described. 4th. In a railroad track, the combination with the rail, of two supporting girders therefor, united by spacing bolts or rivets, and spools of plastic material on the rivets between the girders, as described. 5th. In a railroad track, the combination with the rail, of two supporting girders therefor, united by spacing bolts or rivets, elastic spools on the rivets, and a filling of head material between the girders, and around the spools, substantially as described. 6th. In a railroad track, the combination with the girders A, of the rail B, having lugs *b*¹, entering the space between the girders and the bolts C passing through holes in said lugs, and fastening means for the lower ends of the bolts, substantially as described. 7th. In a railroad track, the combination with the girder and the rail, of the beam D, having a tongue *d*, fitting the space between the girders and means for fastening said beam to the structure, substantially as described. 8th. In a railroad track, the combination with the rail, and the means for supporting it, of the beam D, having longitudinal grooves, flat metallic strips having their edges entering said grooves, and means for securing said strips in position, substantially as described. 9th. The combination with the strips F, having longitudinal grooves *f*, of clips H, having grooves *h*, and means for securing them to the strips, substantially as described. 10th. The combination with the elevated railroad structure of the clips H secured to the under side thereof and having perforated lugs *h*¹, substantially as described. 11th. In an elevated track for electric railways, the combination with two girders supporting a rail and having outwardly and downwardly inclined flanges of electric conductors secured below said flanges and inside their outer edges, substantially as described. 12th. The combination with the girders A, having inclined flanges *a*², of the beam D, of less width than the riveted girders and their flanges, and electric conductors secured to said beam, substantially as described.

No. 41,757. Electric Arc Lamp.

(Lamp électrique à arc.)

Frits Hansen, Leipzig-Renduitz, Saxony, German Empire, 28th January, 1893; 6 years.

Claim.—1st. An electric arc lamp in which the regulation of the length of arc is effected by means of a pivoted electro-magnet, having a fixed armature and a preponderance of weight in front of or behind its axis of oscillation according as the armature is arranged above or below the electro-magnet, when this is in its normal position, the arrangement being such, that on a predetermined increase in the resistance of the arc circuit taking place, the electro-magnet will by the establishment of equilibrium between the preponderance of weight on one hand and the attraction between the electro-

magnet and armature on the other hand, be caused to partly turn and release the mechanism which controls the movement of the carbons and allow these carbons to move towards each other, substantially as described. 2nd. An electric arc lamp of the kind referred to in preceding claim, in which the regulating mechanism comprising a chain wheel is arranged in a frame that turns or oscillates in common with the electro-magnet, and the chain wheel is mounted in such a manner that the point thereof where the portion of the chain carrying the upper carbon holder runs off, is located at the intersection of the axis of the carbons with the axis of oscillation of the electro-magnet, so that the movement of the lower carbon only will be directly produced by movement of the electro-magnet, substantially as hereinbefore described. 3rd. In an arc lamp of the kind referred to in claim 1, the arrangement of a stop adapted to be operated from a point external to the cover or case inclosing the regulating mechanism, for the purpose of releasing the ratchet mechanism, that limits the movement of the carbons, substantially as described. 4th. In an electric arc lamp having a constant focus, the arrangement of the globe carrier fixed to the guide rods of the carbon holders, and formed with a groove or recess to receive the lower tubular portion of a globe, the arrangement being such that the globe can be removed by simply lifting it, as described. 5th. In an electric arc lamp, a clamping device for the upper carbon consisting of a pivoted bent lever, one arm of which moves in a slot in the carbon sleeve, and is pressed against the carbon by a spring that acts upon the other arm which serves also as a handle, as set forth. 6th. My improved electric arc lamp constructed substantially as hereinbefore described with reference to and shown in figs. 1 to 5, inclusive, or modified according to fig. 8 of the drawings annexed.

No. 41,758. Fruit Carrier.

(Appareil pour le transport des fruits.)

George W. Stevens, San Francisco, California, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. A fruit carrying crate, consisting of compartments formed of double parallel strips having slits made in one of the edges, corresponding double parallel strips extending transversely to the first ones, with slits whereby the two series are locked together, one series having a space left below its lower edges, and the other series having a space extending in the opposite direction between its upper edges and a box within which several series of these compartments are contained with interposing diaphragms, substantially as herein described. 2nd. A fruit carrier, consisting of compartments formed of double parallel strips of material crossing each other at right angles and notched together, so that each compartment has a double elastic wall around it, in combination with reinforcing strips of heavier material crossing each other near the centre of each compartment series, said reinforcing strips extending from the extreme upper to the extreme lower edges of the compartments, and acting as a support for the superposed series, substantially as herein described. 3rd. In a fruit carrier, compartments formed by the double transversely arranged strips notched together so as to leave air spaces between the parallel sets of strips on one side, and corresponding air spaces between transverse parallel strips upon the opposite side, double reinforcing strips forming a part of said compartment, and extending entirely from the top to the bottom thereof, with air spaces between them, diaphragms fitted between the different compartments having slits or openings made in them corresponding with the spaces between the reinforcing strips, and an exterior case or box within which these compartments are fitted one above the other, with the interposing diaphragms, the top, bottom and sides of said boxes being perforated or slotted to correspond with the passages between the strips and through the diaphragms, substantially as herein described. 4th. A fruit carrier, consisting of compartments formed of double parallel strips of material crossing each other at right angles, and notched together so that each compartment has a double elastic wall around it, and air spaces are formed above and below each compartment at right angles with each other, reinforcing strips of heavier material crossing each other near the centre of each compartment series, and extending from the extreme upper to the extreme lower edges of the compartments, horizontal diaphragms interposed between each compartment series, with openings corresponding with the spaces between the double walls, gratings at the top and bottom, and an inclosing case with ventilating openings corresponding with those in the diaphragms, substantially as herein described.

No. 41,759. Process of Drying and Curing Fish.

(Procédé pour sécher et préparer le poisson.)

Thomas S. Whitman, Annapolis, Nova Scotia, Canada, 28th January, 1893; 6 years.

Claim.—1st. The process herein described of curing fish, which process consists in exposing the fish to artificial heat and currents of fresh air, substantially as described. 2nd. The process herein described, of curing fish, which process consists in exposing the fish alternately to artificial heat and to currents of fresh air, substantially as described.

No. 41,760. Divider for Mowing Machines.

(Diviseur pour faucheuses.)

Fred. John J. Schuett, Saginaw, Michigan, U.S.A., 28th January, 1893; 6 years.

Claim.—In a mowing machine, the combination of a shoe attached to and supporting the free end of the finger bar, with a shield protecting the forward end of the divider, carried on the shoe, the divider supported by the shoe and track board, and the track board attached to and following the shoe, all substantially as described.

No. 41,761. Printing Machine. (Machine à imprimer.)

Thomas McDowell, Niagara Falls, New York, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. A machine for printing a continuous web of paper simultaneously upon opposite sides, comprising rotary platen wheels above and below the line of travel of the paper, and in different positions in the width of said travel, printing band wheels facing said platen wheels and journaled to the stationary frame, carrying pulleys arranged in sets above and below the passage of the paper, printing bands carried on said band wheels and pulleys, and mechanism imparting continuous rotary motion to the printing band wheels and platen wheels, as set forth. 2nd. In a machine for printing a continuous web of paper simultaneously upon opposite sides, the combination, with the stationary supporting frame, of two horizontal shafts disposed one directly over the other, with the travel of the paper between them and journaled to the stationary frame at right angles to the line of said travel, a platen wheel and a printing band wheel on each of said shafts, and facing respectively, a coating printing band wheel and a platen wheel on the other of said shafts, two sets of pulleys respectively above and below the aforesaid shafts, two printing bands, each carried on one of the sets of pulleys and one of the aforesaid band wheels, paper drawing rolls pivoted to the frame near the delivering end of the machine, and a train of gears imparting continuous rotary motion to the printing band wheels, platen wheels and paper drawing rolls, as set forth. 3rd. A machine for printing paper upon both sides simultaneously, comprising a main frame, a horizontal paper roll and a horizontal paper guiding roller, journaled to one end of the frame, a paper driving knife secured to a carrier mounted on the opposite end of the frame, printing band wheels above and below the line of travel of the paper, and axially horizontally and at right angles to said line of travel, platen wheels opposite said printing band wheels, printing bands running on said wheels, a printing cylinder and a platen cylinder in the line of travel, of the paper near one end of the frame, paper drawing rolls near the delivering end of the machine, and a train of gears transmitting motion from the main driving shaft to the aforesaid printing cylinder, its platen cylinder, one of the printing band wheels and the platen wheel on the same shaft, and the knife carrier, substantially as described and shown. 4th. The combination, of the main frame, consisting of the pedestals A, A, horizontal plates A¹, A¹, and standards A², A², rising from said plates, the paper roll shaft a, journaled horizontally to one end of said pedestals, the pulleys P, P, and P¹, P¹, mounted on shafts journaled in bearings on the pedestals, pulleys P², P² and P³, P³, mounted on shafts similarly supported on the standards, the shaft b, journaled to the plates A¹, A¹, the platen wheel B, and printing band wheel C, mounted on said shaft, the shaft b¹, journaled to the standards A², A², the platen wheel B¹, and printing band wheel C¹, mounted on the latter shaft and respectively directly over the printing band wheel and platen wheel of the shaft b, the printing band D, travelling on the wheel C, and on the pulleys P, P, and P¹, P¹, the printing band D¹, travelling on the wheel C¹, and on the pulleys P², P², and P³, P³, the guide roller F, journaled to the plates A¹, A¹, above the paper roll, the main shaft H, mounted in bearings on the press frame, the pinion I, secured to said main shaft, the shaft c, journaled to the press frame, perforating wheels I, I, and gear wheel 4, secured to said shaft, the knife carrier L, journaled to the delivering end of the frame of the machine, and a train of gears transmitting motion from the pinion I, to the aforesaid shafts b, c, and knife carrier L, substantially as described and shown.

No. 41,762. Oscillating Chair. (Fauteuil oscillant.)

John Peter Auvil, Davis, West Virginia, U. S. A., 28th January, 1893; 6 years.

Claim.—1st. The combination of a frame, a pair of chair rods hung pivotally near the top thereof, a pair of treadle rods also hung pivotally near the top thereof, but to the rear of the chair rod hanging and crossing the said chair rods, a treadle pivotally connected with both sets of the said rods at their lower ends and provided with a step 27, located at a considerable distance forward of the treadle rods whereby the treadle acts as a lever, and a rod 54 pivotally connecting the back of the chair with a treadle rod 21, substantially as described. 2nd. The combination of the frame 10, the rods 15, 21, pivotally hung thereon and crossing each other, a chair hung upon the said rods, a treadle pivotally hung upon the lower ends of the said rods and provided with the step 27, at a material distance forward of the rods 21, and a movable portion 28, hinged to the rear edge of the step to fold forward thereon, substantially as described. 3rd. The combination of a frame 10, two rods 15, 21, hung thereon and crossing each other, a treadle pivotally attached to the lower

ends of the said rods, a chair having one pivotal connection 19, with the rod and further having a removable connection 53; with the same rod and a pivoted rod connection 54, with the rod 21, the connections 53 and 54 being interchangeable, as described. 4th. The combination of the hollow chair arm 32, the perforated brace 29, fitted to slide therein, the U-shaped pin 34, having one short arm 35, a spring 38, acting upon said pin, and a plate 39, perforated to register with the perforations in the said brace, the short arm 35, being adapted to swing to one side of the said perforations in the plate or to register therewith, substantially as described. 5th. The combination of a chair, two pairs of hanging rods therefor, a frame knife edged hangers 16, for the said rod bearings 17, upon the frame to receive the hangers, the hangers each having a head 41, projecting at its knife edge and the bearings having broad V-shaped bearings for the said knife edged hangers and recesses 42 at the sides, substantially as described.

No. 41,763. Method of Cold Rolling Tubes.

(*Méthode de laminage des tubes.*)

George Harker Everson, John Quincy Everson, James Clark Williams and Simeon Bissel, all of Pittsburg, Pennsylvania, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. The process herein described, of cold rolling metal tubes or pipes, consisting in placing inside of the tube a mandrel of slightly less diameter than the interior of the pipe or tube, placing a suitable lubricant between the mandrel and the pipe, and then passing the pipe and the mandrel through a pair of grooved rolls, so as to reduce the diameter of the pipe or tube and elongate it at the same time that the surface of the tube is polished and finished, substantially as described. 2nd. The process herein described of cold rolling metallic tubes or pipes, consisting in first placing inside of the tube a mandrel of greater length than the tube, placing a suitable lubricant between the tube and mandrel, then passing the tube with the mandrel placed inside, of it a suitable number of times through a pair of grooved reducing rolls, and then finishing the pipe by passing it without the mandrel, through a pair of rolls provided with a round groove, substantially as specified.

No. 41,764. Quilting Device for Sewing Machines.

(*Appareil à piquer pour machines à coudre.*)

Henry Thomas Davis, New York, State of New York, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. In a quilting attachment, the combination of the rollers having pins projecting therefrom and end pieces in which the rollers are journaled, one of said ends having ratchet teeth, and said rollers having spring plates for engaging said ratchet teeth and perforated at their free ends to fit over pins in the rollers, substantially as and for the purpose set forth. 2nd. In a quilting attachment, in combination with the rollers and end pieces, in which the rollers are journaled, one of said end pieces having ratchet teeth, the spring plates secured to said rollers, and bent across the ends of the rollers and inwardly at the free ends, and journal screws fitting in the ends of the rollers and passing through said plates, substantially as set forth.

No. 41,765. Car Coupler. (*Attelage de chars.*)

Charles De Roberts, Omaha, Nebraska, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. In a link controlling car coupling, the combination of the following instrumentalities, to wit: a pivoted gravity actuated tumbler, and a link operated tongue, arranged substantially as shown and for the purpose set forth. 2nd. In a link controlling draw head, a gravity actuated tumbler adapted to work against a suitable pin, a pivoted tongue adapted to work against said tumbler, in combination with a chain and lever for operating said pivoted tongue, all arranged substantially as shown and for the purpose set forth. 3rd. In a link controlling draw head, the combination of the following instrumentalities, to wit: a pivoted gravity actuated tumbler, said tumbler working within a suitable slot, a pin, a bifurcated cam backed tongue adapted to work against said pivoted tumbler, an operating lever pivoted to said tongue, and adapted to be locked in any suitable position, all of said working effects being adapted to be operated in conjunction with a link, substantially as and for the purpose set forth. 4th. In a draw head, the arrangement of the following instrumentalities, to wit: a gravity actuated tumbler, a pivoted link controlling tongue adapted to work below and against said tumbler, an operating lever connected to said tongue, said tongue and tumbler being adapted to operate in combination with a link and pin, all substantially as and for the purpose set forth.

No. 41,766. Bucksaw. (*Scie de travers.*)

Peter Woodring and Joseph L. Blunt, both of Oelwein, Iowa, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. In a bucksaw, the combination, with the frame composed of the side or end pieces A, A', and the centrally interlapping and crossing diagonal braces D, D, having slots c, c, of a clamping set screw passing through said slots and adjustable from the exterior of the braces for operation in connection with an adjustable stretcher and the saw blade, substantially as specified. 2nd. In a

bucksaw, the combination of the plate G, G, having slots c, c, in them, the diagonal crossing braces D, D, having central reductions b, b, in their adjacent surfaces, and slots c, c, the clamping set screw S, the end frame pieces A, A', and the adjustable stretcher C, for operation in relation with each other and with the saw blade, substantially as set forth.

No. 41,767. Draft Regulator. (*Régulateur du tirage.*)

The Howard Thermostat Company, assignee of Charles De Zang Howard, all of Syracuse, New York, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. A thermostatic plate, consisting of two contiguous sheets of material of different expansible properties, said plate having a broad base fixed to a suitable support and a gradually narrowed body, in combination with the damper operating mechanism connected to the narrow end of the plate, substantially as described. 2nd. A thermostatic plate, consisting of two contiguous sheets of material of different expansible properties, said plate having a broad base fixed to a suitable support and a gradually narrowed body, a supporting standard, to the base of which the base of the thermostatic plate is securely fastened, a bell crank lever fulcrumed to the upper end of the standard, and a link or chain connecting the short arm of said lever to the apex of the thermostatic plate, substantially as described. 3rd. The combination, with the triangular thermostatic plate, the standard to which it is secured at its base, and the bell crank lever and its connecting link or chain, of the crank shaft having a bearing in the thermostatic plate, and a knob and index at its outer end, and the chain connecting the crank with the apex of said plate, whereby the thermostat may be set to operate at a predetermined or desired temperature, substantially as specified. 4th. The combination, with the supporting standard, the triangular thermostatic plate secured to the same at its base, and the bell crank lever and link connecting the short arm with the apex of the plate, of the damper connected to the long arm of said lever by a suitable cord or connection, so as to automatically drop as the thermostatic plate expands and be moved positively by the contraction of the plate, substantially as specified.

No. 41,768. Machine for Making Barrels.

(*Appareil pour faire les barils.*)

The New York Barrel Machine Company, New York, State of New York, assignee of William Thomas Vale, Toronto, Ontario, Canada, 28th January, 1893; 6 years.

Claim.—1st. A barrel former having rings A, detachably connected to it on each side of its centre, substantially as shown and described. 2nd. A rocking frame D, connected to the movable half ring F, by the pivoted link G, in combination with rods L, jointed together by the nut M, and connected at one end to the frame D, and at its other end to the lever I, which is connected to the adjustable ring H, substantially as and for the purpose specified. 3rd. The spindle O, journaled in the box P, and carrying the cutter head N, and grooved pulley S, in combination with the longitudinally adjustable bar Q, half ring T, connected to the grooved pulley S, as described, the hand lever U, pivoted on the quadrant V, and connected to the bar Q, substantially as and for the purpose specified. 4th. In a barrel machine, the combination, with the movable half rings, of backing rings detachably connected to the said half rings, substantially as and for the purpose specified. 5th. In a barrel machine, the arms x, pivoted on the movable sleeve w, each arm having a slot in it to fit onto a pin on one of the sections of the collapsible former, substantially as and for the purpose specified. 6th. In a barrel machine, an adjustable end stop r, pivoted on the shaft E, in combination with the adjustable stop r', adapted to hold the said stop r, in position, substantially as and for the purpose specified. 7th. In a barrel machine, a lever I, pivoted on one half ring and adapted to engage with a pin 2, on the opposite half ring, substantially as and for the purpose specified. 8th. In a barrel machine, the combination of the arms u, pivoted on the frame of the machine and connected together by the rod t, each arm having a hooked end s, substantially as and for the purpose specified.

No. 41,769. Metallic Car. (*Char métallique.*)

William Pennock, Minerva, Ohio, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. A car floor constructed from metallic flanged or channel bars, the flanges of said bars turning downward, whereby a smooth floor surface is obtained, substantially as shown. 2nd. A car floor constructed from an odd number of metallic flanged or channel bars, so that one of said bars shall be in the middle of the car, and to which the draw bars may be conveniently attached, substantially as and for the purpose shown. 3rd. A car, the floor and sides of which are constructed from flanged metallic sheets or strips, substantially as shown. 4th. A car, the floor and sides of which are constructed from flanged metallic sheets or strips, those of the floor extending longitudinally with the car body, and those of the sides extending up and down, substantially as shown. 5th. In a car, the combination, with the flanged metallic sheets composing its sides, of metallic folded strips or posts for joining the edges of such strips, said folded strips split at one end to straddle a portion of the roof and divided at the opposite end, and spread apart to form an extended surface for attachment to the floor, substantially as set forth. 6th. In a car roof, the combination, with flanged metallic

sheets or strips extending in a direction across the car body, of carlings F, the T-shaped top portion of said carlings being bent down to unite the adjoining flanged edges of said roof strips, substantially as shown.

No. 41,770. Draw Bar and Spring.

(*Barre d'attelage et ressort.*)

James Addison Hinson, Des Moines, Iowa, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. A draft plate for draw bar riggings for car couplers, having the end flanges extending below the lower edges of said plate, openings formed therein, and a removable lower flange adapted to be inserted in said openings, substantially as described. 2nd. A draft plate for draw bar riggings for car couplers, having end flanges formed with openings therein, and chamfered away on their contiguous faces, in combination, with a removable flange adapted to enter and be secured in said openings, substantially as described. 3rd. A draft plate for draw bar riggings for car couplers, having end flanges formed with openings therein, and chamfered away on their contiguous faces, in combination, with a square rod or bolt having a slot at one end, a washer adapted to fit said bolt, and a key for securing said washer in place, substantially as described.

No. 41,771. Brick Kiln. (*Four à brique.*)

Stephen James Plant, Momence, Illinois, U. S. A., 28th January, 1893; 6 years.

Claim.—1st. The furnaces, in combination with flues to conduct the heated gases directly into the interior of the kiln, the kiln floor freely perforated for the passage of gases down through the same, underground passages b^2 , b^3 , below the kiln floor and connecting with the apertures therein, and the lower subflues b , b^1 , the former connecting with the stack and the latter with the subflues b^2 , b^3 , substantially as described. 2nd. In a brick kiln, in which the hot gases are delivered into the upper part of the interior of the kiln, the kiln floor G, composed of perforated bricks g , and entire bricks g^2 , in alternate rows, in combination with the shallow chamber D, divided by partitions d , d^2 , with openings or passages at their alternate ends, and a subflue or passage b^3 , arranged below said chamber and provided with openings d^1 , connecting with alternate spaces in the partitioned chamber above and also connected suitably with the stack, whereby the draft is down, through the material piled in the kiln, and the kiln floor into the said subflue and through this to the stack, substantially as described. 3rd. In a brick kiln, the underground flue passage b , connecting with the stack, in combination, with the cross passage b^1 , on the same level, the upper subflue or passage b^2 , extending around the four sides of the kiln on a plane just above the passages b , b^1 , and connecting with the latter at two opposite sides, the central subflue b^3 , running lengthwise of the kiln and connecting at each end with the flue b^2 , and a perforated kiln floor connected by suitable passages with said central flue b^3 , substantially as described. 4th. In a brick kiln, the underground flue b , connected with the stack, in combination with the cross flue b^1 , the rectangular flue b^2 , central flue b^3 , chamber D, provided with partitions d , the floor G, constructed of alternate rows of perforated and entire brick g , g^2 , the false side walls A^1 , whereby upward side flues are provided, and the furnaces F, provided with flues connecting directly with said side flues, the several parts constructed and connected for operation, substantially as described.

No. 41,772. Belt Tightener. (*Agrafe de courroie.*)

John B. Noble, of Tatum, and Joseph B. Hensley, of Baird, both in Texas, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. The combination, with the frame, the vertical shafts 21, 22, having pulleys 25, 24, and the horizontal driving shaft 27, at the opposite end of the frame and the pulley 26, of a belt tightener comprising a bracket 13, mounted between the drive and driven shafts, a movable yoke 12, carried by the bracket, and a tightening pulley parallel with the pulleys 24, 25, a screw rod extending through a bearing at the rear of the frame and provided with inner and outer jam nuts, a rod 14, connected to the yoke 12, and a spring 16, connecting the rods 14, 17, and the belt 28, passed around the pulleys 25, 26 and crossed, the loop formed by the crossing of the belt inclosing the pulleys 10 and 24, substantially as set forth. 2nd. The combination, with the bracket 13, of the vertical yoke 12, pivoted at its inner end to the bracket and provided at its outer end with boxes 11, 11, an adjusting screw 29, projecting up into the lower bearing, the tightening pulley, the axis of which is stepped on the screw 29, the threaded rod 17, having jam nuts 18, 19, spring 16, and the rod 14, connecting the spring and the said yoke, substantially as set forth.

No. 41,773. Derailing Device. (*Aiguille de croisement.*)

Joseph Y. Porter, Cleveland, Ohio, U.S.A., 28th January, 1893; 6 years.

Claim.—1st. In a switch, a supporting box provided with detachable covers or tread plates, a switch tongue adapted to be moved laterally in a longitudinal opening between two of said covers, and platform supports at either end of the box for adjacent rails and guard rails, whereby an opening is left from point to heel of the tongue, substantially as described. 2nd. In switch mechanism, the

combination of a box portion provided with detachable covers, separated to form a central longitudinal channel from end to end of the box, a switch tongue adapted to move with equal lateral motion from point to heel from edge to edge of said plates, and drainage opening or openings in said box, substantially as described. 3rd. In switch mechanism, a main box provided with drainage opening, covers upon the box separated from end to end by a central longitudinal channel, and a switch tongue and plate having free lateral movement in said channel, in combination with adjacent rails and guard rails separated by a channel in continuation of the channel between said covers whereby the edge of one of the covers becomes a tread rail on the switch track when the switch is set to take the curve, substantially as described. 4th. In switch mechanism, the combination of a main box A provided with wings A^1 , detachable covers on said wings and box, the box covers being separated by a central opening passing from end to end thereof, and a laterally moving switch tongue in said opening provided with an integral corrugated plate, substantially as described. In switch mechanism, the combination of a main box provided with wings and drainage opening, a switch tongue pivotally supported in said box, detachable covers for said box and wings, the box covers being separated by a central channel in which the tongue is adapted to have lateral movement, substantially as described. 6th. In switch mechanism, the combination with a main box provided with a drainage opening and platforms at either end of covers upon the box separated from one another by a central channel from end to end, and a detachable tongue pivoted in said box and adapted to move laterally in said channel, substantially as described. 7th. In switch mechanism, the combination of a main box provided with detachable covers separated by a central longitudinal opening from end to end, a switch tongue adapted to move laterally in said channel, platforms upon the extremities of the box in combination with tread and guard rails secured to said platform separated by a channel in line with the said channel between the box covers, the said rails and guard rails being curved at the points of approach to and egress from the switch tongue, substantially as described. 8th. In switch mechanism, the combination with a laterally moving switch and guard rail thereto of adjacent rails and guard rails curved at the points of access to and egress from the tongue, substantially as and for the purpose described. 9th. In switch mechanism, the combination with a switch box provided with a drainage opening and wings and laterally moving tongue, of adjacent rails and guard rails curved at the points of access to and egress from the tongue, substantially as and for the purpose set forth. 10th. In switch mechanism, the combination of a main box combined cover plates guard rails and tread rails, separated by a central opening or channel, and a laterally moving detachable tongue mounted in said channel, substantially as described, and for the purpose set forth. 11th. In switch mechanism, the combination of a main box A, provided with wings and detachable covers, the box covers being separated by a central opening throughout their length, a detachable tongue pivoted in said box and having lateral movement in said channel with adjacent rails and guard rails mounted upon platforms on said box, and separated by a channel in line with the channel between said covers, whereby the edges of the covers may be utilized as either guard or tread rails, substantially as described. 12th. In a derailing device or switch, the combination of a laterally moving tongue, mounted upon a suitable box, and mechanism for moving the tongue, consisting of rods passing through said box, a cranked rod connecting therewith at right angles thereto provided with a handle, and enclosing tubing, substantially as described.

