

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Covers damaged/
Couverture endommagée

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Cover title missing/
Le titre de couverture manque

Coloured maps/
Cartes géographiques en couleur

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Bound with other material/
Relié avec d'autres documents

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Additional comments: / Various pagings.
Commentaires supplémentaires:

Coloured pages/
Pages de couleur

Pages damaged/
Pages endommagées

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Pages detached/
Pages détachées

Showthrough/
Transparence

Quality of print varies/
Qualité inégale de l'impression

Continuous pagination/
Pagination continue

Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

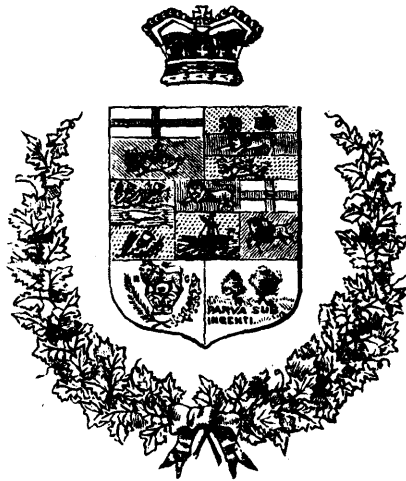
Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

| | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| 10X | 14X | 18X | 22X | 26X | 30X |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 12X | 16X | 20X | 24X | 28X | 32X |

THE
CANADIAN PATENT OFFICE
RECORD.



VOLUME XI.

OTTAWA:
PUBLISHED BY AUTHORITY.

1883.



VOLUME XI, 1883.-INDEX.

INDEX TO PATENTEES.

| | |
|---|----------------|
| Abbott, T. G., et al., metallic packing for piston rods, etc | 17,287 |
| Abell, A., sewing machines | 16,931 |
| Aborn, J., filtering faucet | 17,944 |
| Adams, A. S., tongs | 16,751 |
| " H. R., et al., boots and shoes | 17,164 |
| " J., knitting machines | 16,230 |
| " P., et al., toy savings bank | 16,564 |
| Addison, W., cork drawers | 16,163 |
| " " knife for peeling potatoes | 17,284 |
| " " machine for peeling and slicing potatoes | 17,423 |
| " " et al., fire-escapes | 16,412 |
| Ahearn, T., fire alarm telegraph | 17,669 |
| " " watchman's detector | 18,042 |
| Ahlert, W. F., J. P. and J. G., velocipedes | 17,061 |
| Aiken, G. E., et al., combined header, thrasher and separator | 17,178 |
| Ainley, T. E., machinery and apparatus for feeding, wool to carding engines | 17,441 |
| Ainsworth, G. W., clothes drier | 16,824 |
| Akin, W., advertising devices | 16,543 |
| Alden, H. P., et al., berth for sleeping cars | 17,104 |
| Aldrich, F. E., rubber cloth | 17,625 |
| Alexander, J., ice cream refrigerator | 17,946 |
| " " lager beer refrigerator | 17,947 |
| " " refrigerator | 17,657 |
| Allard, P., wheelbarrows | 16,842 |
| Allen, C. W., et al., billiard tables | 16,210 |
| " H. J., mince pies | 16,609 |
| " J., lubricator | 17,185 |
| " " vehicles | 16,836 |
| " M. J., process of making whiskey | 17,590 |
| " S. M., paper pulp | 16,435, 16,436 |
| Alshuler, M., tag fastener | 16,022 |
| Altenbrand, H., malt houses | 16,279 |
| Althous, M. J., clothes wringers | 18,055 |
| Alton, G. H., button setting instrument | 17,416 |
| Amazeen, C., skiving machines | 16,634 |
| Ambrose, T. H., car coupler | 17,658 |
| American (The) Chemical Co., apparatus for evaporating brines | 17,358 |
| American (The) Filter Co., water filters | 16,312 |
| " " Freight Car Heating Co., heating apparatus | 16,486 |
| Amsden, C. M., sleds and sleighs | 15,914 |
| Amyot, J. B., asbestos impervious to water | 17,148 |
| Ansel, A. D., et al., process for extracting metals from their ores | 18,004 |
| Anderson, C., plow | 17,519 |
| " C. H., et al., neck ties | 16,981 |
| " D., varying the gauge of the wheels of rolling stock | 16,035 |
| " J., moulding machines | 16,088 |
| " J. C., et al., nut locks | 17,295 |
| " L., et al., car couplings | 17,172 |
| Andrews, E., board measures | 16,347 |
| " " saws | 17,230 |
| " E. F., brick machines | 16,902 |
| " E. W., adjustable rockers | 16,378 |