No. 41,774. Household Memorandum. (*Agendas.*)

Edmund Herbert Striker and James McBurney, both of Buffalo, New York, U.S.A., 30th January, 1893; 6 years.

Claim.—A housekeeper's memorandum, consisting of a base or body portion having a series of articles usually wanted designated upon its face, and a series of independently movable index hands mounted on a pin, upon which they turn a stationary washer mounted on the same pin between each pair of index hands, the pin being rigidly secured to the body portion, so that any of the index hands can be moved to indicate the article wanted without moving the other hands, substantially as described.

No. 41,775. Harvester for Grain. (*Moissonneuse.*)

Maurice Kane, Chicago, Illinois, U.S.A., 30th January, 1893; 6 years.

Claim.—1st. In a grain harvester, a platform conveyer, the drive wheel, and the binder deck located at the stubbleward side of the drive wheel, combined with an elevator composed of two inclined endless carriers, one overhanging the other, the lower of said inclined carriers having its discharge side at the grainward side of the vertical plane of the drive wheel, and a stationary deck or bridge extending over the wheel from the discharge side of said lower carrier to the receiving side of the binder deck, the upper of said elevator endless carriers overhanging said bridge or deck, substantially as set forth. 2nd. In a grain harvester, the platform conveyer, the drive wheel and binder deck located at the stubbleward side of the drive wheel, combined with an elevator composed of two inclined endless carriers, one overhanging the other, the lower of such inclined carrier having its receiving side at the discharge side of the platform conveyor, and its discharge side at

the grainward side of the vertical plane of the drive wheel, and a stationary bridge or deck extending over the drive wheel from the discharge side of the lower carrier to the receiving side of the binder deck, the upper of said endless elevator carriers having its receiving side overhanging the platform conveyer, and its delivery side overhanging said bridge or deck above the drive wheel, substantially as set forth.

No. 41,776. Manger. (Mangeoire.) 41,776
William J. A. Vender, Kinde, Michigan, U.S.A., 30th January, 1893; 6 years.

Claim.—1st. The combination, with a manger, hinged at its lower forward edge to swing outwardly, and provided in its front wall at the hinged edge with a slot, of a closure for the slot, and a removable grate resting on the bottom of the manger, whereby when the closure is moved from over the slot and the manger swung outwardly, the refuse in the bottom of the manger will be discharged, substantially as set forth. 2nd. A manger provided with a transverse partition dividing it into two compartments I, J, a slot L, being formed in the forward wall of the compartment I, a slide N, therefore, a removable grating in the bottom of the compartment I, and a grain receptacle within the compartment J, having a slot Q, to discharge its contents into said compartment, and a lid for said receptacle, substantially as set forth. 3rd. The combination, with a stall, having an opening through its front wall, and a tethering cross bar F, near its front wall in line with the opening, of the manger A, hinged at its outer lower edge to the bottom wall of the opening, to swing outwardly and inwardly therethrough and rest against the cross bar, a partition dividing the manger into two compartments, a removable grating on the bottom of one compartment, a slot in the front wall of said compartment and provided with a slide, the second compartment being provided with a covered receptacle having a slot to discharge its contents therein, substantially as set forth.

No. 41,777. Stair Beveling Instrument. 41,777
(*Machine à chanfreiner les escaliers.*)

John A. Caldwell, Vancouver, British Columbia, Canada, 30th January, 1893; 6 years.

Claim.—1st. A stair beveling instrument, provided with blades having slotted transverse guideways, and sleeves engaging the compass legs, and held transversely adjustable in the said guideways, substantially as shown and described. 2nd. A stair beveling instrument, comprising jointed compass legs, a blade held adjustable on each compass leg, each blade being provided with a slotted transverse guideway, and a hub held adjustable in the said guideway and engaging the respective compass leg, substantially as shown and described. 3rd. In a stair beveling instrument, the combination, with jointed compass legs, of a sleeve formed with an elongated aperture for the passage of the respective compass leg, a set screw for fastening the sleeve and compass leg together, and a blade having a transverse slotted guideway engaged by the said sleeve, substantially as shown and described. 4th. In a stair beveling instrument, the combination, with jointed compass legs, of a sleeve formed with an elongated aperture for the passage of the respective compass leg, a set screw for fastening the sleeve and compass leg together, a blade having a transverse slotted guideway engaged by the said sleeve, and a screw for fastening the said sleeve to the said blade, substantially as shown and described.

No. 41,778. Air Compressor. 41,778
(*Machine de compression pour l'air.*)

Thomas Francis Farrell, Niagara Falls, New York, U.S.A., 30th January, 1893; 6 years.

Claim.—1st. The combination, with a receiver and a cylinder K, having a housing *b*, of a valve chamber F, a pipe Y, leading from the receiver to the valve chamber, a pipe *a*, leading from the valve chamber to the housing *b*, a valve Z, located in the valve chamber F, and a piston located in the housing of said cylinder, said cylinder being provided with a channel having mouths *h*, leading into the cylinder at opposite sides of the piston, and a stopper or valve *d*, for said pipe *a*, substantially as described. 2nd. The combination, with a

receiver, of a cylinder made to communicate with said receiver, said cylinder being provided with a piston I, and with a channel having mouths *h*, leading into the cylinder at opposite sides of the piston, a stopper or valve *d*, for said channel, an actuating piston B, a cylinder A, for said actuating piston, stoppers or valves *l*, for intercepting the steam supply to said cylinder, a supply pipe Y, and pipes or channels *a*, *i*, for conveying pressure from the receiver to the valves *d*, *l*, respectively for actuating the latter, said supply pipe being provided with a valve, and a spring or weight for holding said valve closed until a certain pressure is attained, and said pipe Y, being made to communicate with the pipes or channels *a*, *i*, leading, respectively, to the valves *d*, *l*, and a valve Z, actuated by the pressure in the pipe Y, for opening the pipes or channels *a*, *i*, substantially as described.

No. 41,779. Trousler Supporter. 41,779
(*Support pour pantalons.*)

Clodomir Lafontaine, Montreal, Quebec, Canada, 30th January, 1893; 6 years.

Claim.—1st. A supporter for trousers detachably secured to the back part of a boot or shoe, and adapted to remain fixedly in position and to prevent a rigid open stop or pocket for the trouser end while the free movement of the latter is allowed, as set forth. 2nd. A trouser supporter formed of a flat strip of metal bent at one end to form a spring clip, and at the opposite end to form a pocket or stop to support the trouser end, such spring clip being slipped over an eye set in the boot or shoe of the wearer, as set forth. 3rd. In a trouser supporter, the combination of eye *a*, carried by a boot or shoe, supporter C, formed of a flat strip of metal and having spring clip *e*, at one end, and an open rigid hook portion *d*, at its opposite end to freely support the trouser end, as set forth.

No. 41,780. Fastener for Jars. (Attache pour jarres.) 41,780
Robert J. Patterson, Indiana, U.S.A., 30th January, 1893; 6 years.

Claim.—1st. In a jar fastener, the combination, with a metallic band adapted to be sprung about the neck of a jar and consisting of an open loop slightly exceeding a semicircle, the opposite ends of which are bent upwardly and rearwardly and bent to form journal eyes or loops, of a locking bail consisting of a wire bent into substantially a semicircle and having its ends bent to form cams, the extreme ends thereof being bent outward in opposite directions to form journals, which are supported in the eyes or loops formed on the clamping band, substantially as described. 2nd. In a jar fastener, the combination, with an open spring loop E, slightly exceeding a semicircle, adapted to be sprung around the neck of a jar, and having its ends bent upwardly and rearwardly, forming parallel arms F, provided on their extreme ends with journal eyes or loops *f*, located at points opposite the centre of the jar, of a substantially semicircular wire locking bail G, having its ends bent to form cams *g*, and its extreme ends bent outward at right angles to the cams and in opposite directions to form journals *g'*, which are supported in the journal eyes *f*, substantially as shown and described.

No. 41,781. Pipe Wrench. (Clé a tuyaux.) 41,781
Oramel C. Stanley, New York, State of New York, U.S.A., and
Donough Charles Watters, Ottawa, Ontario, Canada, 30th January, 1893; 6 years.

Claim.—1st. In a pipe wrench, the combination, with the serrated shank A', having a fixed jaw A, of the socket or sleeve B, subdivided by a partition B', one subdivision receiving said shank slidingly, and the other subdivision a serrated pawl or trig D, pivoted in the lower portion and a serrated jaw C, having a stem C', pivoted in the upper portion, and a spiral spring E, passing through an aperture in said partition and intervening said stem and shank, as set forth, for the purpose described. 2nd. In a pipe wrench, the combination, of the divided socket or sleeve B, the fixed jaw A, having a serrated shank A', sliding in a divided portion of said socket, a pawl or trig D, and a jaw C, having a stem C', pivoted in the other subdivisional portion of said socket, and a spring E, intervening said stem and shank, whereby the stem is forced outwardly to incline the jaw, and prevent self motion of the socket, as set forth. 3rd. A pipe wrench, comprising a fixed serrated jaw A, having a serrated shank A', a socket B, sleeved on said shank in a subdivision thereof, a pawl or trig D, and a movable jaw C, having a stem C', pivoted in said socket or sleeves B, and a spring E, expanding against said stem and shank, as set forth, for the purpose described.

CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO THE FOLLOWING PATENTS.

2848. HOWARD M. ASHLEY, 2nd five years of No. 28,296, from the 3rd day of January, 1893. Improvements in the manufacture of Bottles and other Hollow Ware in Glass, and in the machinery connected therewith, 3rd January, 1893.
2849. CALVIN A. CAMPBELL, 2nd five years of No. 28,285, from the 3rd day of January, 1893. Improvements in Binding Cases, 3rd January, 1893.
2850. THE PHOSPHOR BRONZE COMPANY (assignee), 3rd five years of No. 16,293, from the 15th day of February, 1893. Improvements in the manufacture of Silicious Copper and Silicious Bronze, particularly suited for making Electric Conductive Wire, 3rd January, 1893.
2851. SAMUEL MAY, 2nd five years of 24,289, from the 3rd day of January, 1893. Improvements in Radial Sawing Machines, 3rd January, 1893.
2852. GEORGE A. BAIN, 2nd five years of No. 28,354, from the 13th day of January, 1893. Improvement in Bob Sleighs, 5th January, 1893.
2853. WILLIAM S. SHARPNECK, 2nd five years of No. 28,382, from the 19th day of January, 1893. Improvements on Antifriction Boxes, 7th January, 1893.
2854. WILLIAM CUMMER and HERBERT CUMMER, 2nd five years of No. 28,385, from the 19th day of January, 1893. Ladder, 7th January, 1893.
2855. THE J. T. CASE ENGINE COMPANY (assignees), 2nd five years of No. 28,359, from the 14th day January, 1893. Improvements in Steam or Water Motors, 9th January, 1893.
2856. JOSEPH W. FROST, 2nd five years of No. 28,323, from the 10th day January, 1893. Improvements in Annunciator and Alarm Signals, 9th January, 1893.
2857. THE EDISON ELECTRIC LIGHT COMPANY (assignees), 3rd five years of No. 16,095, from the 10th day of January, 1893. Improvements on Sockets or Holders for Electric Lamps, 9th January, 1893.
2858. ROBERT TORRANCE, 2nd five years of No. 28,410, from 21st day of January, 1893. Improvements in Single Plate Carriage Springs, 13th January, 1893.
2859. HENRY FRICKER, 2nd five years of No. 28,376, from the 18th day of January, 1893. Improved Portable Cooking Apparatus, 16th January, 1893.
2860. THE FOX SOLID PRESSED STEEL COMPANY (assignee), 2nd five years of No. 28,423, from the 1st day of February, 1893. Improvements in the manufacture of Frame Plates for Rolling Stock, 16th January, 1893.
2861. THE FOX SOLID PRESSED STEEL COMPANY, 2nd five years of No. 28,446, from the 2nd day of February, 1893. Improvements on Machinery or Apparatus for the manufacture of Frame Plates for Rolling Stock, 16th January, 1893.
2862. CHARLES KELLNER, 2nd five years of No. 28,463, from the 4th day of February, 1893. Process for obtaining Cellulose or Wood Fibre, 16th January, 1893.
2863. JOSEPH A. JEFFREY, 2nd five years of No. 28,449, from the 2nd day of February, 1893. Improvements on Drive Chains, 16th January, 1893.
2864. THE ONTARIO FIRE PROTECTION COMPANY (assignee), 3rd five years of No. 16,179, from the 23rd day of January, 1893. Improvements on Fire Extinguishers, 17th January, 1893.
2865. SAMUEL W. BARR, 2nd and 3rd five years of No. 28,522, from the 11th day of February, 1893. Improvements in Cash Carrier Apparatus, 18th January, 1893.
2866. JAMES E. BARNEY, 2nd five years of No. 28,467, from the 4th day of February, 1893. Improvement in Compound Ventilator Wheels or Fans, 18th January, 1893.
2867. ROBERT J. QUIGLEY, 2nd five years of No. 28,466, from the 4th day of February, 1893. Improvement in Watch Cases, 20th January, 1893.
2868. HENRY THORN, 2nd five years of No. 28,481, from the 6th day of February, 1893. Improvements in Adjustable Buttons for Pants, 20th January, 1893.
2869. THE EDISON ELECTRIC LIGHT COMPANY (assignee), 3rd five years of No. 16,178, from the 23rd day of January, 1893. Improvements on Connections for Electric Circuits, 20th January, 1893.
2870. THOMAS CLARK, 2nd five years of No. 28,560, from the 24th day of February 1893. Improvements on Washing Machines, 23rd January, 1893.
2871. MILES L. CLINTON, 2nd five years of No. 28,440, from the 2nd day of February, 1893. Improvements on Steam Boilers, 23rd January, 1893.
2872. WILLIAM RUTTAN, 2nd five years of No. 28,464, from the 4th day of February, 1893. Improvements on Machines for Sharpening Saws, 23rd January, 1893.
2873. CHARLES D. ARIA, 2nd five years of No. 28,738, from the 21st day of March, 1893. Improvements on or applicable to Moderator and Carcel Lamps, to render them capable of burning mineral oils, 26th January, 1893.
2874. WARDEN KING, 2nd and 3rd five years of No. 28,870, from the 12th day of April, 1893. Improvements in Water Heaters, 26th January, 1893.
2875. JOSEPH BARDSLEY, 2nd five years of No. 28,438, from the 2nd day of February, 1893. Improvements in Door Knobs, 26th January, 1893.
2876. A. B. JARDINE & CO., 2nd and 3rd five years of No. 30,575, from the 16th day of January, 1894. Improvements in Tube Expanders, 26th January, 1893.
2877. ANDREW B. JARDINE, 3rd five years of No. 16,623, from the 9th day of April, 1893. Improvements on Tire Upsetting Machines, 26th January, 1893.
2878. O. AND C. COMPANY, 2nd five years of No. 28,658, from the 9th day of March, 1893. Improvements in Sliding Doors for Freight Cars, etc., 27th January, 1893.
2879. ERNEST SCHULTZ, 2nd five years of No. 28,422, from the 1st day of February, 1893. Improvements in Tubular Lanterns, 27th January, 1893.
2880. THE GRANT ANTIFRICTION BALL COMPANY, (assignees) 3rd five years of No. 26,460, from the 16th day of April, 1897. Improvements in Machinery for Grinding Spherical Balls, 27th January, 1893.
2881. ANDREW MERCER, 2nd five years of No. 28,421, from the 1st day of February, 1893. Improvements in Sectional Steam Boilers, 31st January, 1893.
2882. JOHN B. MILLER, 2nd five years of No. 28,598, from the 10th day of February, 1893. Improvements in Milk Coolers and Aerators, 31st January, 1893.
2883. THE EASTERN TOWNSHIPS CORSET COMPANY, (assignees) 2nd five years of No. 28,506, from the 10th day of February, 1893. Improvements on Corsets, 31st January, 1893.
2884. THE EASTERN TOWNSHIPS CORSET COMPANY, (assignees) 2nd five years of No. 28,511, from the 10th day of February, 1893. Improvements on Corsets, 31st January, 1893.
2885. THE EASTERN TOWNSHIPS CORSET COMPANY, (assignees) 2nd five years of No. 28,512, from the 11th day of February, 1893. Improvements on Corsets, 31st January, 1893.
2886. ANTHONY W. BURKE, 2nd five years of No. 30,179, from the 13th day of November, 1893. Improvements in Washing Machines, 31st January, 1893.

TRADE MARKS

Registered during the month of January, 1892, at the Department of Agriculture—
Copyright and Trade Mark Branch.

4516. THE NORTH WEST TRADING COMPANY OF CANADA, LD., of Calgary, Alberta, N.W.T. Dressed and Canned Meats, Bacon, Ham, Sausages, and the various articles produced in a Butcher's and Pork Packer's business, also Dairy Products, 4th January, 1893.
4517. ADAM B. MITCHELL, of Toronto, Ont. Collars and Cuffs, 5th January, 1893.
4518. WILLIAM MIDDLETON, of Namaka, Alberta, N.W.T. Ceylon Teas, 5th January, 1893.
4519. SMITH, FISCHER & CO., of Montreal, Que. Cigars, 7th January, 1893.
4520. THE HAWKER MEDICINE COMPANY, LD, of Rothesay, King's Co., N.B. General Trade Mark, 10th January, 1893.
4521. } MICHAEL DWYER, of Halifax, N.S. Trading as JOHN TOBIN & CO.
4522. } Tea, 11th January, 1893.
4523. }
4524. MARY AUGUSTA HAWLEY, of Dixon, Illinois, U.S.A. Insect Powder, 14th January, 1893.
4525. PAUL EMIL TARBEL, of Boston, Massachusetts, U.S.A. Chemical Fuel, 18th January, 1893.
4526. DAVID URQUHART, of Oshawa, Ont. Medicines, 18th January, 1893.
4527. ANDREW USHER & CO., of Edinburgh, Scotland. Whiskey, 18th January, 1893.
4528. THE TURNER SHAKER MEDICINE COMPANY, of St. Louis, Mo., and Union Village, Ohio, U.S.A. Proprietary Medicines, 19th January, 1893.
4529. EUGÈNE W. VILLENEUVE, de Montréal, Qué. Cigares, 21 janvier, 1893.
4530. CHARLES STRANGMAN and PERCY SCOTT, of Montreal, Que. Beer, Ale and Porter, 21st January, 1893.
4531. BENNO F. EYTZINGER, of Nuremburg, Germany. Trading as J. G. EYTZINGER. Gold, Silver, Aluminum and Metal Leaves, 23rd January, 1893.
4532. J. B. KING & CO., of New York, N.Y., U.S.A. Plaster of Paris, 24th January, 1893.
4533. ELIJAH ADAMS MORSE, of Canton, Massachusetts, U.S.A. Stove Polish, 24th January, 1893.
4534. ALEXANDER RAMSEY, SOPHIA MARTHA JOLY STARK AND ROBERT STARK, of Hamilton, Ont. THE R. STARK MEDICINE COMPANY. Proprietary Medicines, 27th January, 1893.

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Copyright and Trade Mark Branch.

6759. THE SHEKINAH IN THE SOUL. By the Rev. J. D. Dinnick, Toronto, Ont., 3rd January, 1893.
6760. SCIENTIFIC EYE TESTS AND METHODS OF ASCERTAINING DEFECTS OF VISION. Frederick W. Notte, Victoria, B.C., 3rd January, 1893.
6761. CURRENT SUIT CHART. Wm. B. Bentley, Toronto, Ont., 5th January, 1893.
6762. THE BELL TELEPHONE COMPANY OF CANADA, LIMITED, OTTAWA EXCHANGE, SUBSCRIBERS' DIRECTORY, JANUARY, 1893. The Bell Telephone Company of Canada, Limited, Montreal, Que., 7th January, 1893.
6763. THE FIFTH GENERAL COUNCIL OF THE PRESBYTERIAN ALLIANCE. Convened at Toronto, September, 1892. (Photographic group.) Josiah Bruce, Toronto, Ont., 7th January, 1893.
6764. COMBINATION PHOTOGRAPH OF THE "SANTA MARIA" (Columbus' Ship) AND THE "BEAVER," the Pioneer Steamer on the Pacific. Walter Henry Brown, Vancouver, B.C., 12th January, 1893.
6765. INSURANCE PLAN OF THE CITY OF MONTREAL, Volume II. Charles Edward Goad, Montreal, Que., 13th January, 1893.
6766. SYLLABUS OF ELEMENTARY MECHANICS by James Loudon, M.A., with Suitable Exercises and Examples. Prepared by C. A. Chant, B.A. Rowsell & Hutchison, Toronto, Ont., 14th January, 1893.
6767. SWEET ETHEL WALTZ. By F. Boscovitz. The Anglo-Canadian Music Publishers' Association, Limited, London, England, 17th January, 1893.
6768. FOND MEMORIES VALSE. By H. Keighly McCollum. H. Keighly & T. McCollum, Toronto, Ont., 20th January, 1893.
6769. THE BELL TELEPHONE COMPANY OF CANADA, LIMITED, WESTERN EXCHANGES, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, DECEMBER, 1892. The Bell Telephone Company of Canada, Limited, Montreal, Que., 20th January, 1893.
6770. THE TORONTO DIRECTORY, 1893. Might's Directory Company, Toronto, Ont., 21st January, 1893.
6771. MAIN STREET VIEWS, WINNIPEG, MANITOBA, 1892 (book). Clarence E. Steele, Winnipeg, Man., 21st January, 1893.
6772. THE LADY OF THE LEA. Song. Words by W. H. Bellamy. Music by Henry Smart. E. Ascherberg & Co., London, England, 23rd January, 1893.
6773. ALL THAT MY HEART WOULD SAY. Song. Words by A. Horspool. Music by M. Piccolomini. I. Suckling & Sons, Toronto, Ont., 23rd January, 1893.
6774. LA FILEUSE. Etude pour piano. Par Joachim Raff. Op. 157, No. 2. Patey & Willis, London, England, 23rd January, 1893.
6775. MISSA PRO DEFUNCTIS quam ad quatuor voces pares. Organo ad libitum comitante. (Messe des Morts.) Cleophas Bourduas, Prêtre, Montréal, Qué., 25 janvier, 1893.
6776. PROCES MERCIER, 1892. Les causes qui l'ont provoqué. Quelques faits pour l'histoire. Par J. Israel Tarte. Louis Joseph Tarte & Eugène Tarte, Montréal, Qué., 25 janvier, 1893.
6777. SECRET CONFESSION TO THE PRIEST EXPOSED. By Margaret L. Shepherd, Brockville, Ont., 26th January, 1893.
6778. THREE YEARS UNDER THE CANADIAN FLAG AS A CAVALRY SOLDIER. James Gibson Slater, Toronto, Ont., 26th January, 1893.
6779. BELL TELEPHONE COMPANY OF CANADA, LIMITED, HAMILTON AND DUNDAS EXCHANGES, SUBSCRIBERS' DIRECTORY, ONTARIO DEPARTMENT, JANUARY, 1893. The Bell Telephone Company of Canada, Limited, Montreal, Que., 26th January, 1893.

6780. THIS CANADA OF OURS AND OTHER POEMS. By J. D. Edgar, M.P., Toronto, Ont., 27th January, 1893.
6781. THE WESTERN WORLD. Volume 4, Number 35, January, 1893. (Magazine.) Acton Burrows, Winnipeg, Man., 27th January, 1893.
6782. THE FLOWER SONG. (Le Parlate d'Amor.) From the Opera "Faust." English Version by H. F. Chorley. Music by Gounod. Chappell & Co., London, England, 28th January, 1893.
6783. STUDENTS' DANCE. No. 9. Golden Moments. Arranged by Frederic Forest. I. Suckling & Sons, Toronto, Ont., 28th January, 1893.
6784. REPORTS OF CASES DECIDED IN THE COURT OF APPEAL FOR ONTARIO during parts of the years 1891 and 1892. The Law Society of Upper Canada, Toronto, Ont., 30th January, 1893.
6785. WEEP NOT MY MOTHER—I DREAMT I WAS IN HEAVEN. From the Oratorio of Naaman, by M. Costa. I. Suckling & Sons, Toronto, Ont., 30th January, 1893.
6786. WITH SHEATHED SWORDS. Damascus Triumphal March. Chorus and Solo. From the Oratorio of Naaman, by M. Costa. I. Suckling & Sons, Toronto, Ont., 30th January, 1893.

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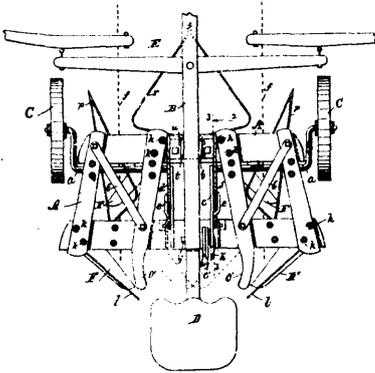
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

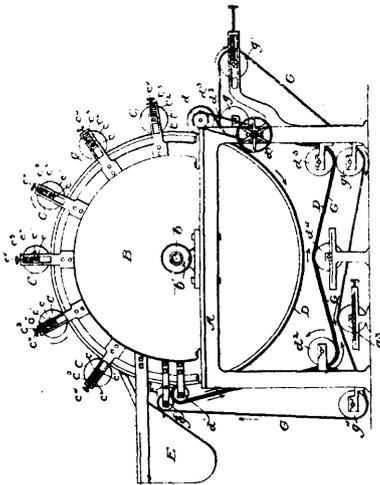
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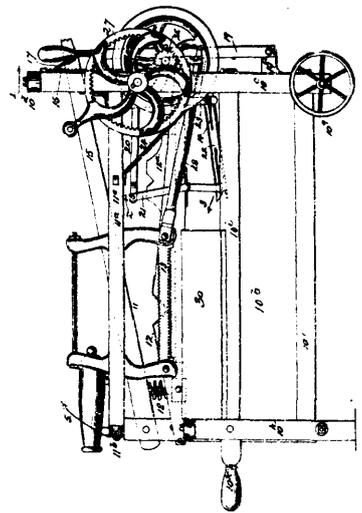
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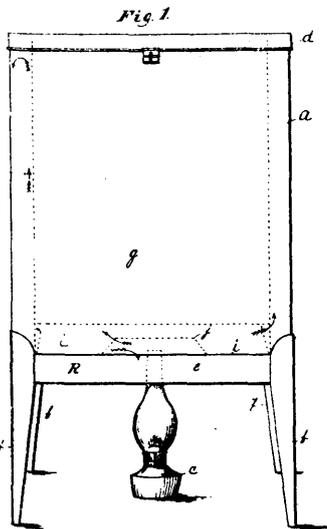
41442 Carver's Bean Harvester and Weed Cutter.



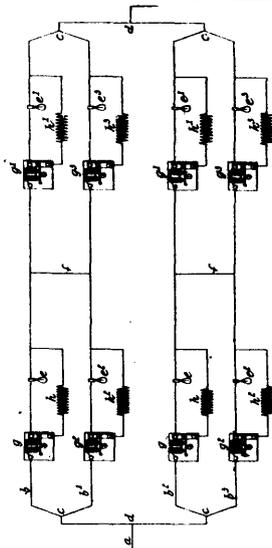
41443 Wendell's Ironing Machine.



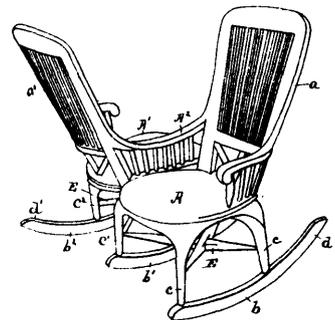
41444 Harrell's Sawing Machine.



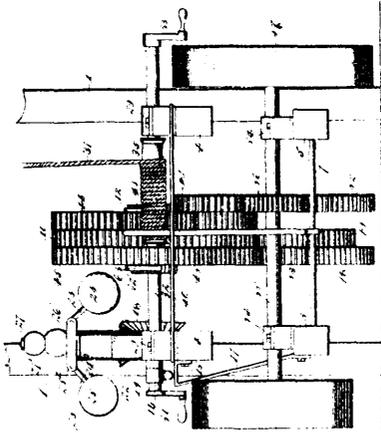
41446 Atsatt's Device for Roasting Pea Nuts.



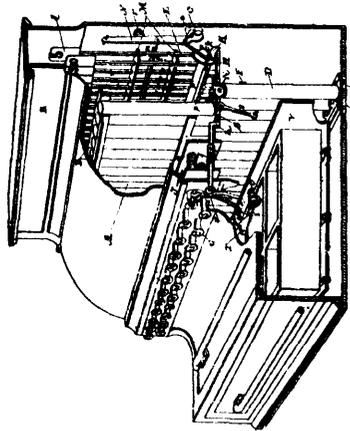
41447 Parfitt's Method of electric lighting in Series.



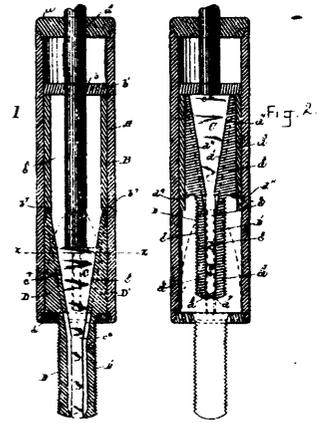
41448 Pooley's Rocking Chair.



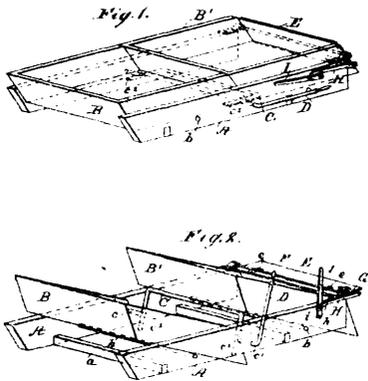
41449 Wheat's Motor.



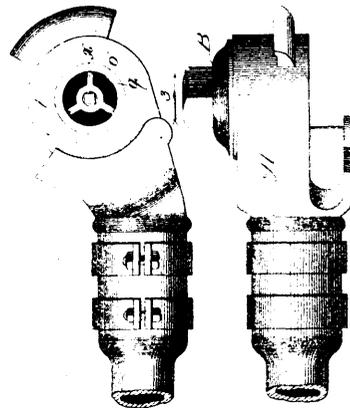
41450 Sharpe's Cash Indicator.



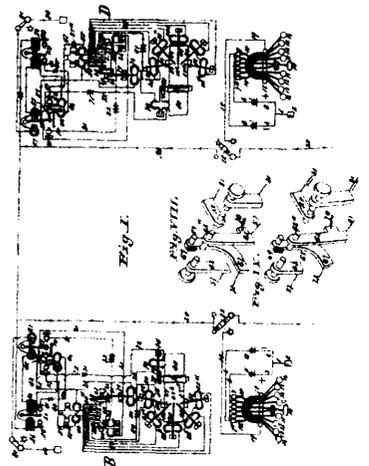
41451 Gray's Press for moulding Glass Insulators.



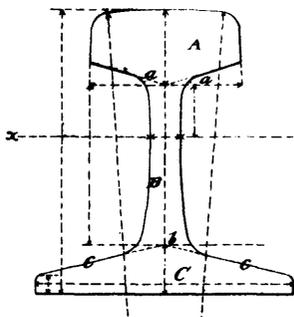
41452 Forsgard's Dumping Wagon.



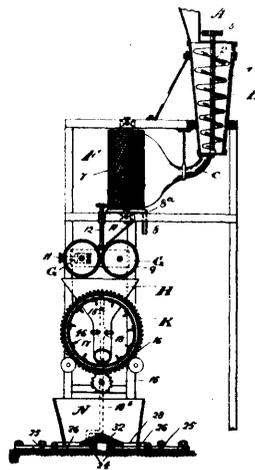
41453 Beery's Coupler Head for Air Brake Hose.



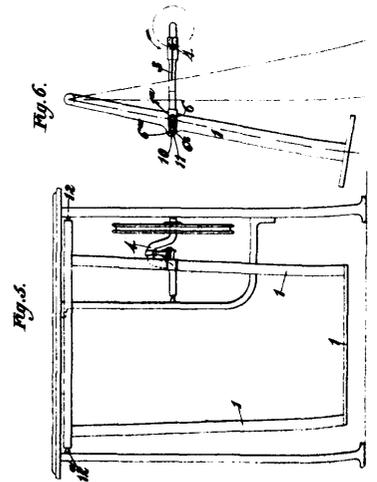
41454 Parker and Summer's Telegraphic Apparatus.



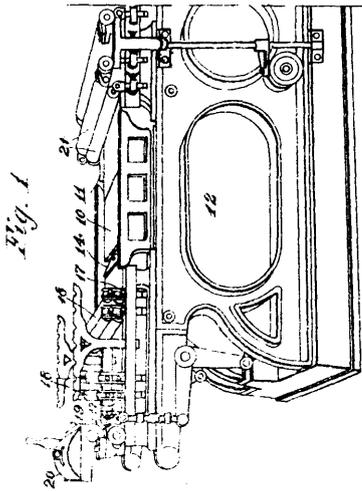
41455 Dudley's Railway Rail.



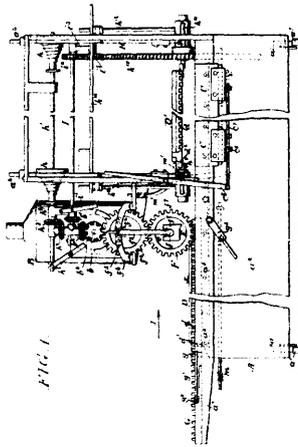
41456 Dickson's Machine for reducing Crude Peat to Fuel.



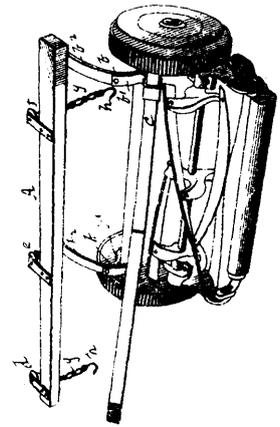
41457 Sampson's Treadle Apparatus for driving machines.



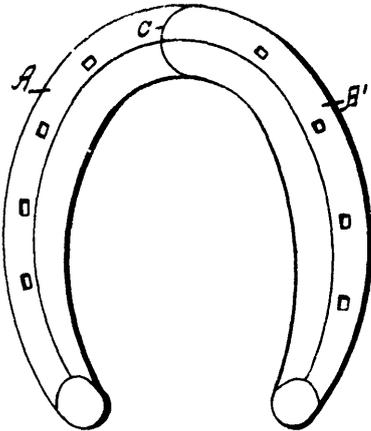
41458 Meier and Weiss' Printing Press.



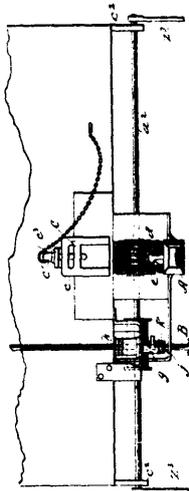
41459 Bonta's Apparatus for Rolling Plate or Sheet Glass.



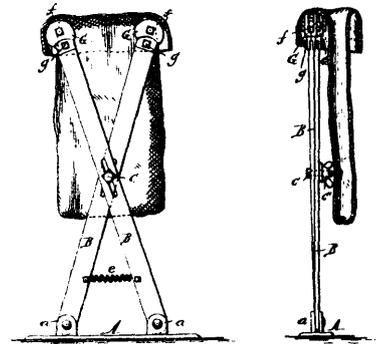
41460 Rowlett's Horse attaching Device for Lawn Mowers.



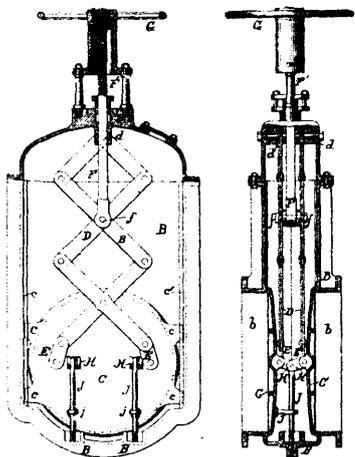
41461 Doran's Horse Shoe.



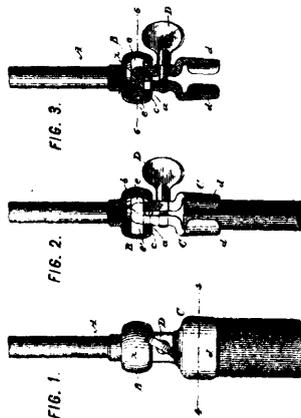
41462 Harlin's Car Coupler.



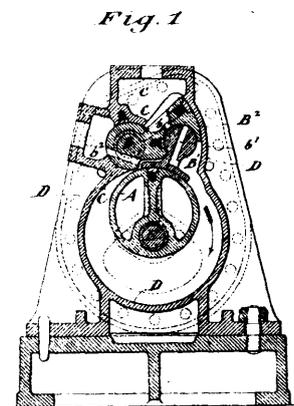
41463 Barbeau's Device for Turning Bags.



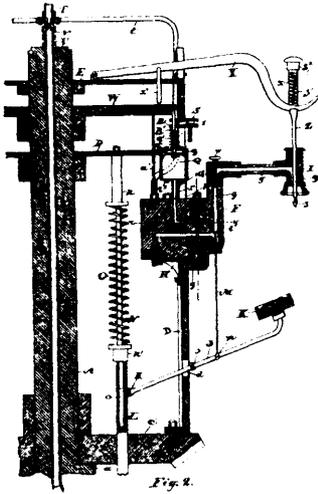
41464 Ogden's Valve Operating Mechanism.



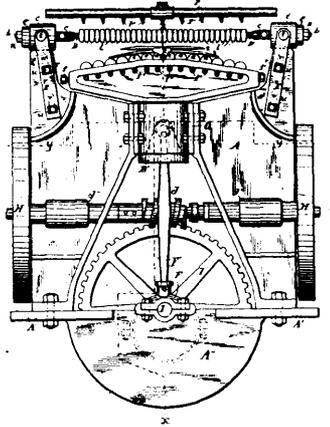
41465 Wood's Carbon Holder for Arc Lamps.



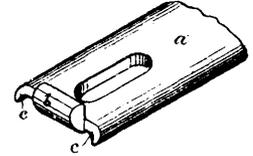
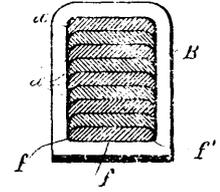
41466 Brown's Rotary Engine Pump and Blower.



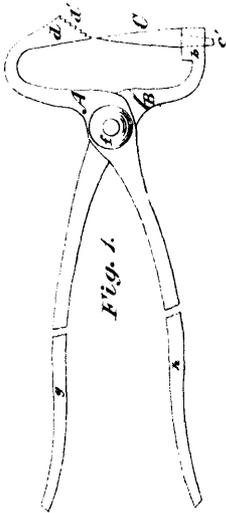
41467 Chavasse's Power Filling Machine.



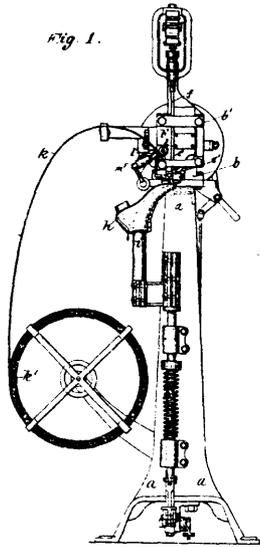
41468 Cliff's Spring Setting Machine.



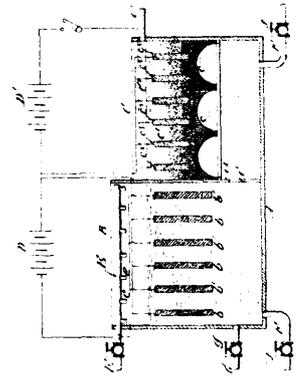
41469 Cliff's Semi-Elliptic Spring.



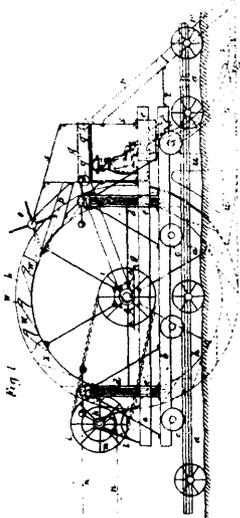
41470 Michener's Hoof Parer and Nail Clutcher.



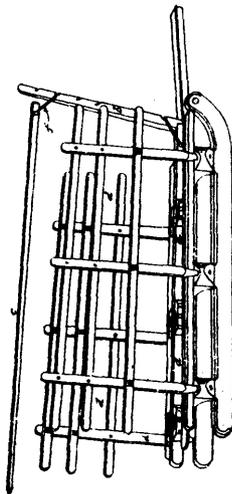
41471 Gare's Sprigging, Nailing, Riveting and Pegging Machine.



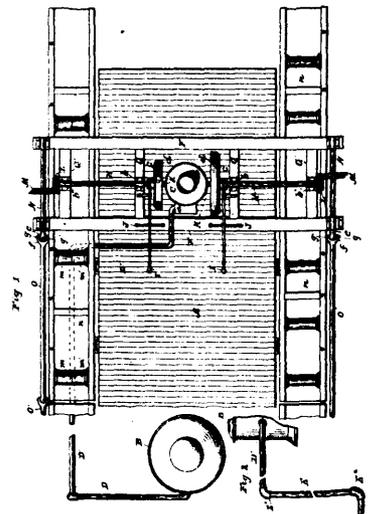
41472 Collins' Process for Purifying Brine



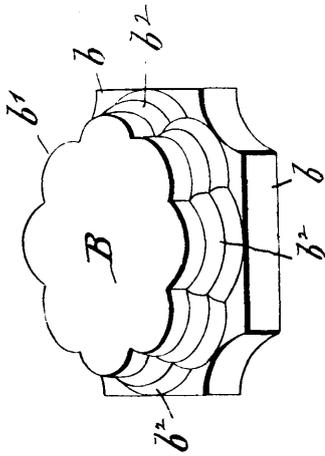
41473 Hanneborg's Machine for Making or Laying Drains.



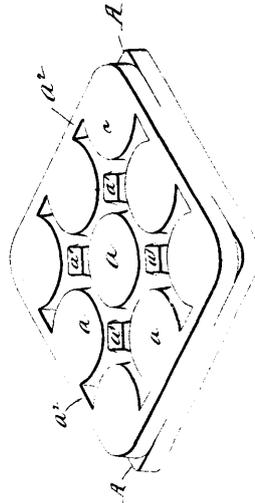
41474 Downey's Sled Rack.



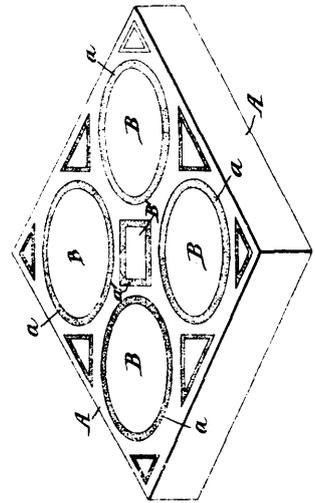
41475 Roberts' Railroad Track-laying Machine.



41476 Jacobs' Illuminating Tile.

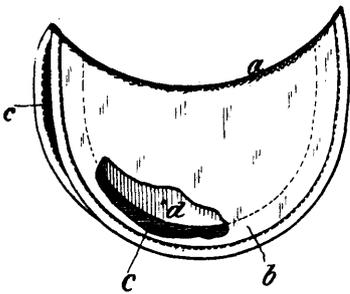


41477 Jacobs' Illuminating Tile.

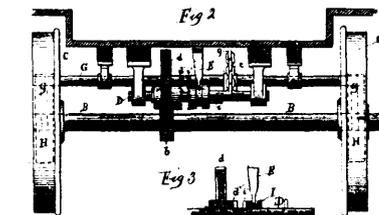
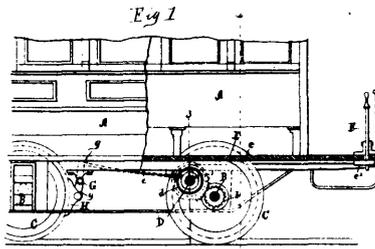


41478 Jacobs' Illuminating Tile.

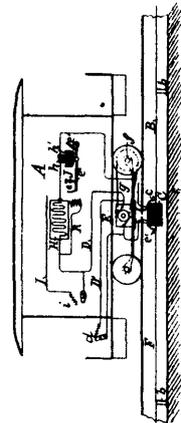
Fig. 1



41479 Pray's Dress Shield.



41481 Wortmann's Car Brake.



41482 Dewey's Electric Heating Apparatus for Electric Railway System.

Fig. 1

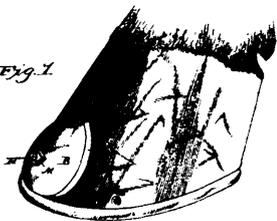
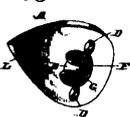


Fig. 2.



Fig. 3.



41483 Van Etten's Toe Weight.

Fig. 1

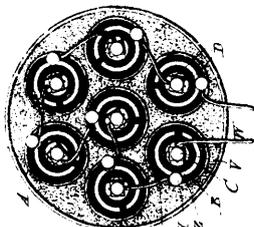
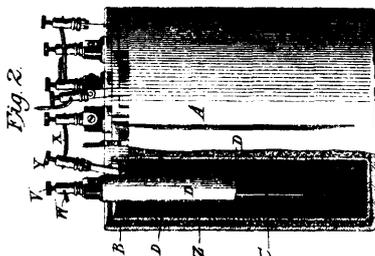
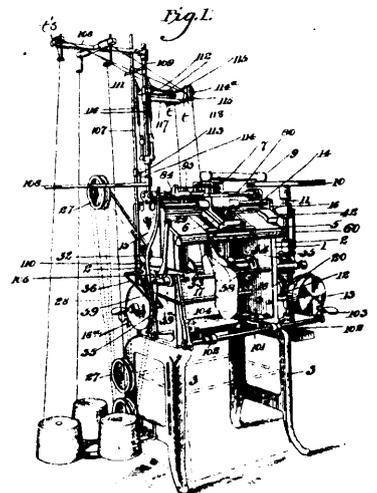


Fig. 2



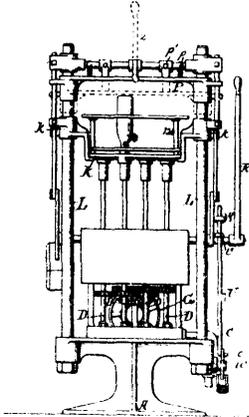
41484 Lamb's Electric Battery.

Fig. 1

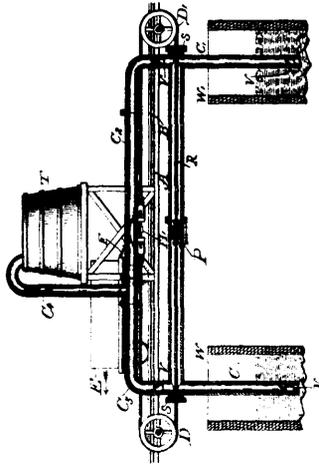


41485 Bendor's Knitting Machine.

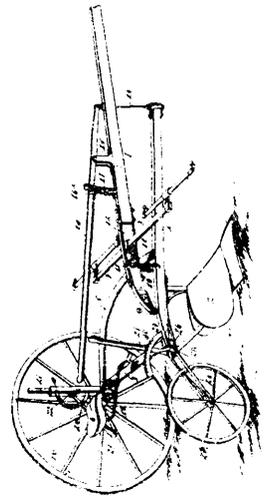
FIG. 1



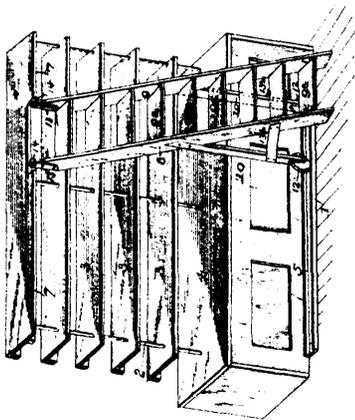
41486 Eick's Bottle Cleaner and Washer.



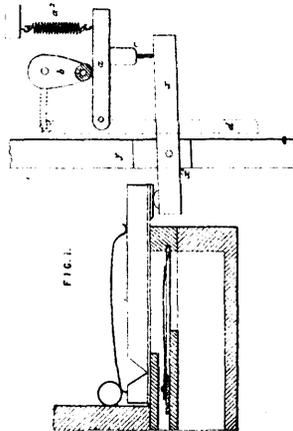
41487 Hodgson's Pump.



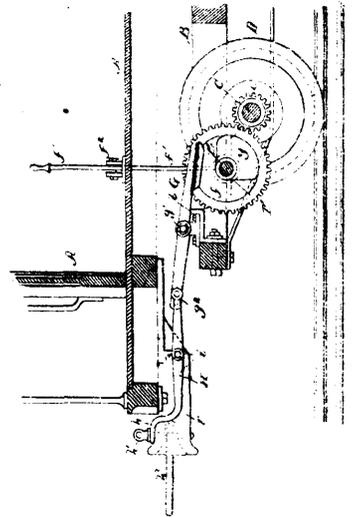
41488 Stock's Wheel Plow.



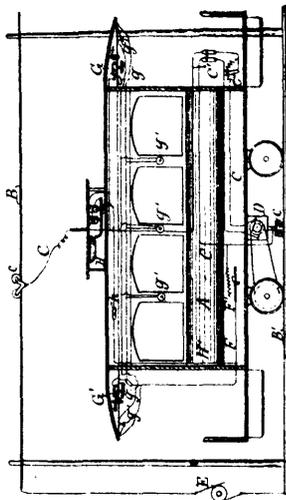
41489 Gordon's Step-ladder.



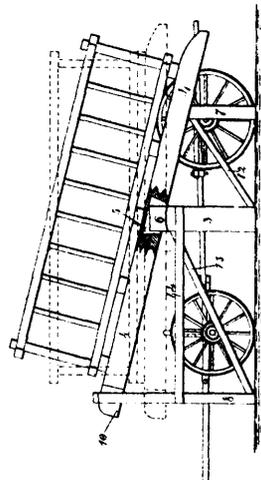
41490 Hamilton's Pipe or Reed Organs, &c.



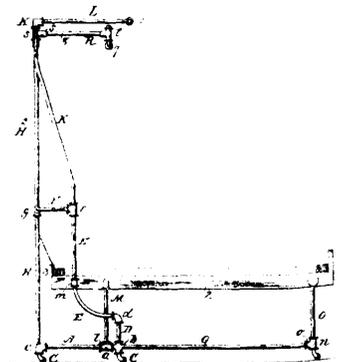
41491 Wortmann's Device for uncoupling Cars.



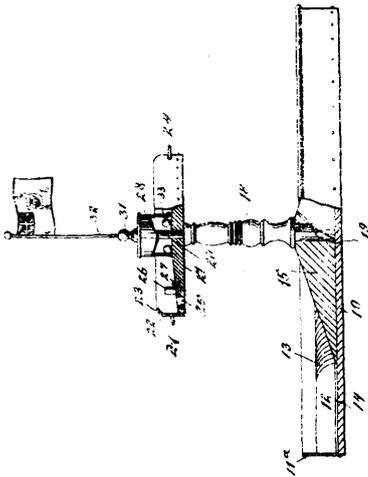
41492 Dewey's Electric Railway Car.



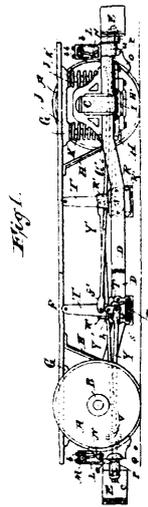
41493 Anderson's Hay Rack Loader and Un-loader.



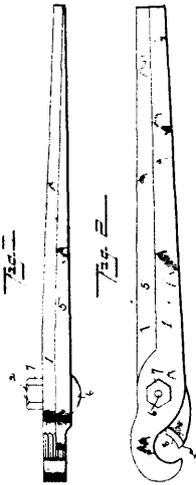
41494 Ennes' Folding Bed.



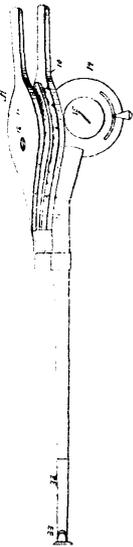
41495 Scott's Game Apparatus



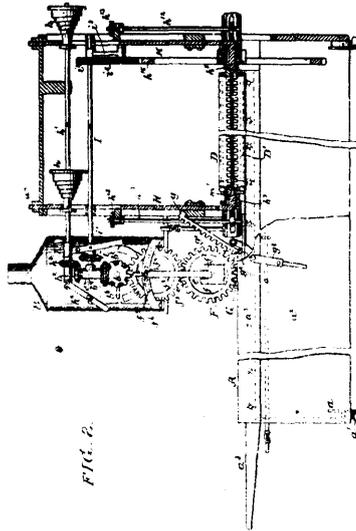
41496 Brill's Brake Mechanism.



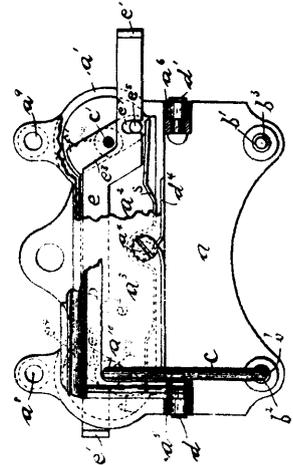
41497 Rufer's Method of Mutilating the Threads of Bolts.



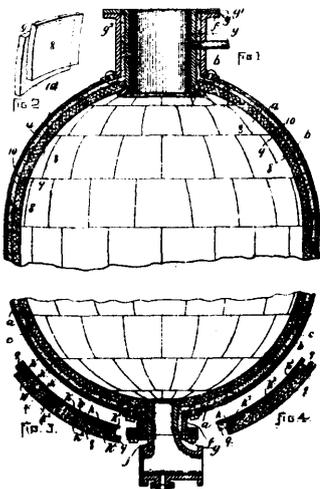
41498 Joosten's Device for Distributing Fungus and Insecticide Powder.



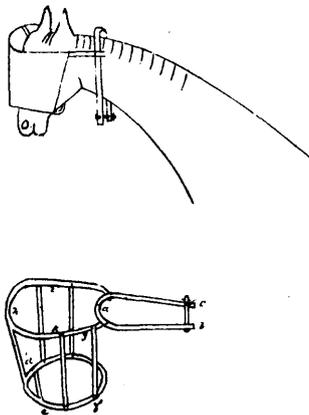
41499 Bonta's Method of Rolling Plate or Sheet glass.



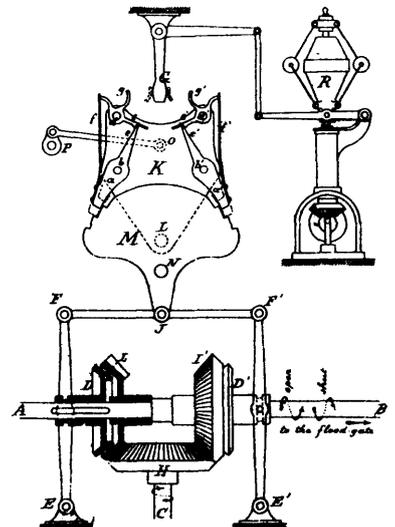
41500 Grantland's Portable Bill and Letter File and Perforating Appliance.



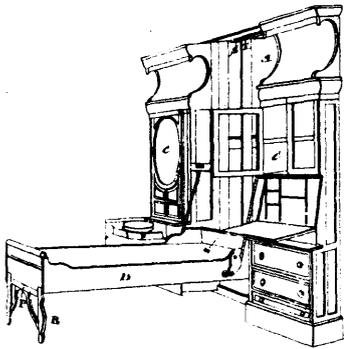
41501 Curtis' Paper Pulp Digester.



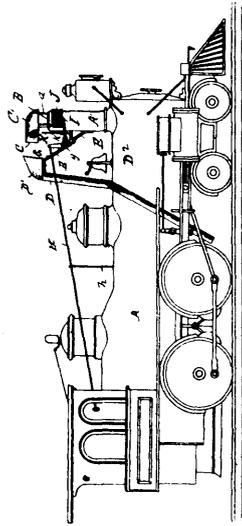
41502 Boyd's Horse Poke.



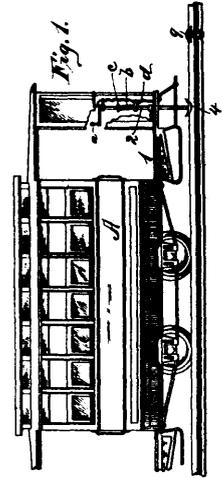
41503 Clement's Governor for Hydraulic Motors.



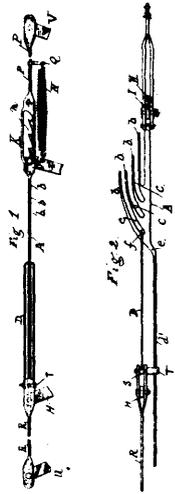
41505 Cook's Wardrobe Bed.



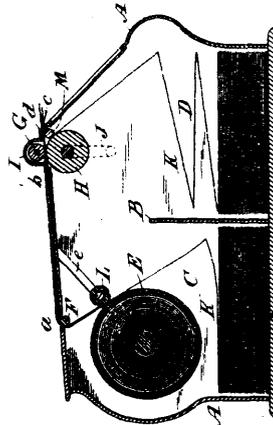
41506 Spencer's Spark Arrester.



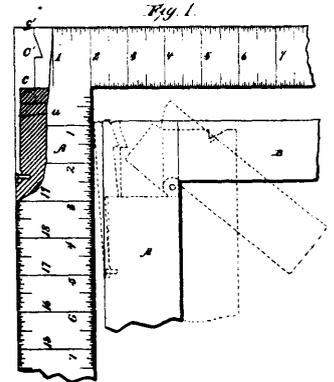
41508 Stone's Device for turning the Switch-rail of Switches into Railroads.



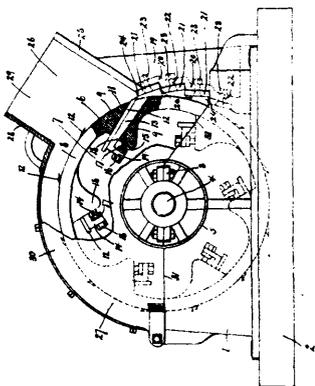
41509 Cyr's Car Brake Adjuster.



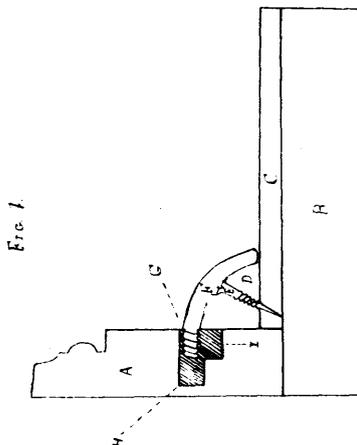
41510 Cochran's Autographic Register.



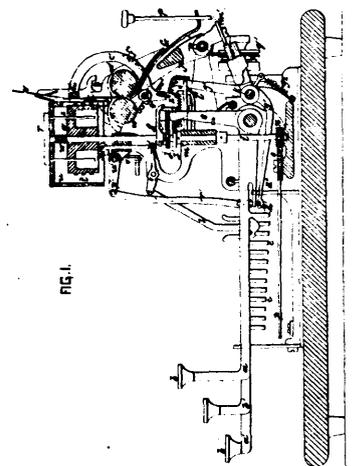
41512 Morse's Folding Framing Squares.



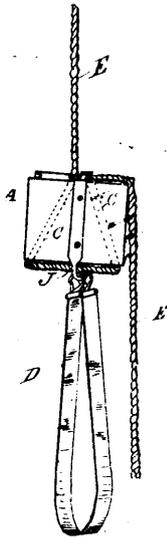
41513 Merrill's Wood Cutting Machine.



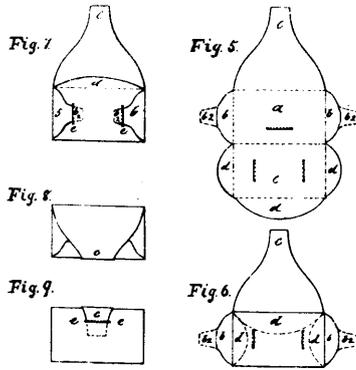
41514 Coleleugh's Apparatus for fastening down Carpets.



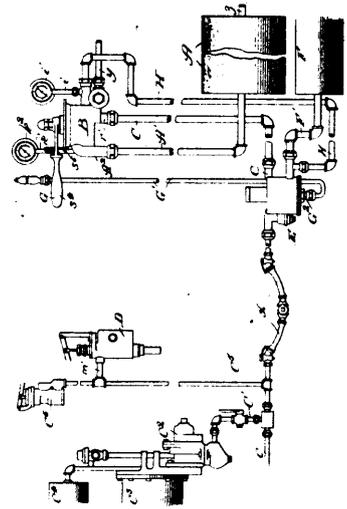
41515 Brooks' Type-writer.



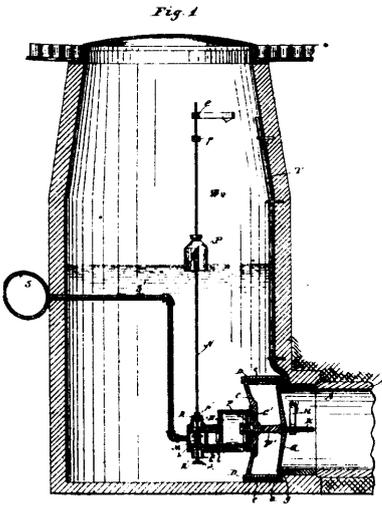
41517 Haigh and Haynes' Fire Escape



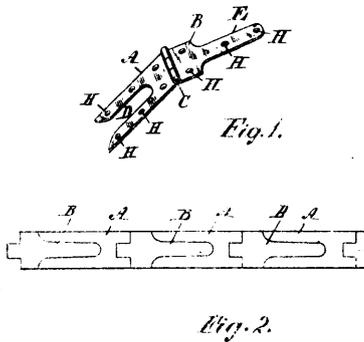
41518 McDonnell's Envelope.



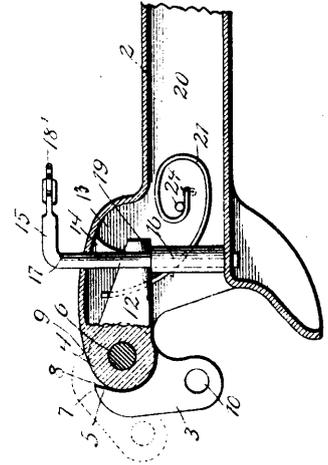
41519 Mason's Air Brake and Signalling Apparatus for Railway Trains.



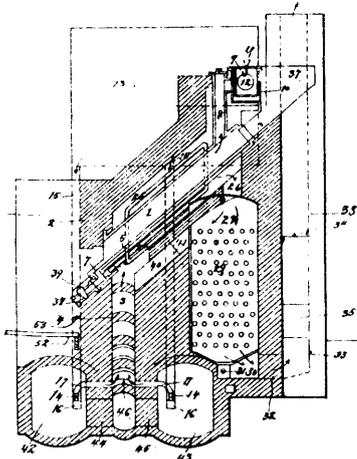
41520 Van Duren's Sewer Flushing Device.



41521 Beacock's Trunk Hinge.



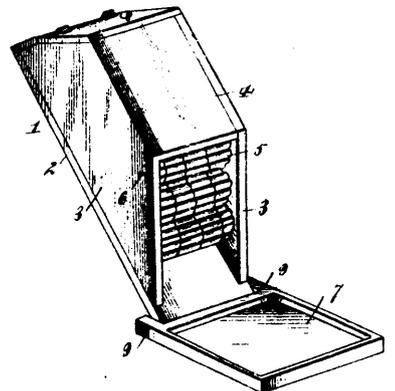
41522 McMichael's Car Coupler.



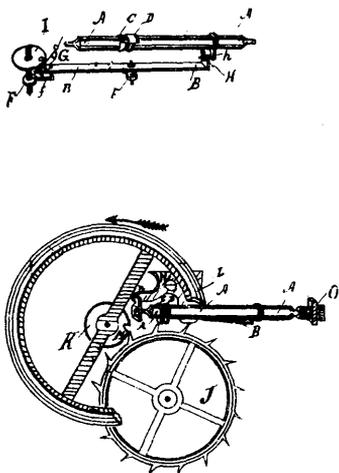
41525 Bemelman's Apparatus for Roasting Ore.



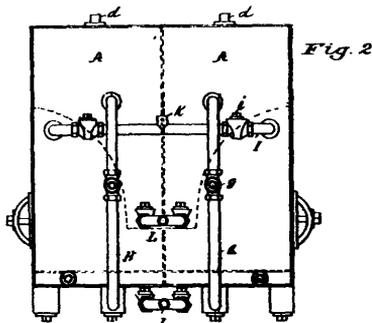
41526 Brady's Car Coupler.



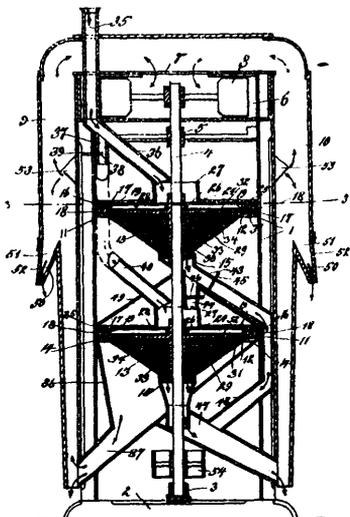
41527 Hurdle's Stock Salt Feeder.



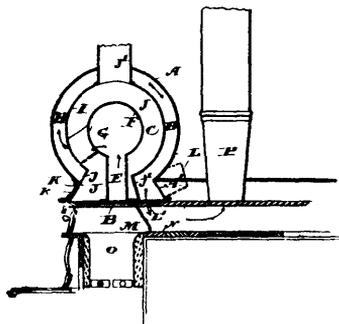
41528 Park's Watch Escapement



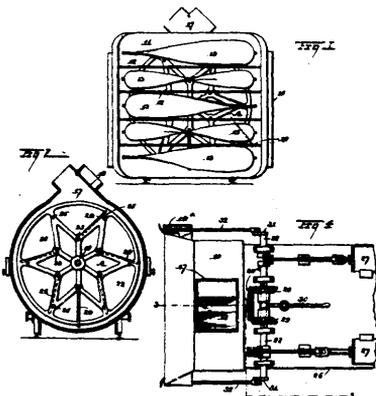
41529 Hawkins' Method of Generating Hydrogen Gas.



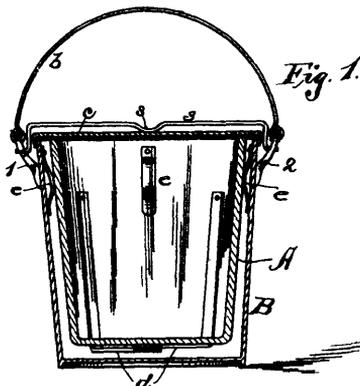
41530 Provost's Grain Scouring Machine.



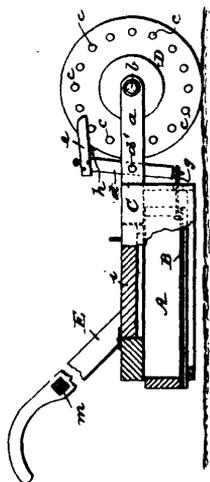
41531 Stacey's Hot Air Generator.



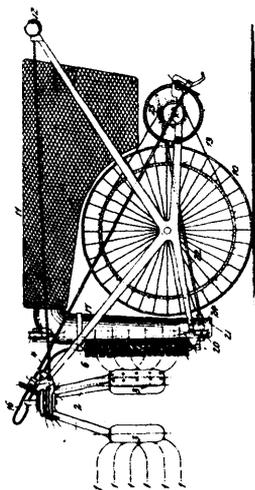
41533 Gardiner's Snow Plow.



41534 Kneeland's Butter Package.



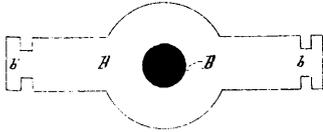
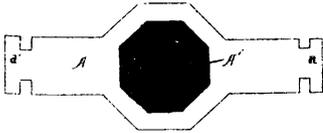
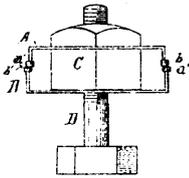
41535 Reichwein's Lawn Tennis Court Markers.



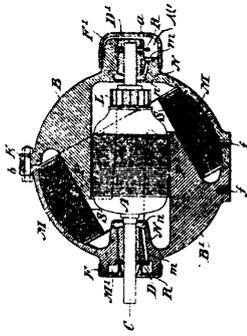
41536 Beekman's Cotton Harvester.



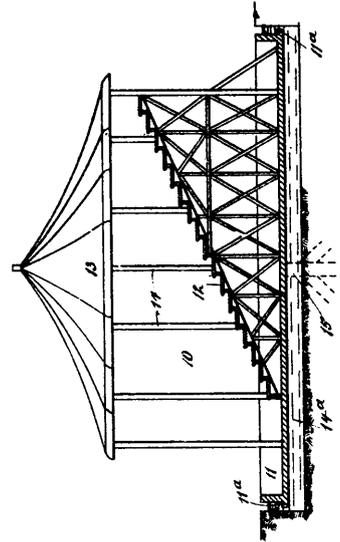
41537 Burgess' Flue Cleaner.



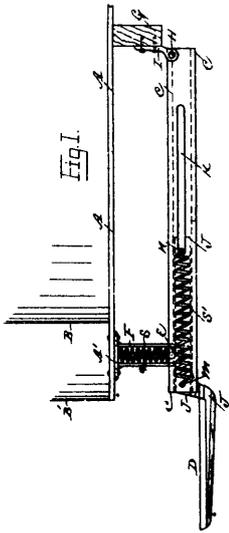
41538 Pugh and Hopkins' Nut Lock.



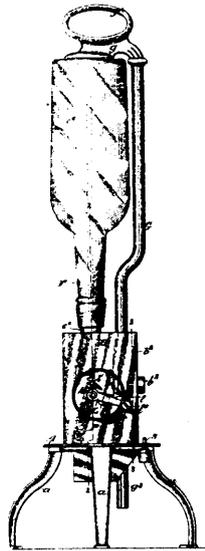
41539 Lundell's Electric Motor.



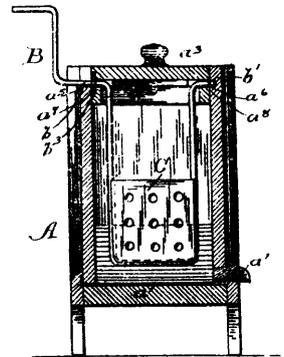
41540 Cuplin's Grand Stand.



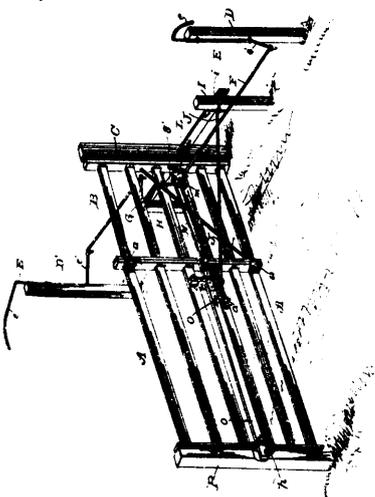
41541 Meegan's Accident Preventative Device for Street Cars.



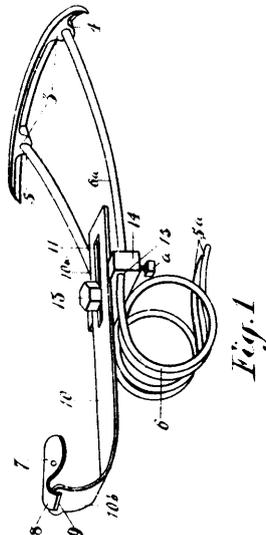
41542 Fowler's Liquid Dispensing Apparatus.



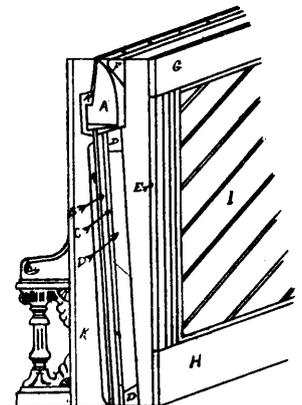
41543 Parker's Churn.



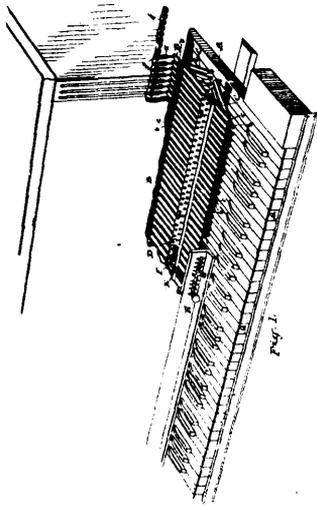
41544 Peterson's Gate.



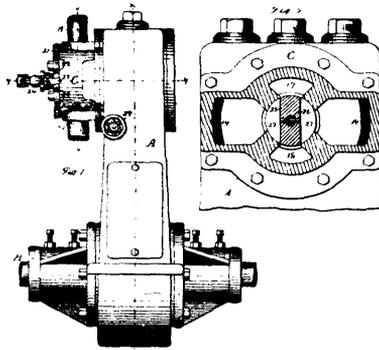
41545 Cutler's Saddle for Velocipedes.



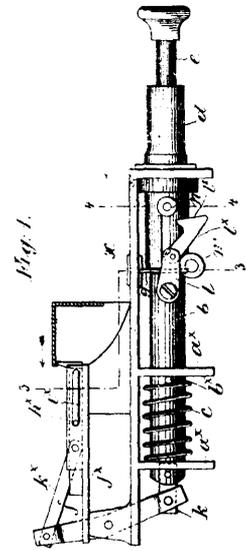
41546 Mitchel's Piano Plate Frame.



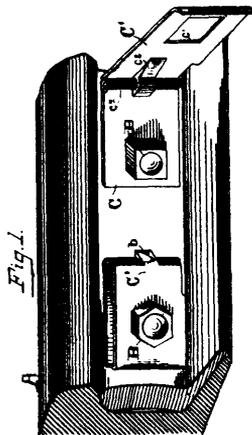
41547 Bracken's Key for Transposing Music.



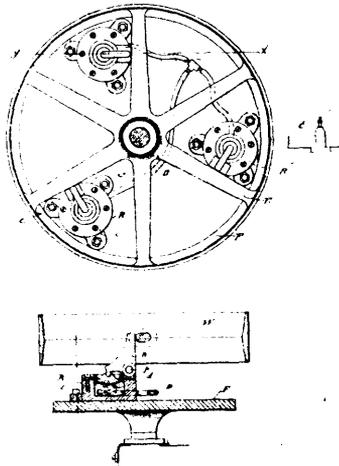
41548 Case's Marine Engine.



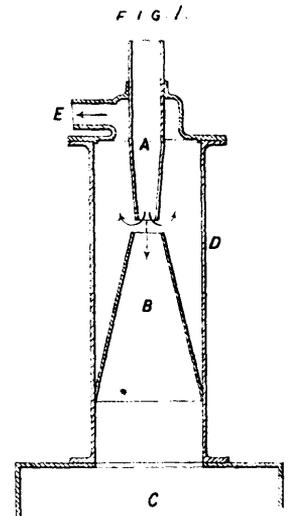
41549 Ducker and Dumont's Coin Controlled Machine.



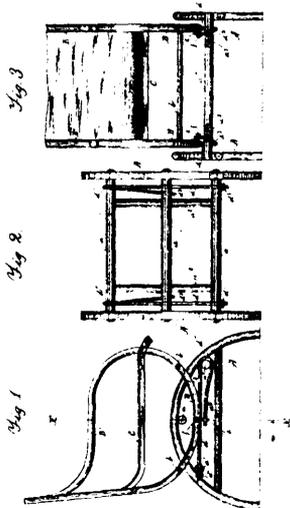
41551 McDonald's Nut Lock.



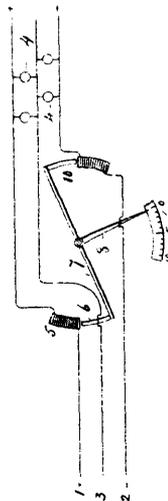
41552 Brown's Driver for Lathe or Planing Machines.



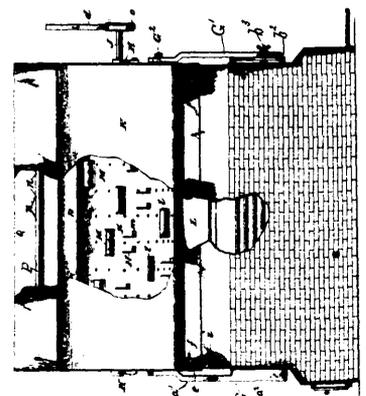
41553 Duckham's Machine for separating grain and dust or stive from air-laden therewith.



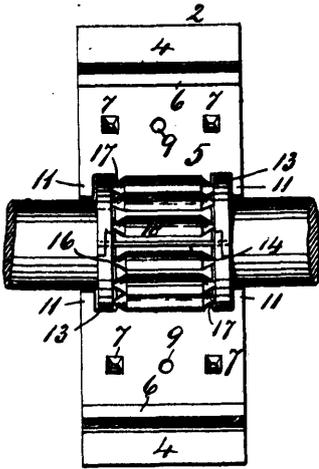
41554 Ordway's Spring Rocking Chair.



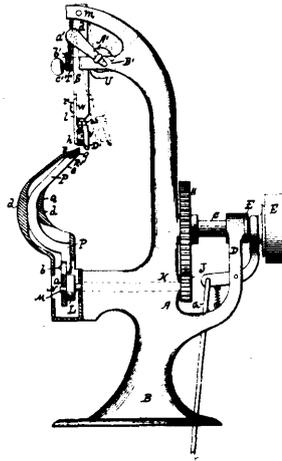
41555 Pilkington and White's Means for Operating Ammeters and other Electrical Apparatus.



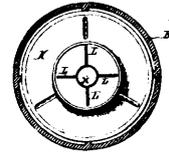
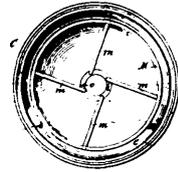
41556 Hopkins' Device for Drying Grain.



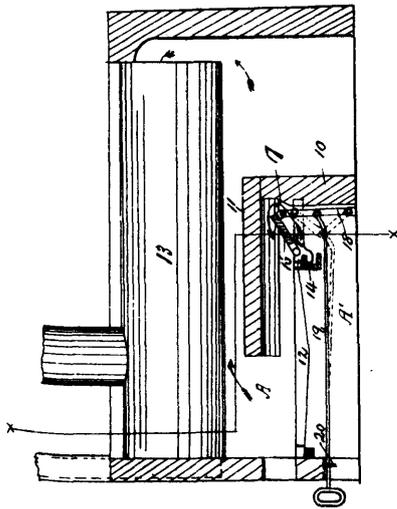
41557 Eveland's Axle Journal and Wrest Pin Box.



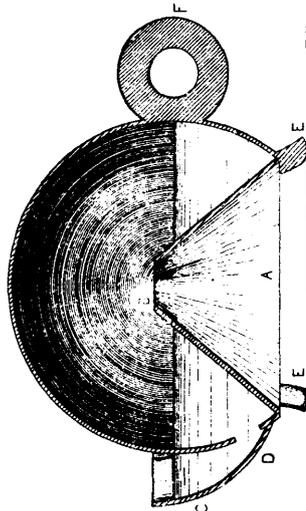
41558 Day's Machine for Trimming the Uppers of Boots and Shoes.



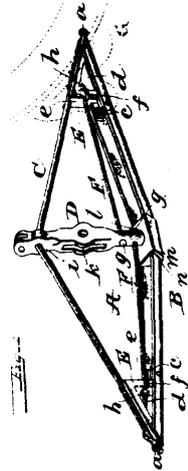
41559 Von Bechtolskain's Centrifugal Separator.



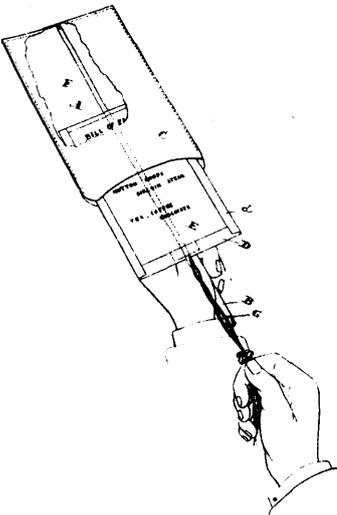
41560 Bachus' Furnace.



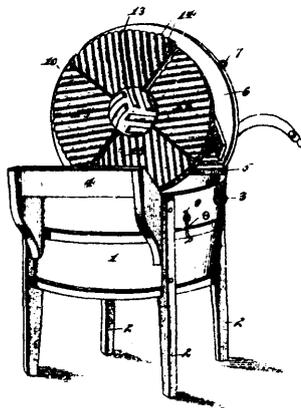
41561 Shleacow's Fly Trap.



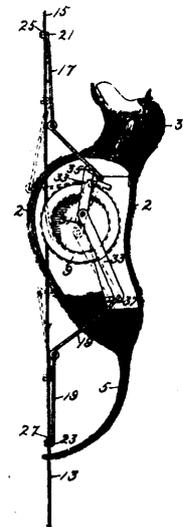
41562 Green's Brake Beam for Railway Cars.



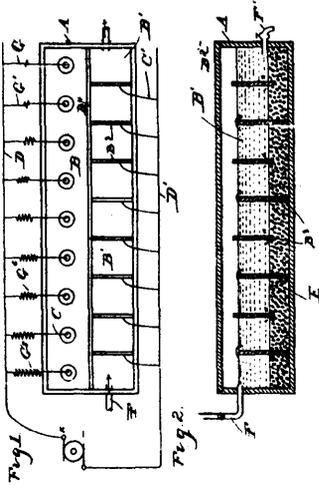
41563 O'Brien's Advertising Programme and Bill of Fare Holder.



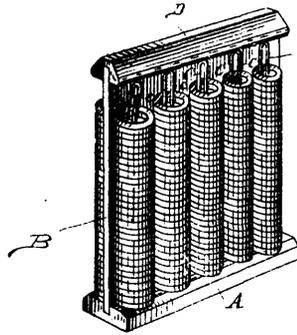
41564 Weston's Washing Machine.



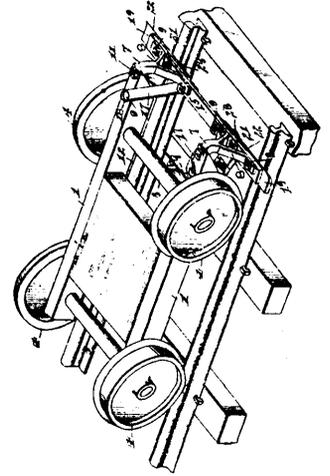
41566 Shattuck's Toy.



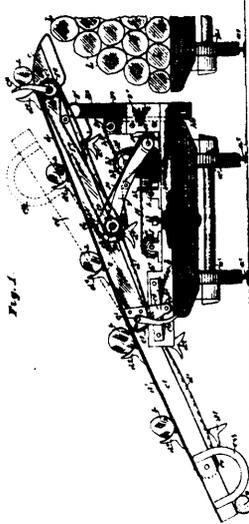
41567 Crane's Electrolytic Apparatus.



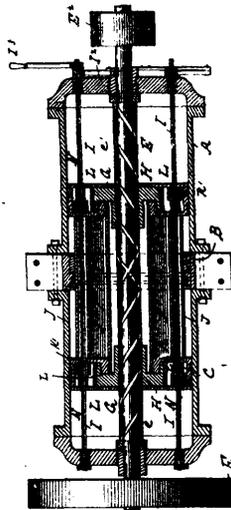
41568 Gingras' Rack for Axle Washers, &c.



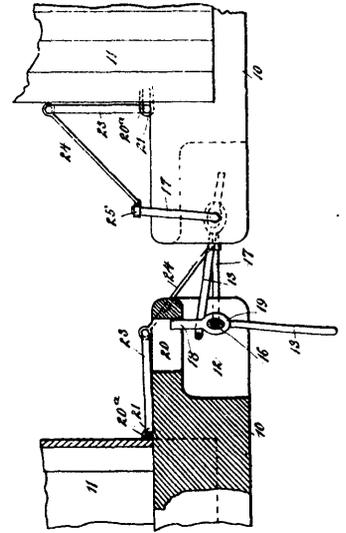
41569 Fisher's Safety Attachment for Car Trucks



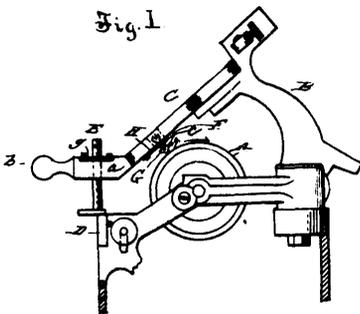
41570 Kaime's Loading and Piling Machine.



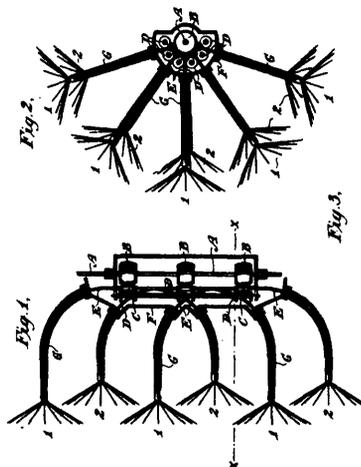
41571 Rice's Steam Engine.



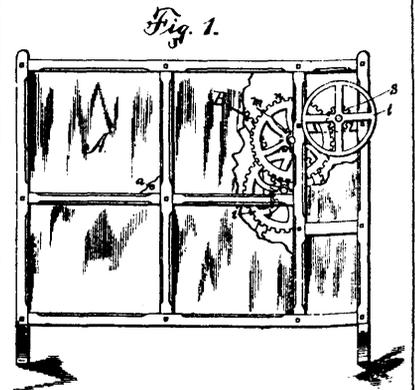
41572 Smith's Car Coupler.



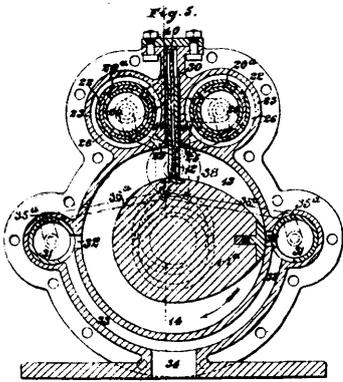
41573 Edison's Determining Device for Phonograph.



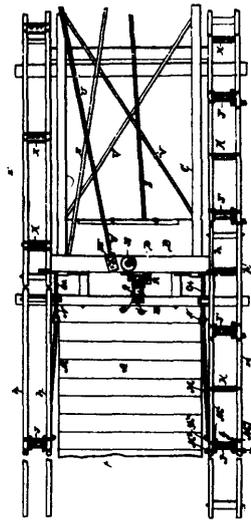
41574 Beekman's Picker for Cotton Harvesters.



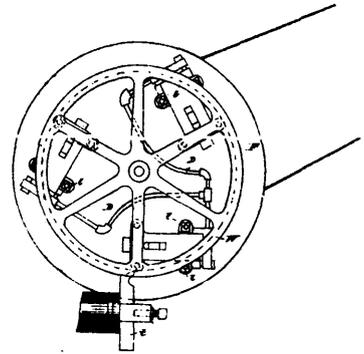
41575 Dart's Spring Motor.



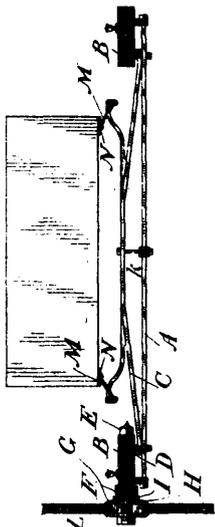
41576 Towlson's Rotary Fluid Pressure Engines.



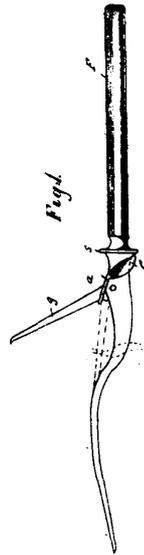
41577 Roberts' Railroad Track-laying Machine.



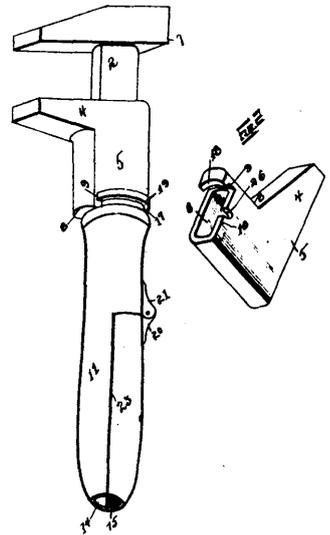
41578 Brown's Driving Mechanism.



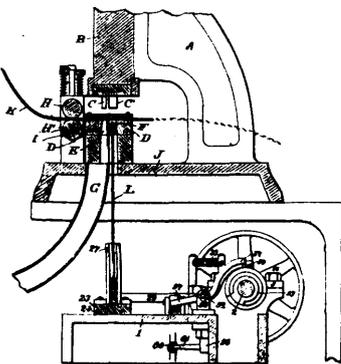
41579 Bonnar's Running Gear.



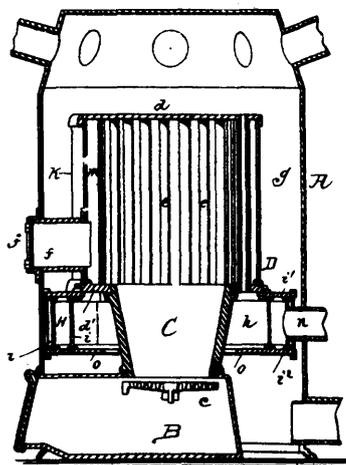
41580 Foster's Holder for the Guards of Carving Forks.



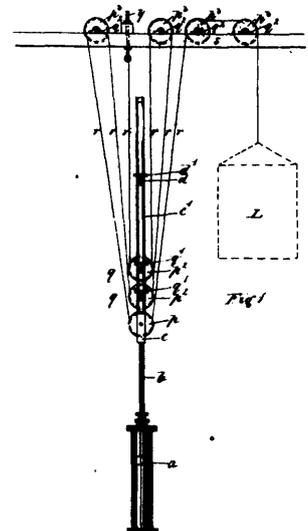
41581 Boehmer's Wrench.



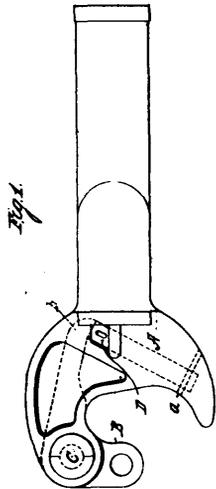
41582 Egge's Chain Machine.



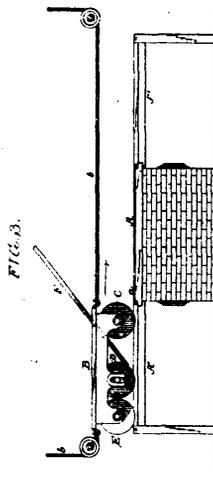
41583 Martin's Hot Air Furnace.



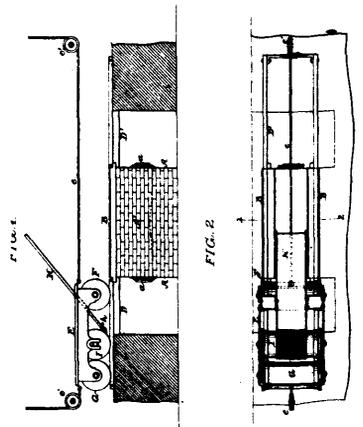
41584 Dillon and Welsby's Apparatus for actuating Lifts, Elevators, &c.



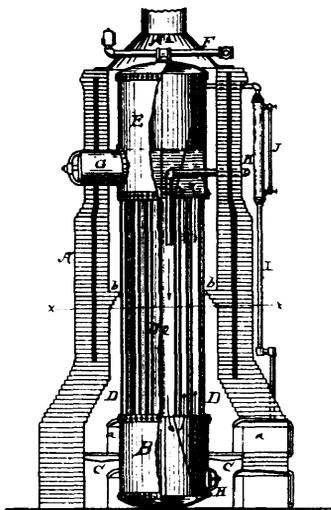
41585 La Burt's Car Coupler.



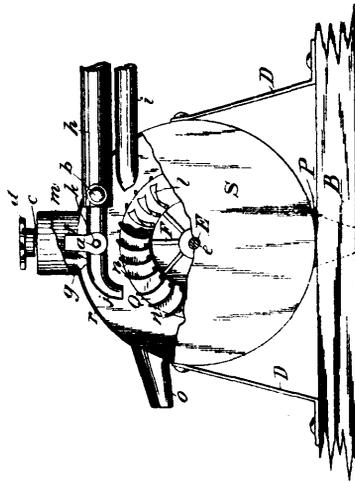
41586 Shuman's Process for Embedding Wire in Glass.



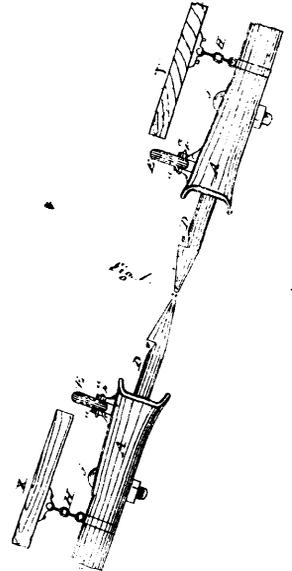
41587 Shuman's Machine for Embedding Wire in Glass.



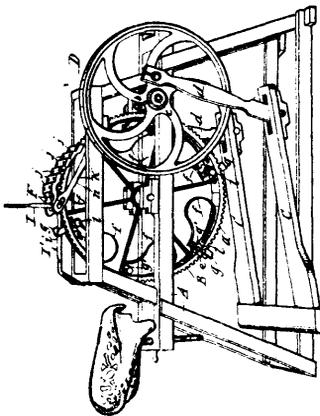
41588 Cook, Bingham, Douglas, Squire, King, Schmick and Wilker's Steam Boiler.



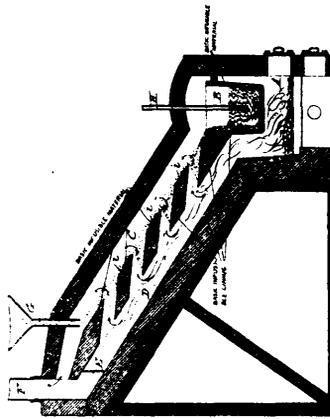
41589 Sand's Motor.



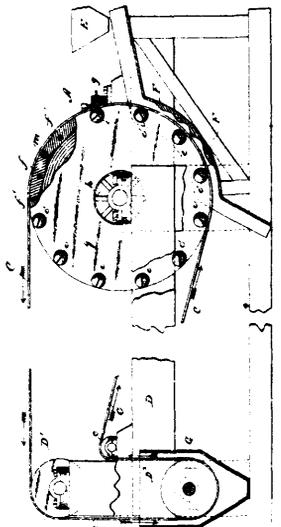
41590 Bunker and McKeggie's Car Coupler.



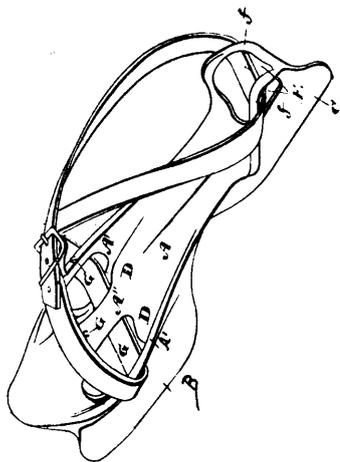
41591 Smith's Fruit Slicer.



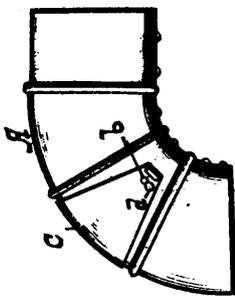
41592 Lawton's Apparatus for Making Salt.



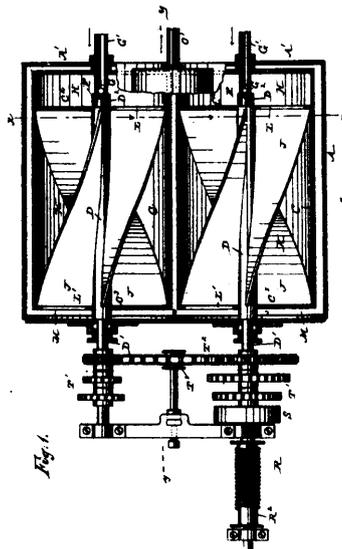
41593 Wiman's Rotary Magnetic Separator.



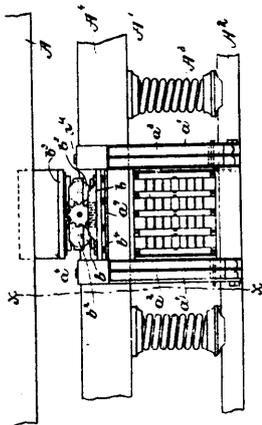
41594 Smith's Skate.



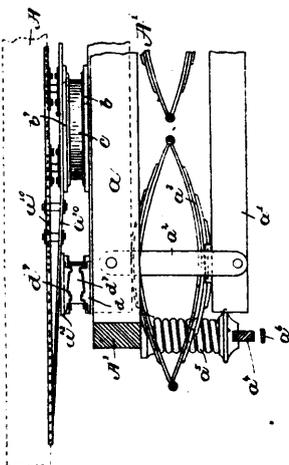
41595 Cranston and Richard's Stove Pipe Elbow.



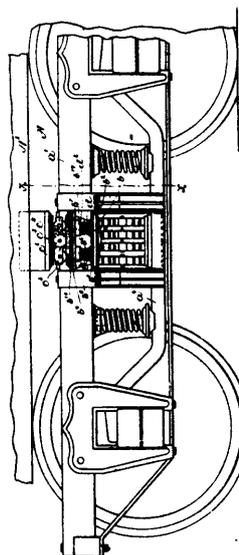
41596 Tayler's Gas Delivering Apparatus.



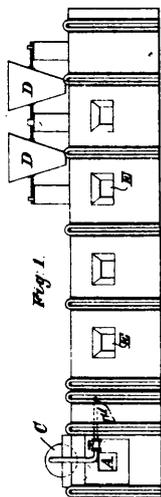
41597 Jewett's Anti-friction Support for Cars.



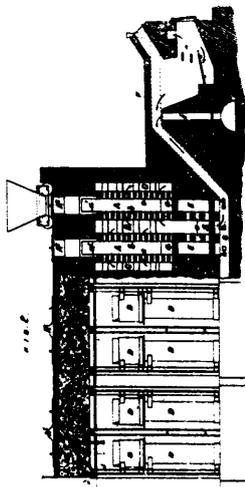
41598 Jewett's Anti-friction bearing.



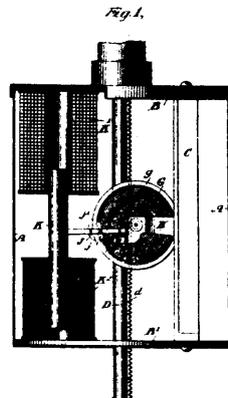
41599 Jewett's Side Bearing for Car Bodies.



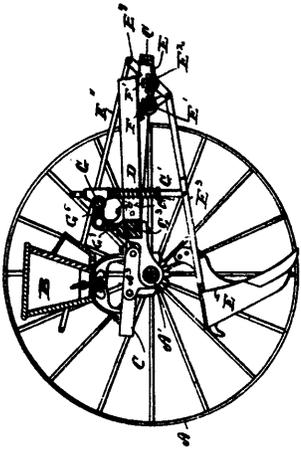
41600 Honman and Vrilliez's Apparatus for making White Lead.



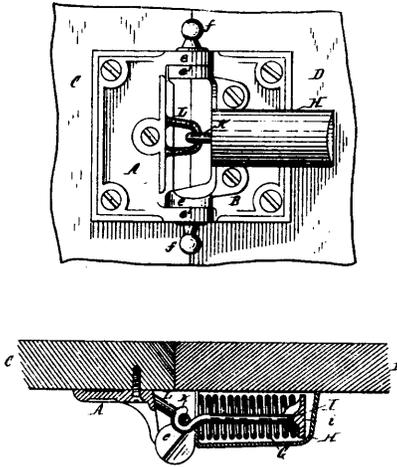
41601 Jones' Method of Producing Coke.



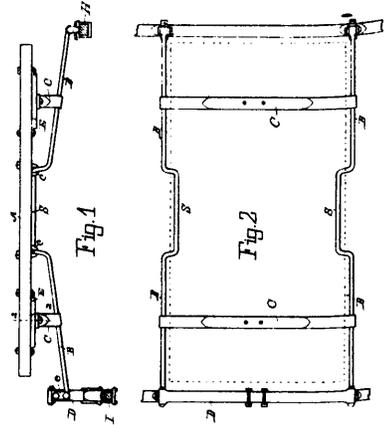
41602 Brown's Electric Arc Lamp.



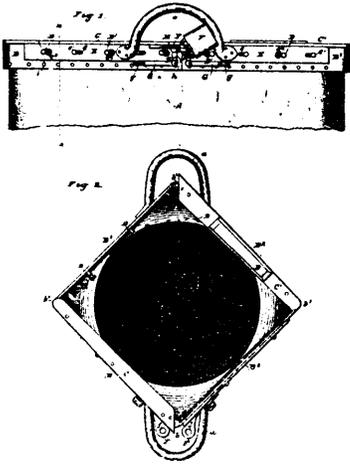
41603 Patric's Grain Drill.



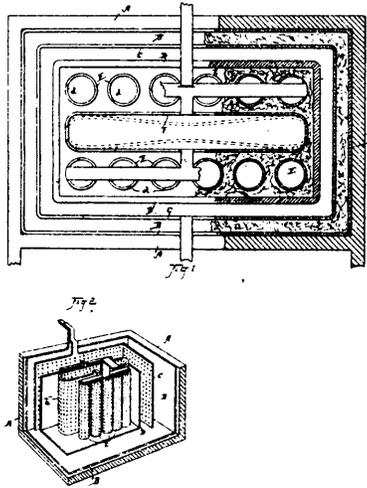
41604 Stearns' Spring Hinge.



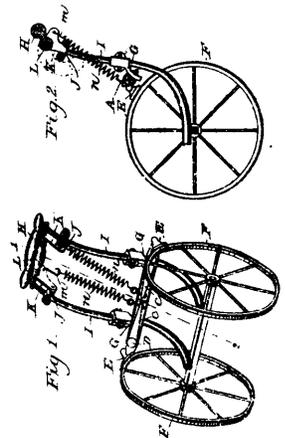
41605 Brooks' Vehicle Spring.



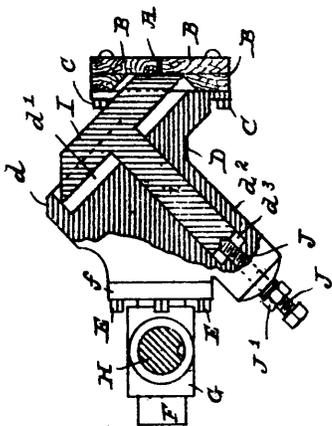
41606 Tatro's Mail Bag.



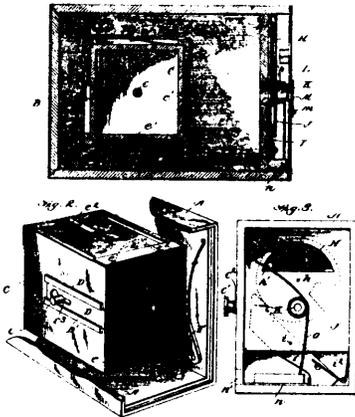
41607 Washburn's Storage Battery.



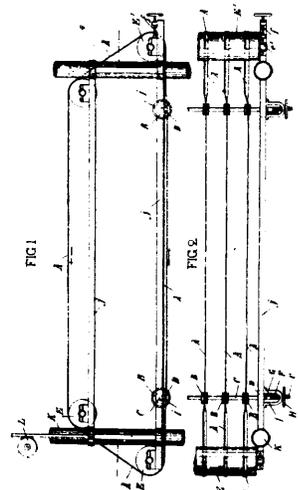
41608 Wilson's Brake for Baby Carriages.



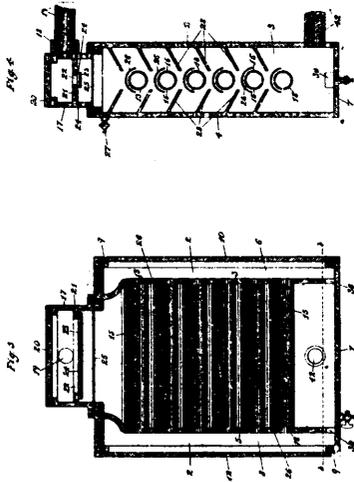
41609 Mead's Band Saw Attachments.



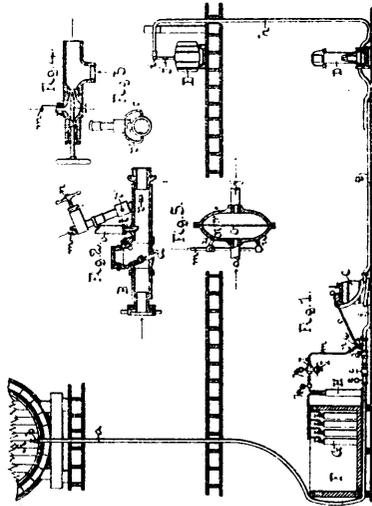
41610 Walker's Photographic Camera.



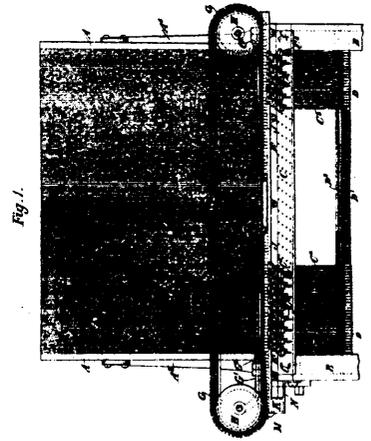
41611 Jeansaume's Multiple Saw Frame.



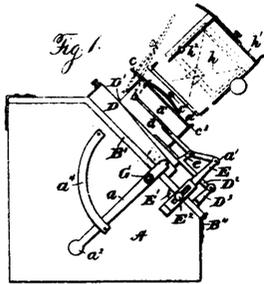
41612 Chute's Feed Water Heater.



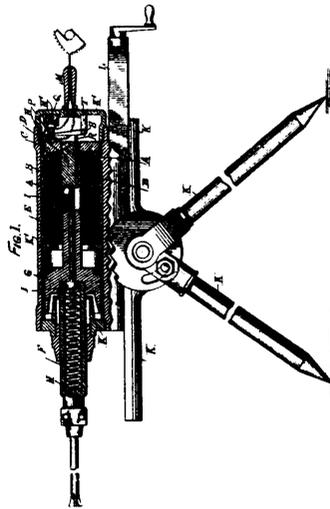
41613 Stobaens and Wackenhuth's Apparatus for Carbonating Beer.



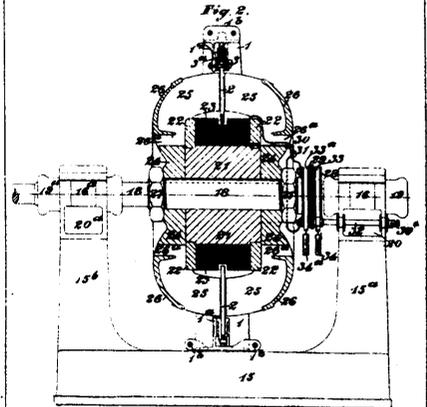
41614 Kay and Rae's Machinery for Setting Type.



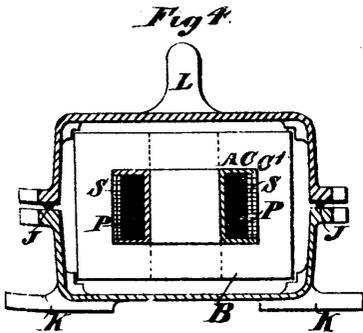
41615 Wynkoop and Kemp's Apparatus for Printing Photographs.



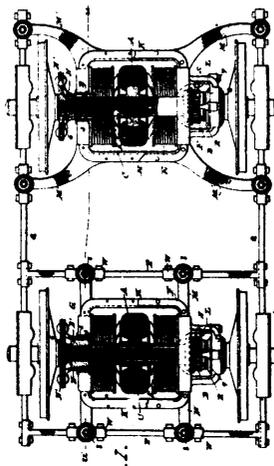
41616 Birkin's Apparatus for Operating the Stock of Percussive Drills.



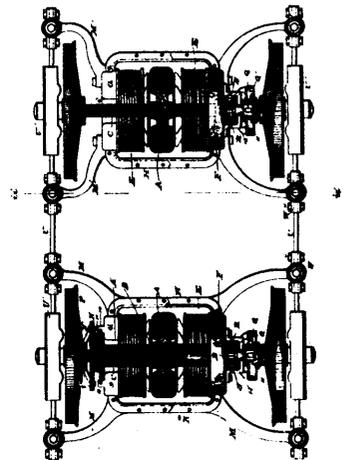
41617 Mordey's Dynamo Electric Machine.



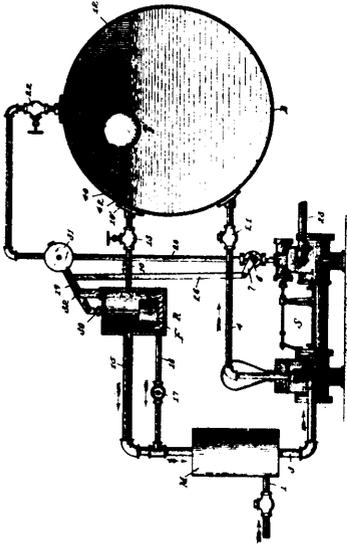
41618 Mordey's Electric Transformer.



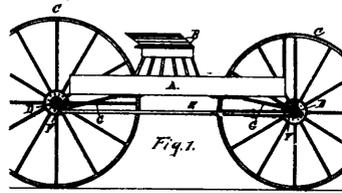
41619 Short's Mounting for Motors of Electric Cars.



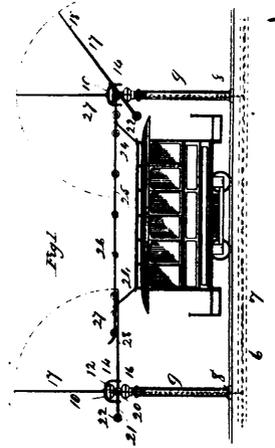
41620 Short's Electric Car.



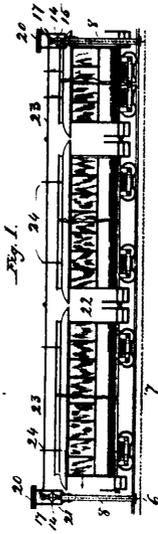
41621 Cluth's Method of Feeding Boilers.



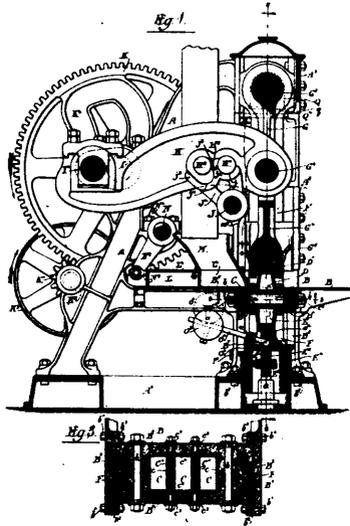
41622 Newton's Vehicle Spring.



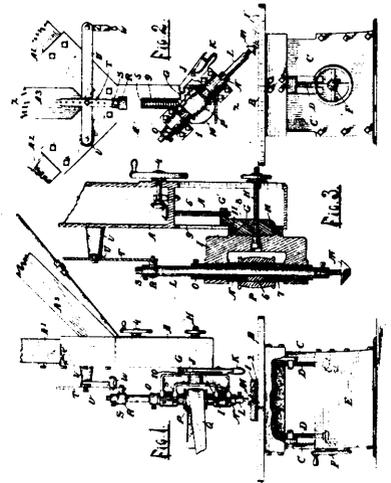
41623 Munsie's Electric Railway.



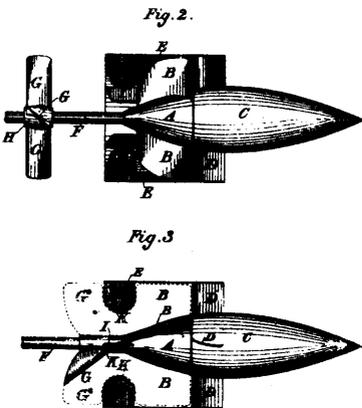
41624 Munsie's Electric Railway.



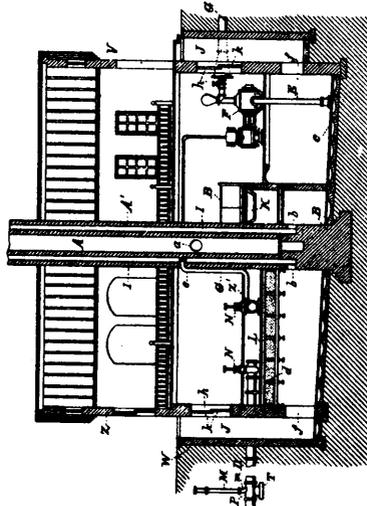
41625 White and Boyd's Brick Machine.



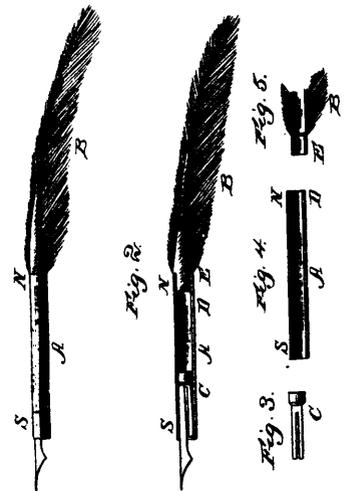
41626 Madison, Hoyt and Ware's Wood Working Machine.



41627 Barnaby's Propelling and Steering Apparatus for Ships.

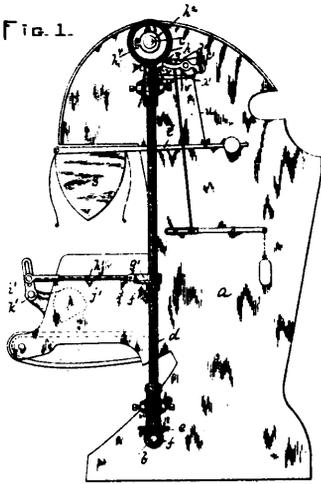


41628 West's Sewerage Apparatus.

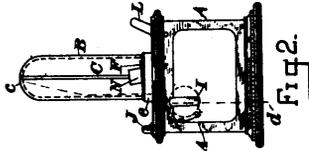


41629 Brown's Magnetic Pen-holder.

Fig. 1.

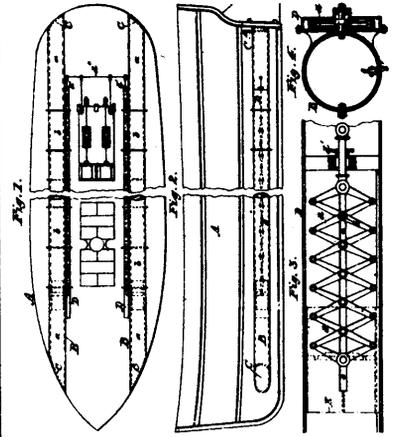
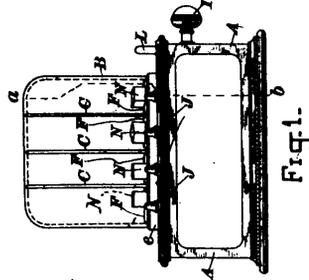


41630 Geb's Feeding Mechanism for Carding Engines.

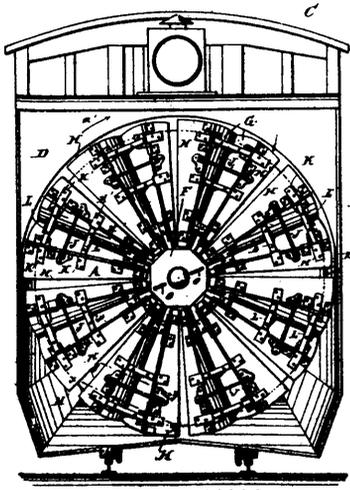


41631

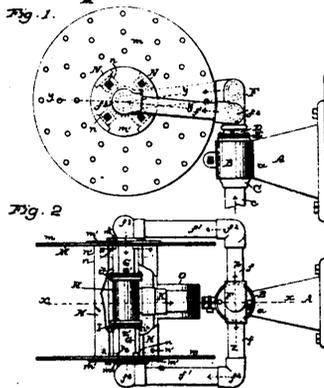
Smith's Toy.



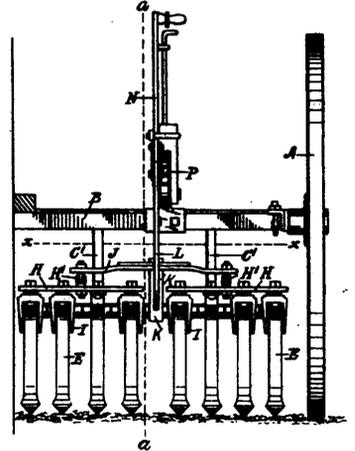
41632 Wirth's Propelling Apparatus for Vessels.



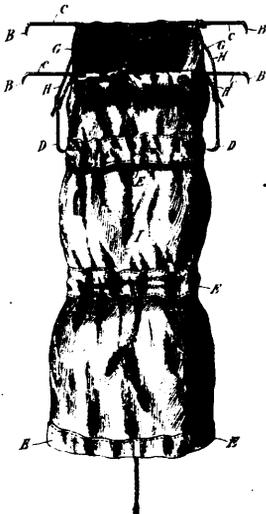
41633 Leslie's Rotary Snow Plow.



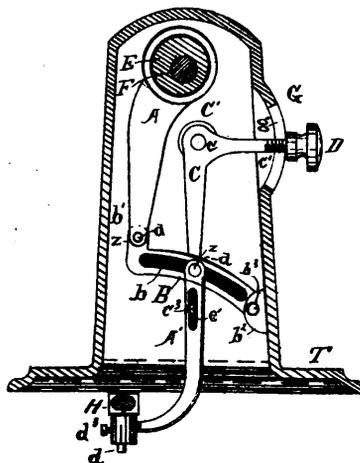
41634 Schenck's Hose Reel.



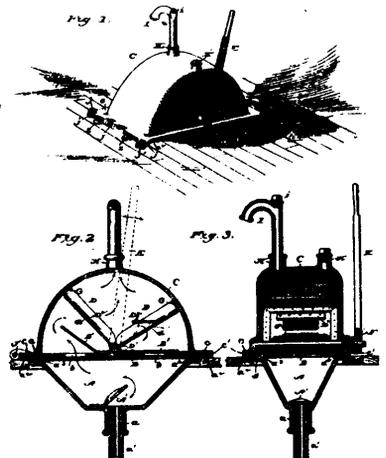
41635 Hewitt's Cultivator.



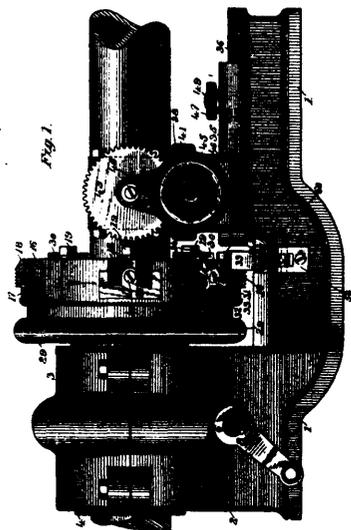
41636 Bouvier's Fire Escape.



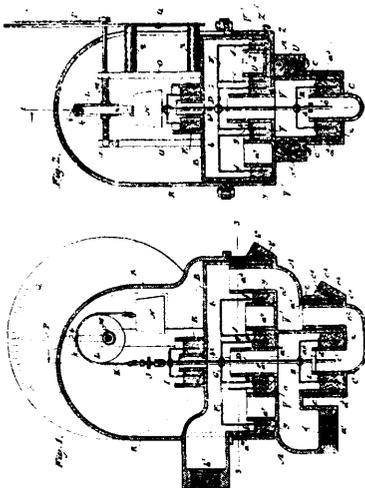
41637 Lisle and Pierce's Sewing Machine.



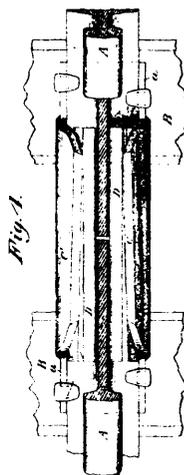
41638 McLennan's Pump.



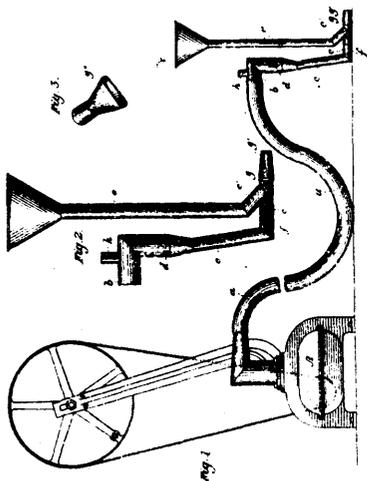
41639 Cash's Machine for Threading and Cutting off Pipe.



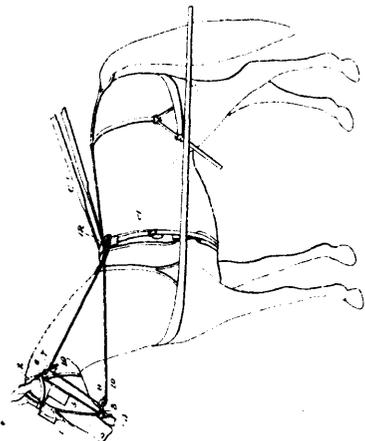
41640 O'Gorman's Gas Regulator.



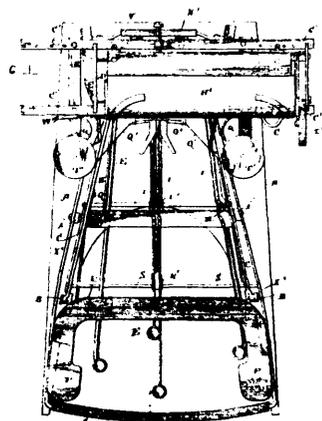
41641 Patterson's Rail Support.



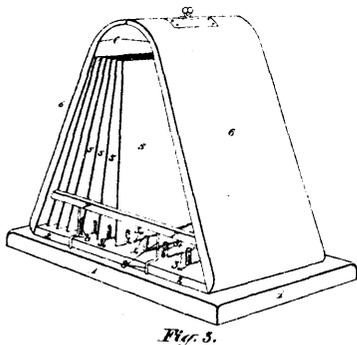
41642 Patterson's Method of Tamping Railway Ties.



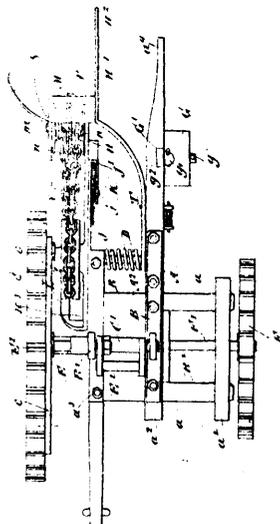
41643 Welcome's Harness.



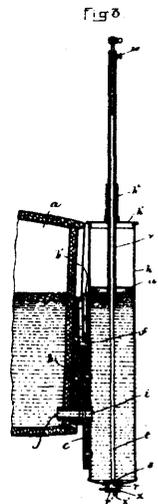
41644 Daugherty's Type-writer.



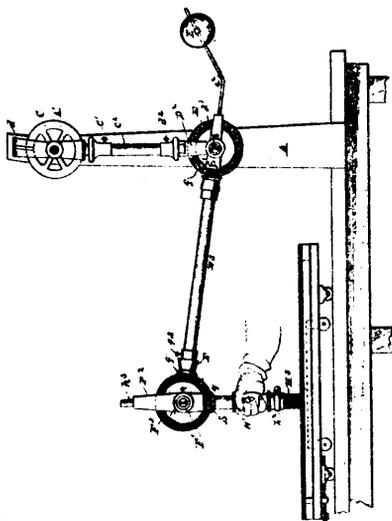
41645 Bambridge's Photograph Holder.



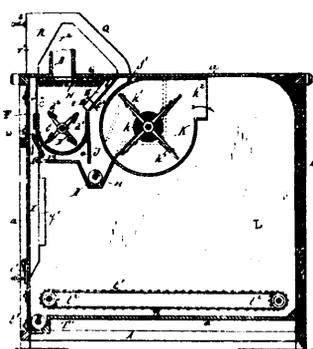
41646 Carpenter's Machine Plow.



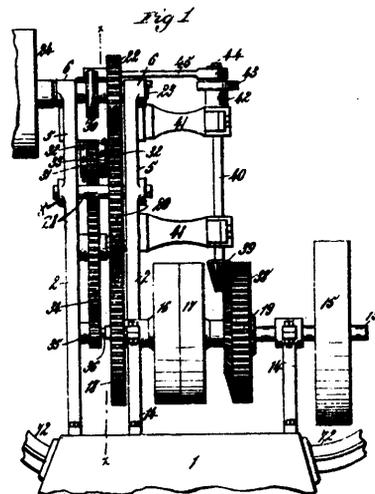
41647 White's Liquid Measuring Vessel.



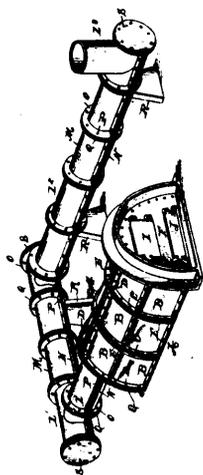
41649 Tietjen's Sign Stenciling Machine.



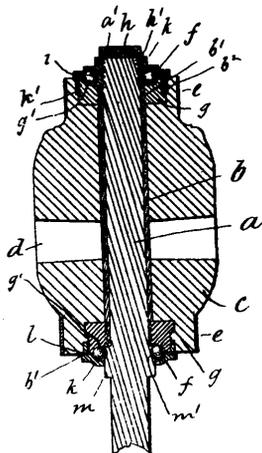
41650 Heine's Grain Cleaner.



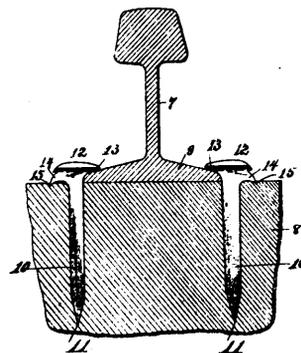
41651 Hathaway's Machine for making Wire Fence Strands.



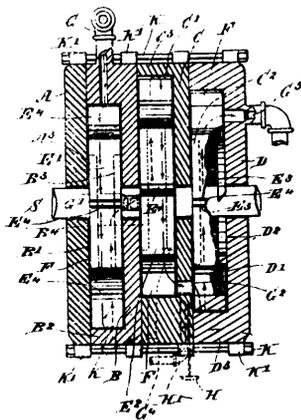
41652 Johnson and Moran's Furnace.



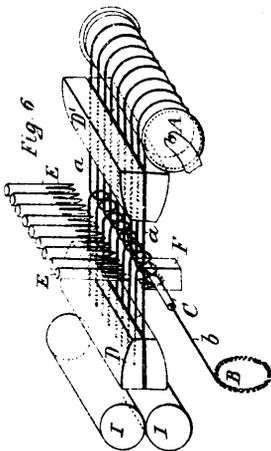
41653 Dansereau's Ball Bearing.



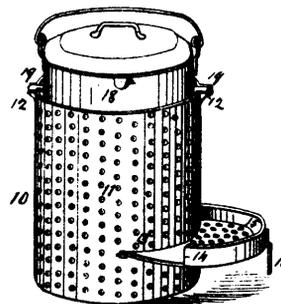
41654 Bracey's Railroad Spike.



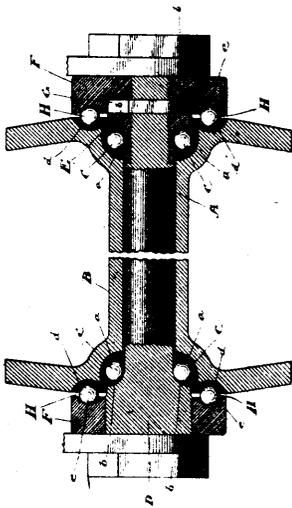
41655 Raith's Rotary Engine.



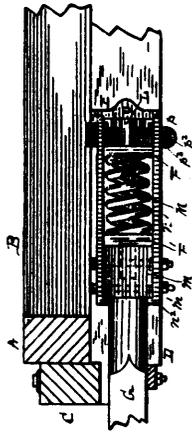
41656 Pearson and Penn's Apparatus for making Rectangular Meshed Wire Netting.



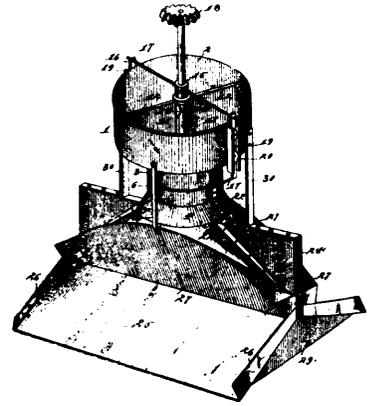
41657 Isaacs' Cooking Utensil.



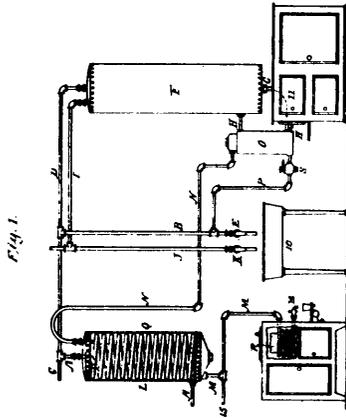
41658 La Force's Axle Bearing.



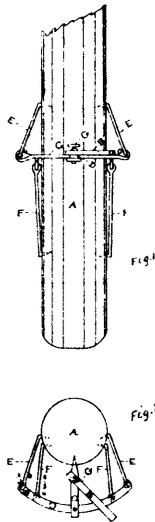
41660 Hinson's Draft Rigging for Car Couplers.



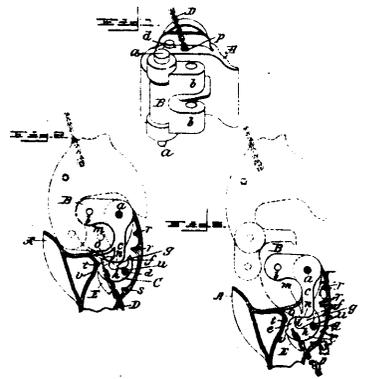
41661 Gribben and Gaige's Feed Regulator.



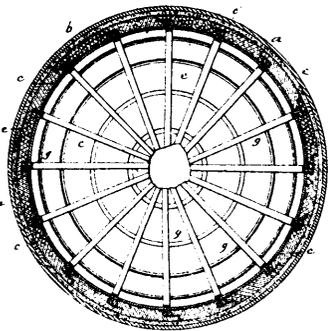
41662 West's Apparatus for Purifying, Sterilizing and Filtering Drinking Water.



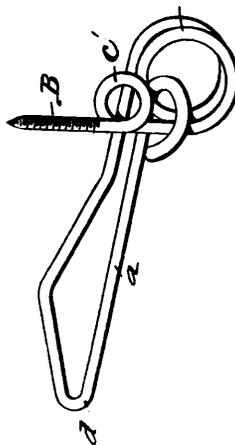
41663 Brickley's Spring-board for felling timber and sawing upper ends of piles after they have been driven.



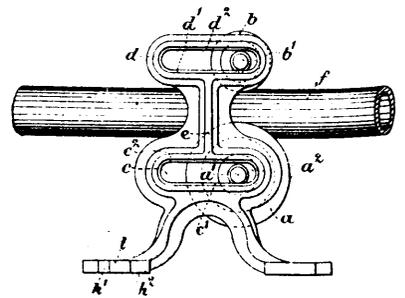
41664 Pooley's Car Coupler.



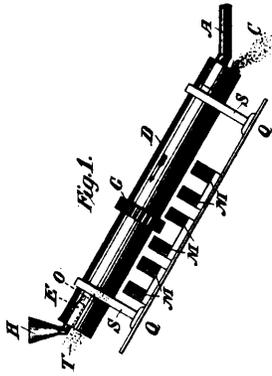
41665 Curtis and Jones' Paper Pulp Digester.



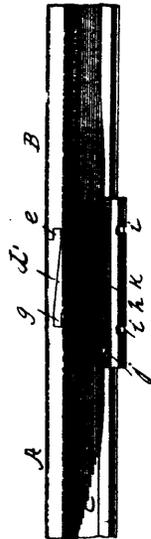
41666 Weatherill's Rein Holder.



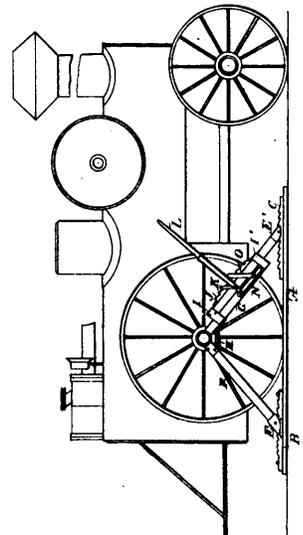
41667 Evans' Bearings for the Operating Rods of Signals and Switches, &c.



41677 Reed's Magnetic Ore Separator.



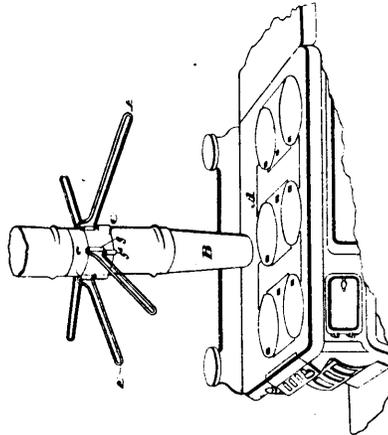
41678 Sarvis' Rail Joint.



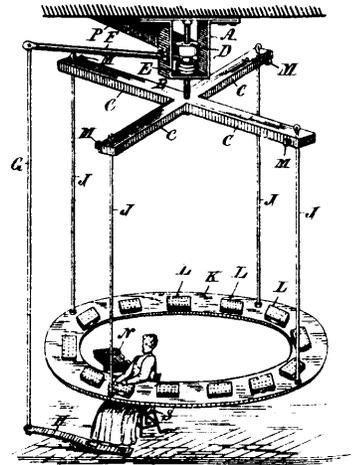
41679 Emde's Steadying Device for Portable Engines.



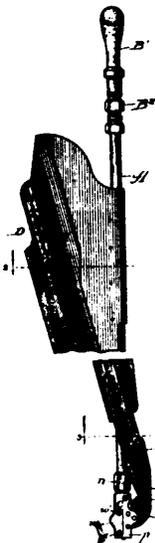
41680 Desmedt's Apparatus for starting tram cars, &c.



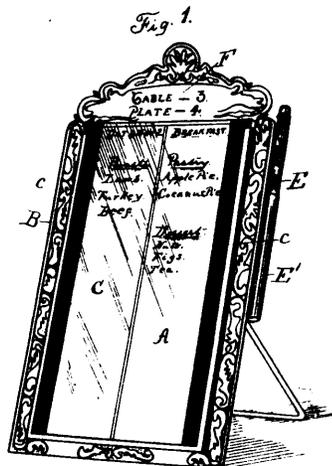
41681 Batters and Duggan's Stove Pipe Airing and Drying Rack.



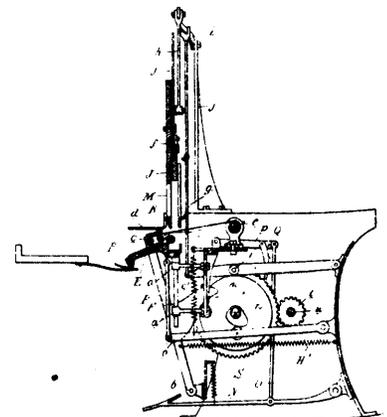
41682 Burland's Rotary Table.



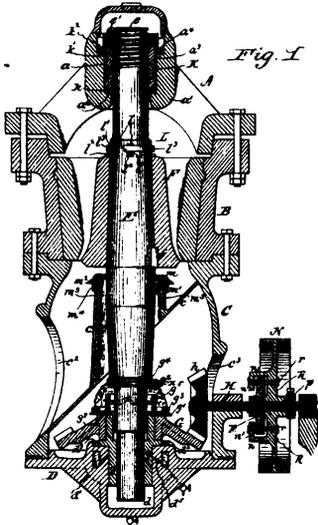
41683 McCormack's Nailing Implement.



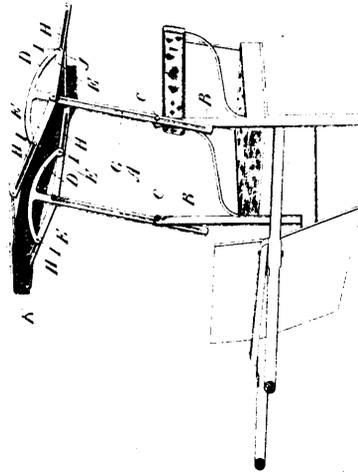
41684 Roberts' Order Tablet.



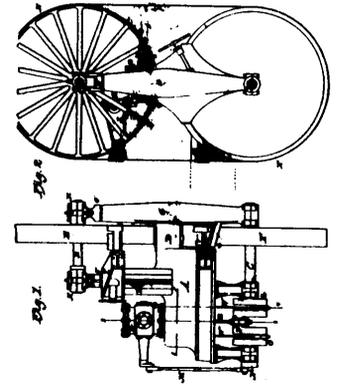
41685 Gordon's Cigar Bunching Machine.



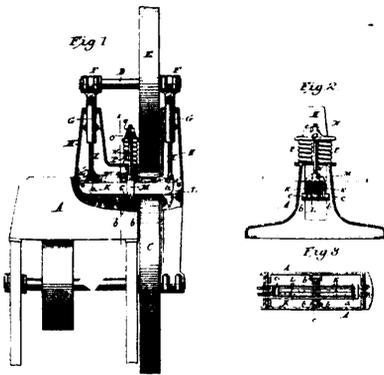
41686 McCulley's Crushing Machine.



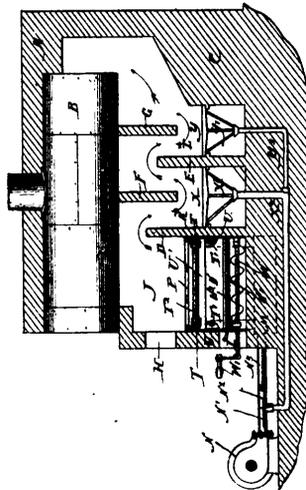
41687 Bunker's Cart Top.



41688 Wilkin's Band Saw Mill.



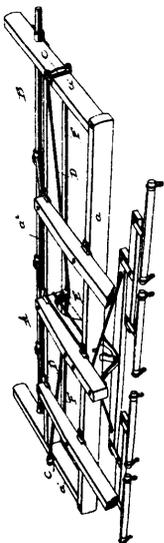
41689 Wilkin's Band Saw Mill.



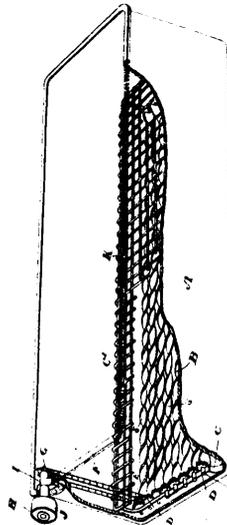
41690 Miles' Furnace.



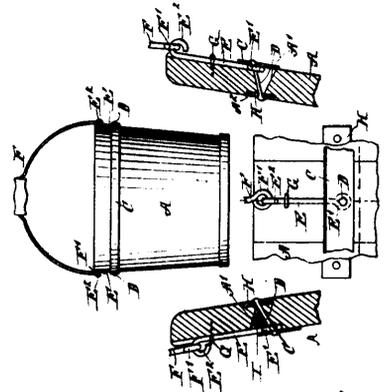
41691 Richardson's Watch Case Spring.



41692 Kirkpatrick's Grain Drilling Machine.



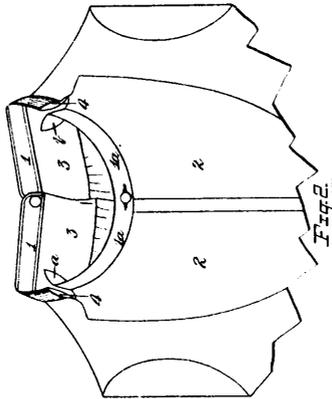
41693 McLennan's Agitator for Mixed Paints.



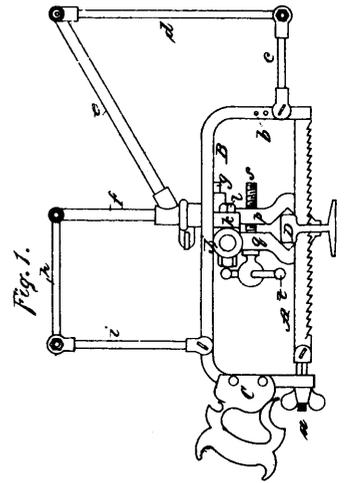
41694 Reese's Wooden Vessel.



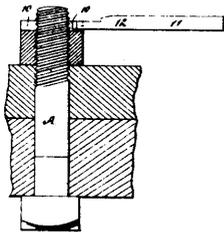
41695 Clearhue's Moccasin.



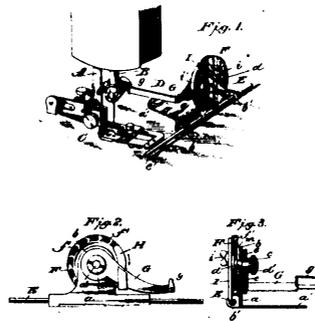
41696 Cooper's Shirt.



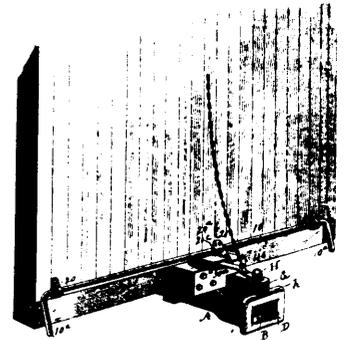
41697 Gallagher and Johnson's Saw Attachment.



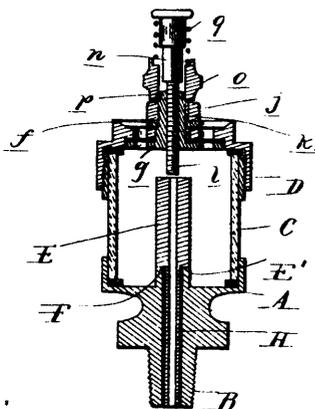
41699 Whittier, Champlon and Macfarlane's Nut Lock.



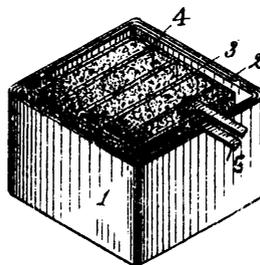
41701 Kemp and Forbes' Scolloping Attachment for Sewing Machines.



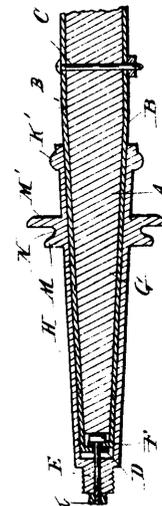
41702 Violet's Car Coupler.



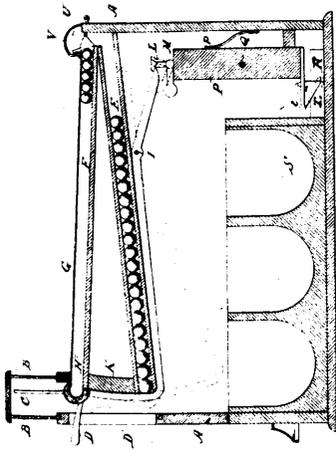
41703 Downes' Oil Cup.



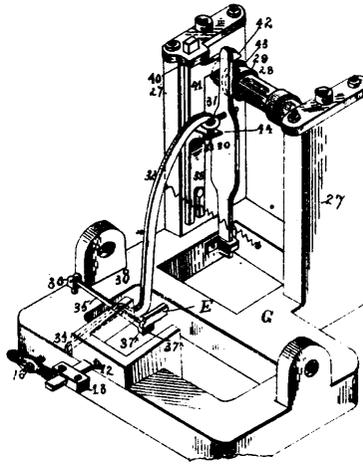
41704 Enholm's Galvanic Battery.



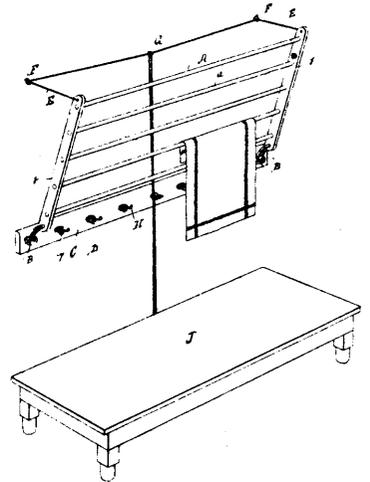
41705 Tyler's Wagon Axle.



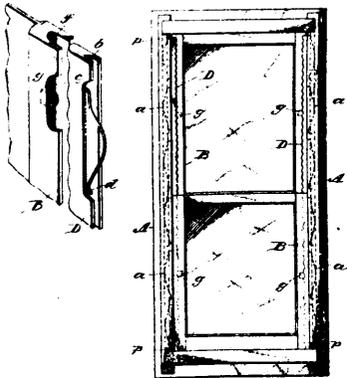
41706 Thompson's Cash Register and Indicator.



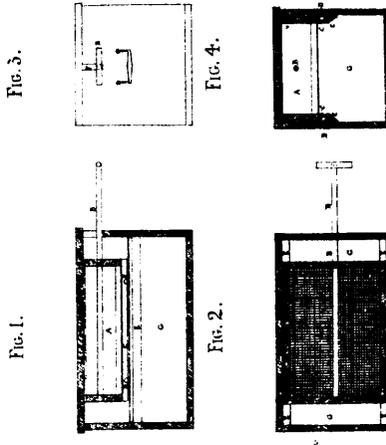
41707 Houghton's Nail Machine.



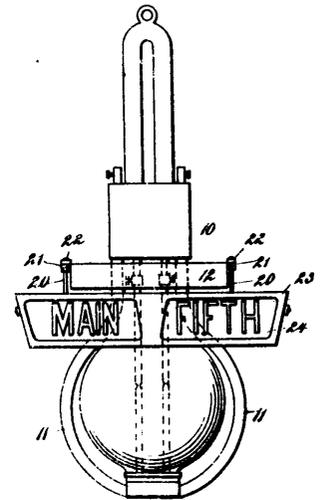
41708 Wells' Clothes Horse.



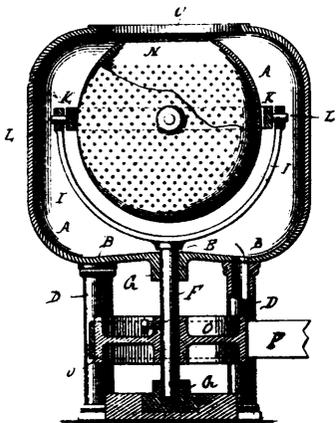
41709 Blain's Window.



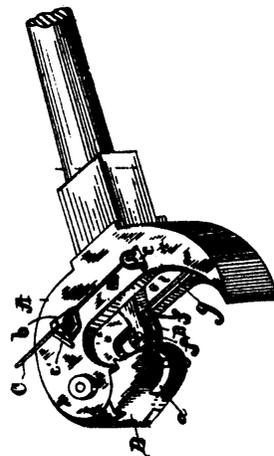
41710 Buckley and Leeds' Cinder Sifter and Ash Box Combined.



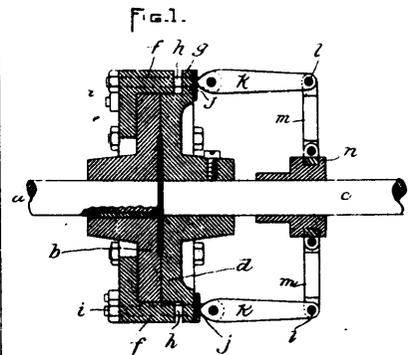
41711 Clay's Sign for Electric Lamps.



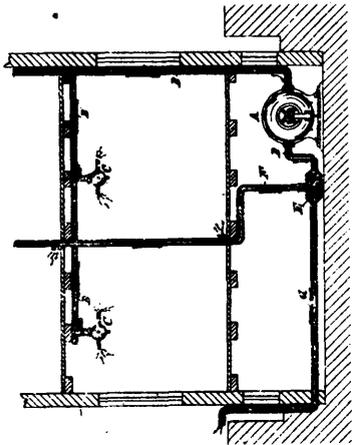
41712 Johnson and Mitchell's Centrifugal Extractor.



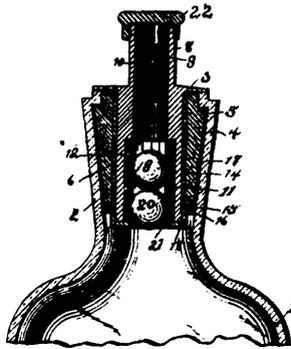
41713 Allen's Car Coupler.



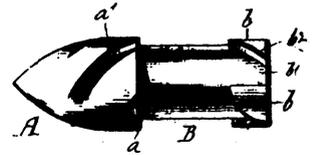
41714 Lesperance and Hemenway's Friction Clutch Mechanism.



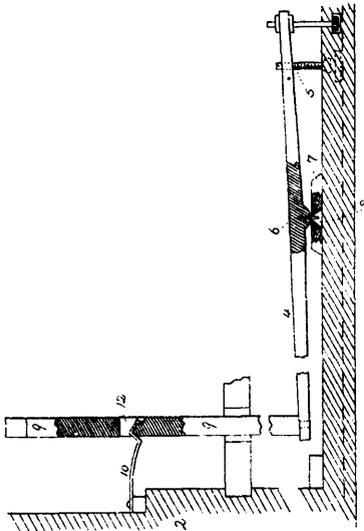
41715 Ruble's Ventilating Plants.



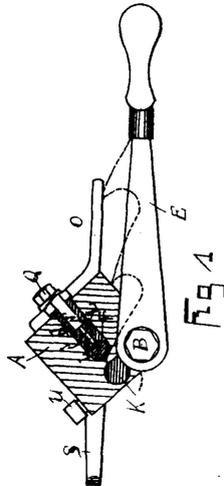
41716 Crimmel's Bottle Stopper.



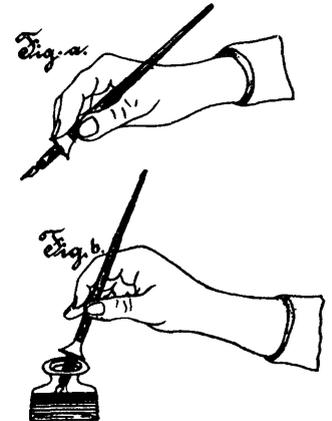
41717 Russell's Projectile.



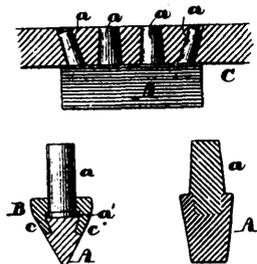
41718 Ivers' Pedal Stick.



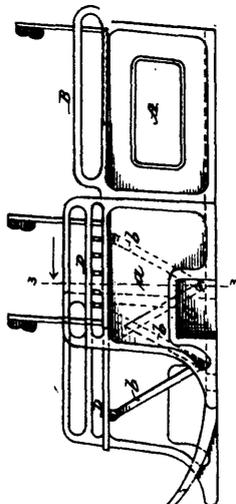
41719 Williamson's Saw Swage.



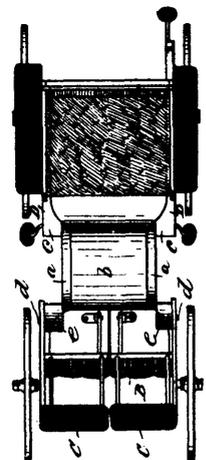
41720 Borschel's Guard for Pen-holders.



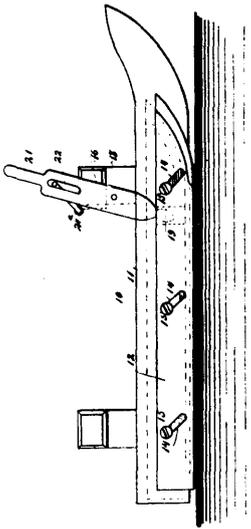
41721 Wemple's Horse-shoe Calk.



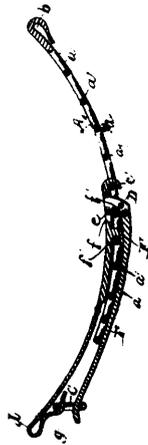
41722 Parry's Carriage.



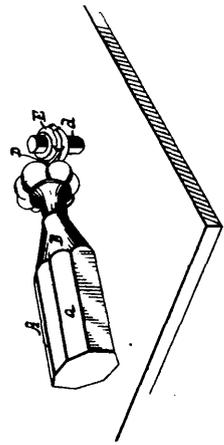
41723 Parry's Carriage.



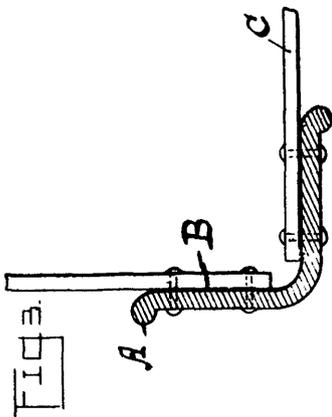
41724 Hartling's Sleigh Guard.



41725 Ingells' Hame Fastener.



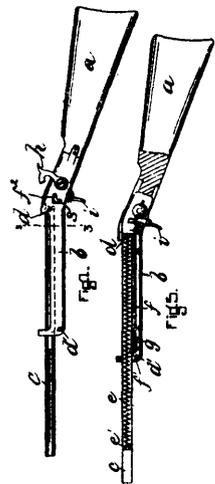
41726 Hess' Apparatus for adjustably Wooden Knobs during their Ornamentation.



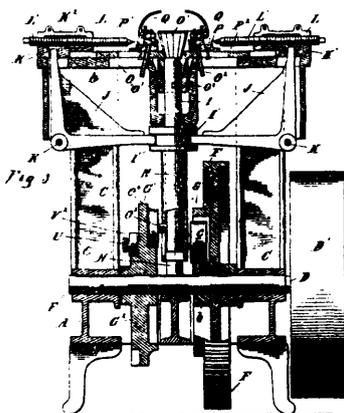
41727 Luger's Wind Mill Tower.



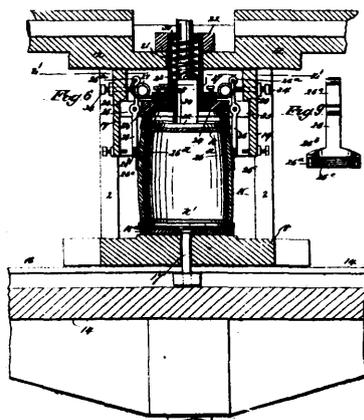
41728 Bartholomew's Signal for Railways.



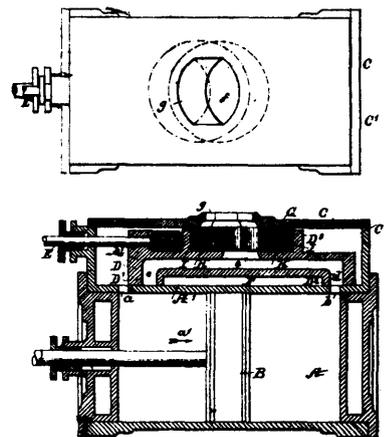
41729 Porter's Toy Gun.



41730 Gendron's Tire Punching Machine.



41731 Cook's Machine for Hooping and Heading Kegs.



41732 Parker and Clark's Balance Slide Valve.

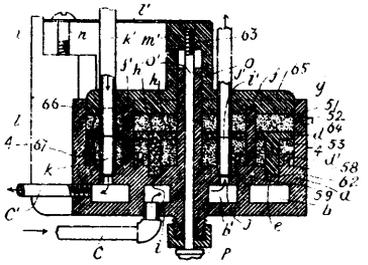
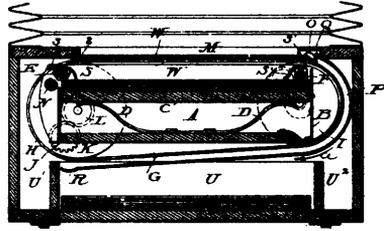
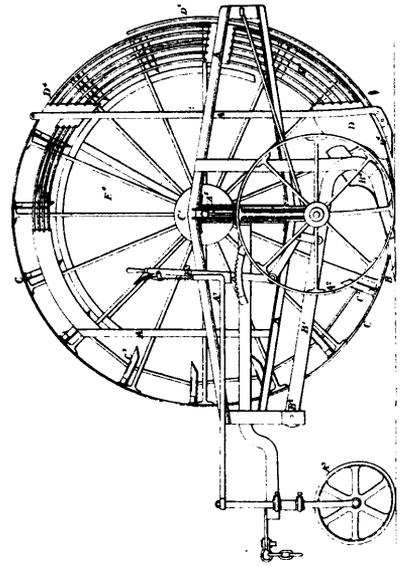


Fig. 3.

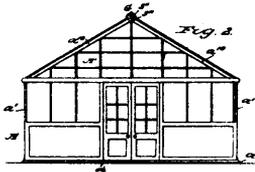
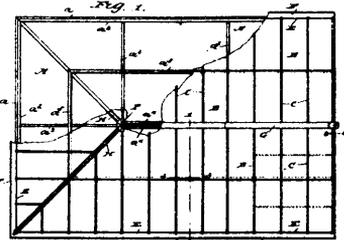
41733 Morgan and Adams' Concentric Steam Joint.



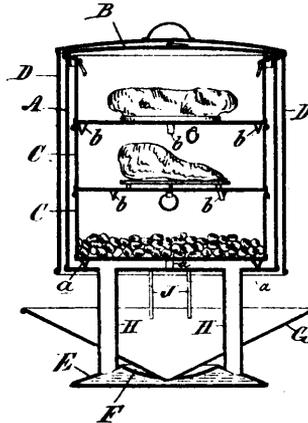
41734 Milburn's Film Holder for Photographic Cameras.



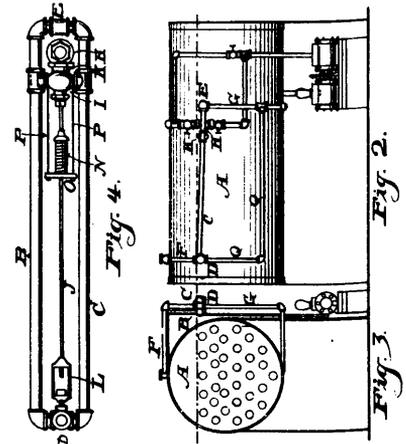
41735 Cocker's Potato Harvester.



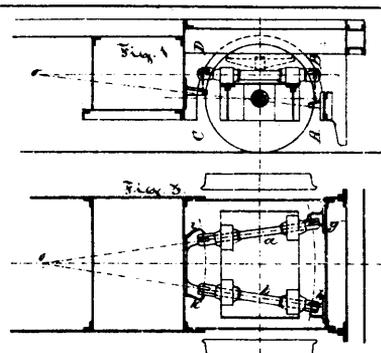
41736 Coulson's Glazed Structure.



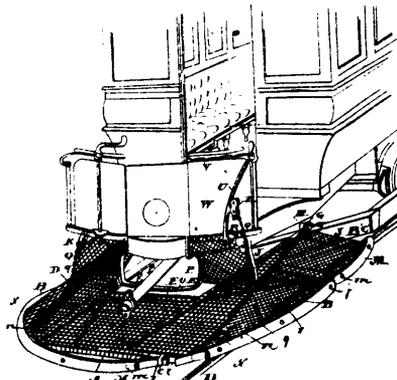
41737 Brotherston's Steam Cooker.



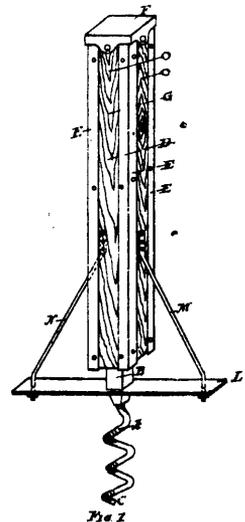
41738 Thomas' Feed Water Regulator.



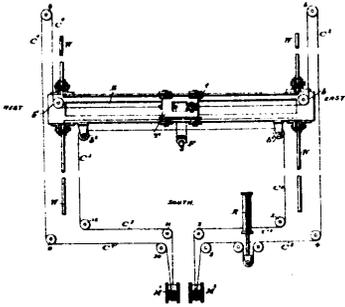
41739 Lentz's Bogie Frame for Locomotive Engines.



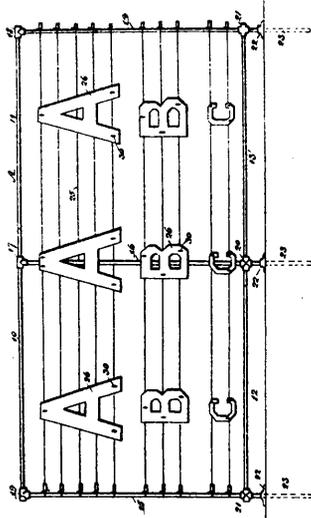
41740 Horne's Car Life Saving Fender.



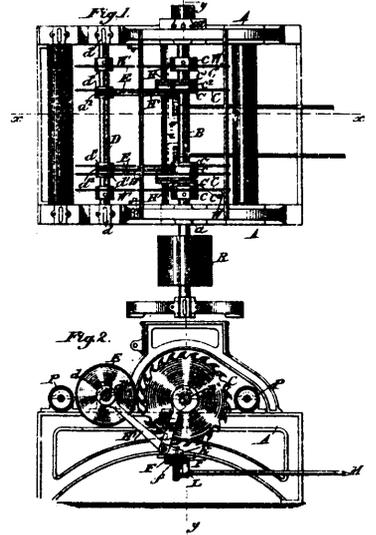
41741 Cable's Earth Screw for Posts.



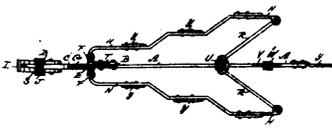
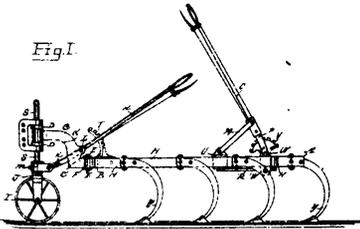
41742 Dixon's Travelling Crane.



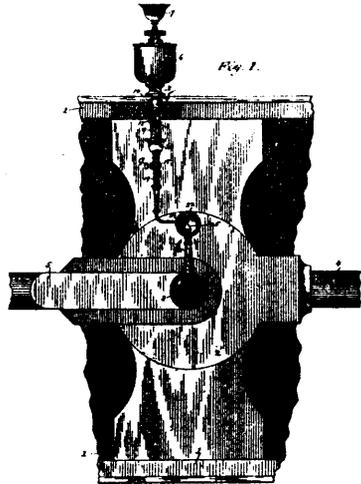
41743 Tunison's Bulletin Board.



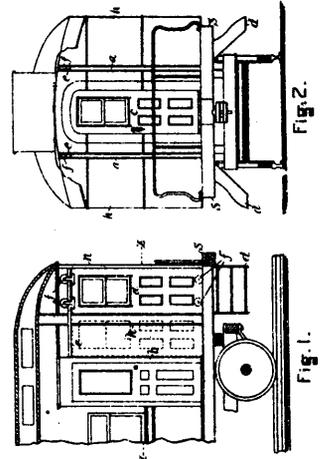
41744 Rodgers' Machine for Sawing Lumber.



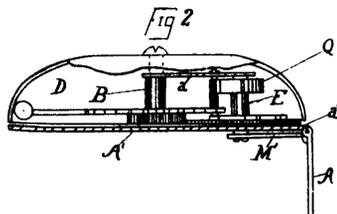
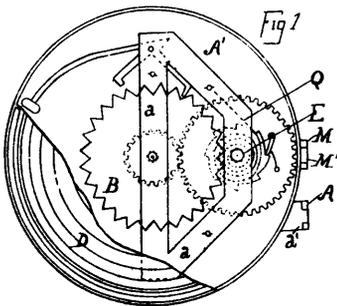
41745 Copp, McCreath and Challen's Cultivator.



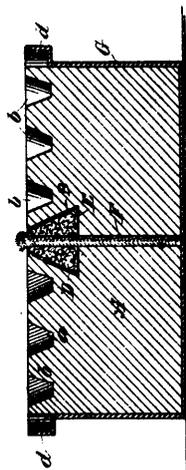
41746 Clark's Lubricator.



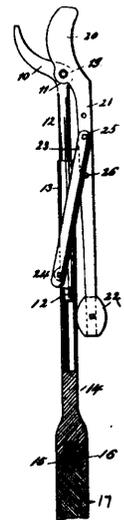
41747 Howard's Gate for Railway Car Platforms.



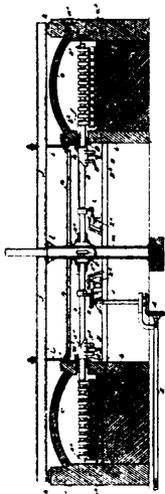
41748 Davis' Burglar Alarm.



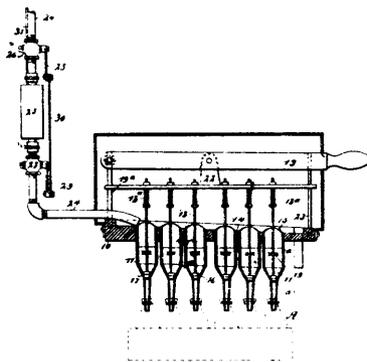
41749 Morse and Bourne's Sulphur Candle.



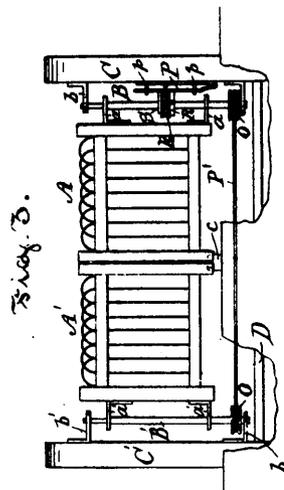
41750 Kern's Pruning Shears.



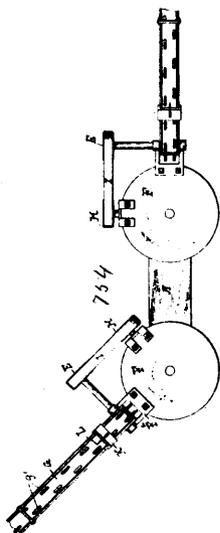
41751 Pearce's Ore Roasting Furnace.



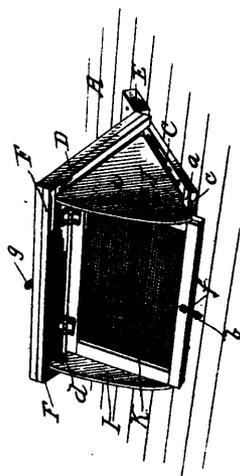
41752 Jackson's Bottle Filling Apparatus.



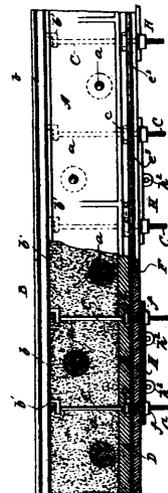
41753 Robillard's Gate Opening and Closing Device.



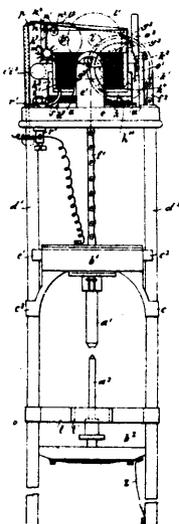
41754 Booth's Bundle Carrier and Band Cutter for Threshing Machines.



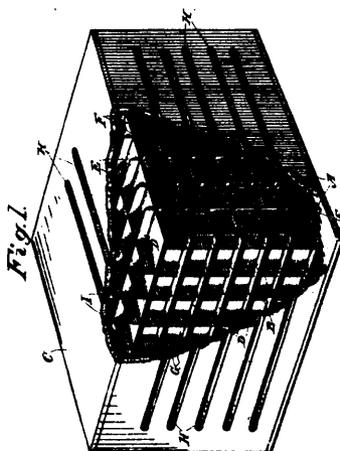
41755 Earl's Ventilator and Refrigerator Car.



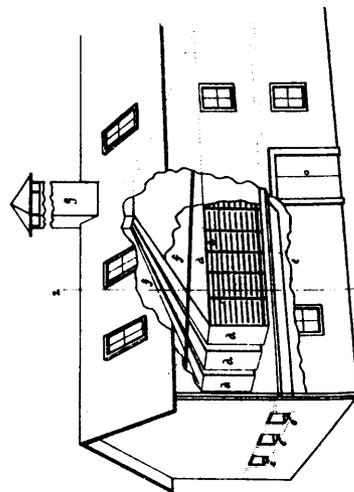
41756 Prun's Electric Railway.



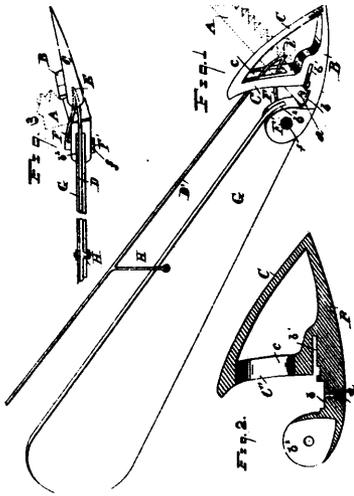
41757 Hansen's Electric Arc Lamp.



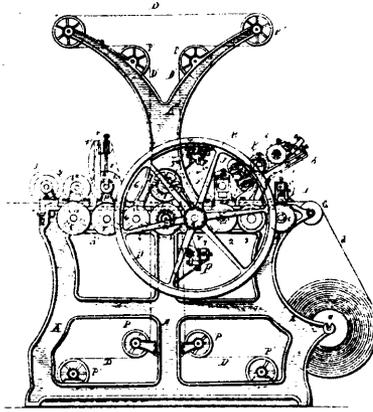
41758 Stevens' Fruit Carrier.



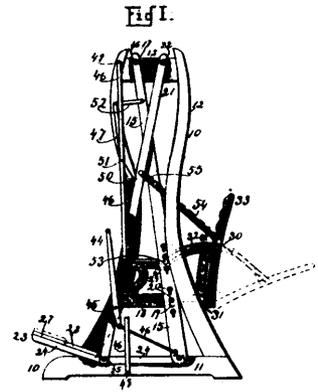
41759 Whitman's Process of Drying and Curing Fish.



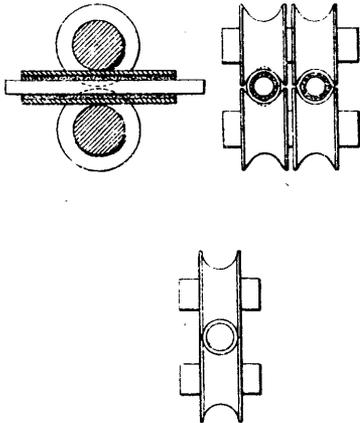
41760 Schnett's Divider for Mowing Machines.



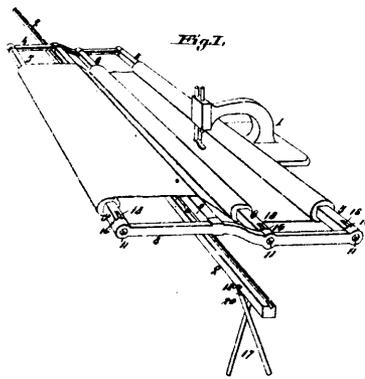
41761 McDowell's Printing Machine.



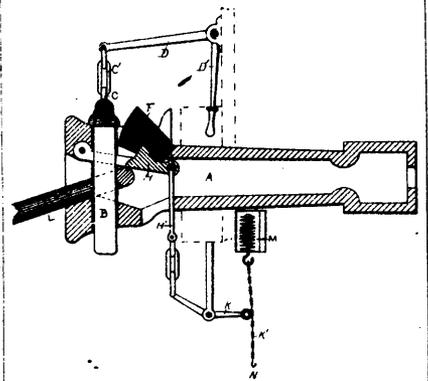
41762 Anvil's Oscillating Chair.



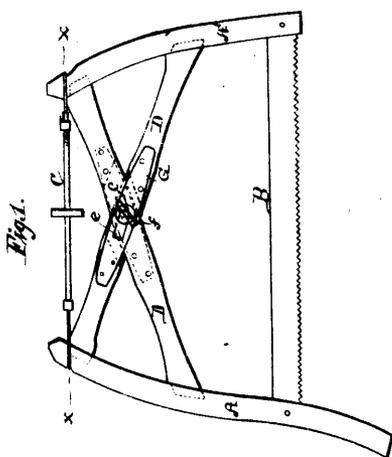
41763 Everson, Williams and Bissell's Mode of Cold Rolling Tubes.



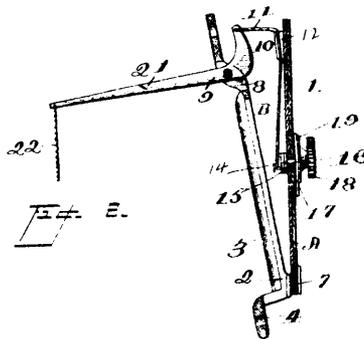
41764 Davis' Quilting Attachment for Sewing Machines.



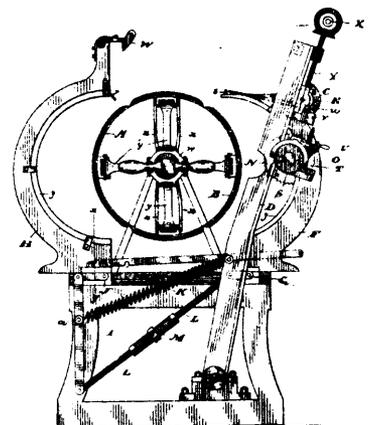
41765 De Roberts' Car Coupler.



41766 Woodring's Buck Saw.

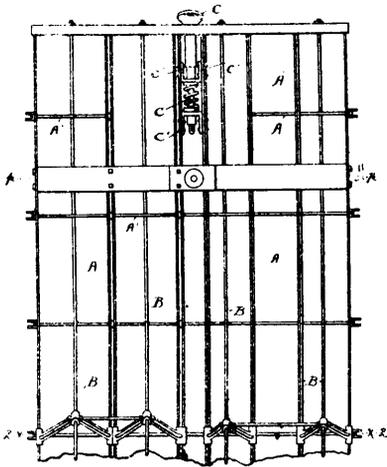


41767 Howard's Draft Regulator

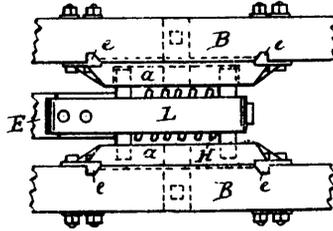


41768 Vale's Barrel-making Machine.

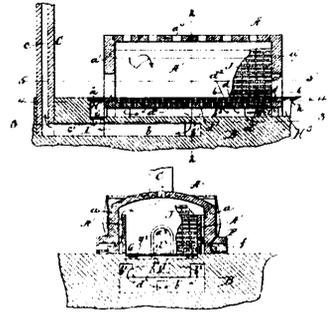
Fig. 1



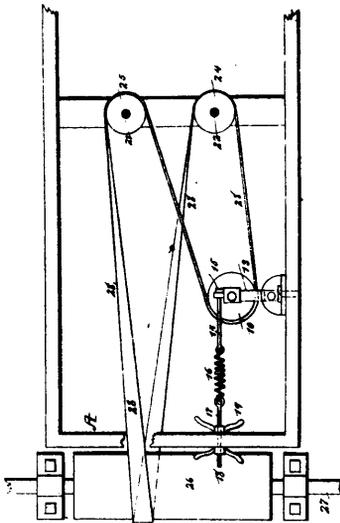
41769 Pennock's Metallic Car.



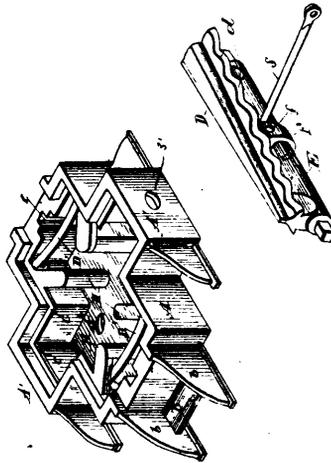
41770 Hinson's Draw Bar and Spring.



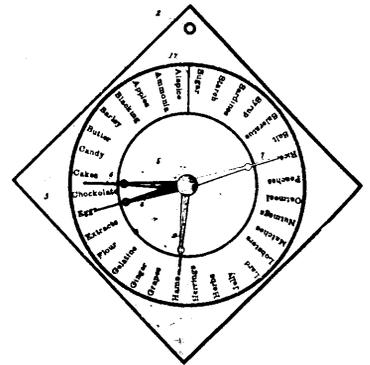
41771 Reant's Brick Kiln.



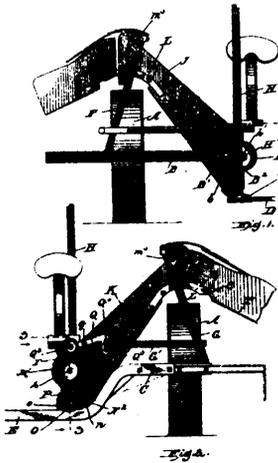
41772 Noble and Hensley's Belt Tightener.



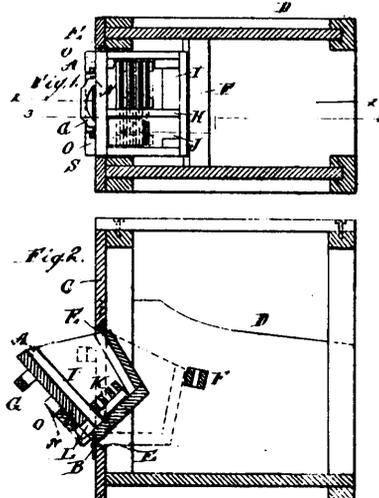
41773 Porter's Derailing Device.



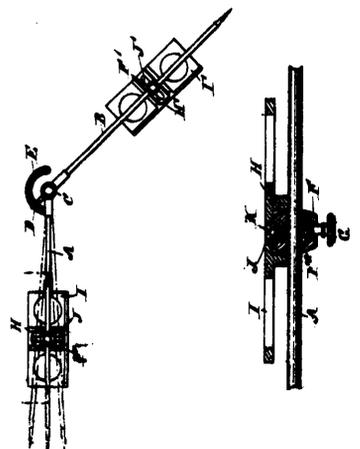
41774 Striker and McBurney's House-keeper's Memorandum.



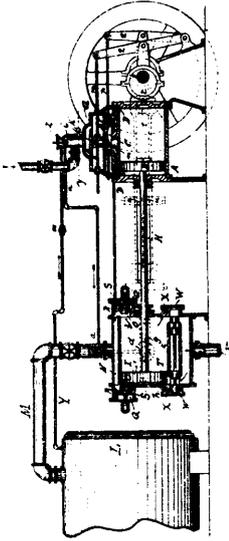
41775 Kane's Grain Harvester.



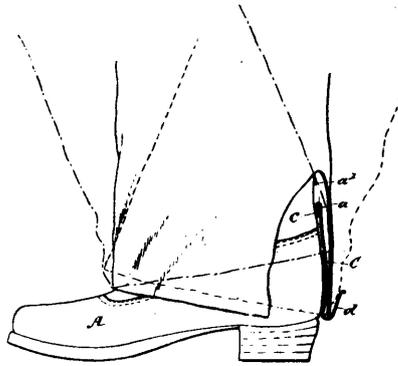
41776 Vender's Manger.



41777 Caldwell's Stair Bevelling Instrument.



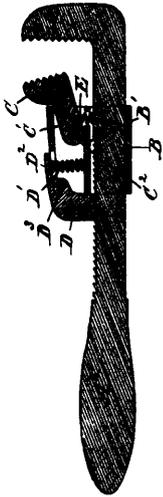
41778 Farrell's Air Compressor.



41779 Lafontaine's Trousers Support.



41780 Patterson's Jar Fastening.



41781 Stanley's Pipe Wrench.