| | |
|---|--------|
| Andrews, J. D. K., dynamo electric and electro dynamic machine | 17,863 |
| " L. A., et al., smelting furnace | 16,738 |
| Ansley, A., cultivator and potato digger | 16,803 |
| Anthony, C. & H. T. & Co., photographic camera box | 17,804 |
| " E. H. & Co., photographic camera box | 17,768 |
| " E. W., cooking stoves | 16,299 |
| " E. W., heating stoves | 16,458 |
| Appleby, J. F., grain binders | 16,069 |
| Applegate, S. S., awaking devices | 16,779 |
| Appleman, A. R., seed cleaner | 17,578 |
| Appelquist, F., plows | 17,769 |
| Archbold, G., paper pulp | 17,207 |
| Armant, E., et al., carriage gear | 16,273 |
| " " punching and cutting machine | 16,380 |
| Armstrong, A. H., car couplings | 16,893 |
| " J. B., vehicles | 16,784 |
| Arnot, O. P., et al., sled brake | 17,977 |
| Arthur, A. A., et al., fence posts | 17,129 |
| Asbury, T., et al., gas engines | 16,261 |
| Asbury, T., et al., gas motor engines | 16,008 |
| Asbury, T. H., et al., sad irons | 15,942 |
| Ash, M. H., bob sleigh bolsters | 16,286 |
| Ashley, H., spring waggons | 15,948 |
| " " et al., tubular axle | 17,515 |
| Ashworth, E., yarn winding machines | 16,093 |
| Asselstine, E. M., recording devices | 17,241 |
| Atherton, A. T., condenser | 16,971 |
| Atkinson, A., manufacture of starch | 16,701 |
| Atwater, H. W., wrench | 18,046 |
| " " et al., drying apparatus | 16,317 |
| Attwell, E. B., sash fasteners | 17,072 |
| Atwood (The) Railway Wheel Co., car couplings | 15,990 |
| Authors, J., sewing machines | 17,586 |
| Axford, F. J. H., vehicle | 17,417 |
| Ayres, F. C., snap hooks | 17,370 |
| Ayrton, U. E., construction and government of electro motors, &c. | 17,712 |
| Bacon, H. S., et al., nailing machines | 17,848 |
| " H. S., et al., mechanism for forming tubular wire | 18,033 |
| Badger, J., window guards | 16,390 |
| Baer, G. W., brackets | 17,045 |
| Balley, C. E., hand vise and wrench | 18,121 |
| " D., bee hive | 17,871 |
| " H. and W. H., wood graining composition | 18,195 |
| " J. G., et al., tricycle | 17,851 |
| " J. W., water filters | 16,080 |
| " B. S., machine for sharpening horse shoes | 16,646 |
| " W., et al., grain binders | 18,207 |
| " W. H., spikes | 15,930 |
| Bain, F., controlling an engraving tool | 18,186 |
| " " electric generators | 18,200 |
| " R. et al., sewer traps | 16,019 |
| " (The) Electric Co., controlling an engraving tool | 18,186 |
| " " " electric generators | 18,200 |
| Baird, S. M. & J. M., lifting jacks | 16,240 |
| Baker, A., switch stand | 17,596 |
| " A. L. T. H. and C. M., cattle ties | 16,120 |
| " E. B., photographic camera box | 17,768 |
| " G. W., sewing machine | 18,215 |
| " H. H., friction matches | 16,544 |
| " J. G., sad iron grinders | 15,946 |

| | | | | |
|--|--------|--------|--|--------|
| Baker, J. G., et al, sad irons..... | 15,942 | 15,943 | Bell, U., gas burners..... | 17,693 |
| " J. S., fertilizer distributors..... | 15,987 | 15,987 | Bellavance, E., horizontal sectional boiler..... | 18,130 |
| " (The) Manufacturing Co., hand rakes..... | 16,097 | 16,097 | Benham, E. B., hydraulic motors..... | 17,730 |
| " W. A., waggon yokes..... | 16,894 | 16,894 | Bennett, C. H., saw frames..... | 16,039 |
| Baldwin, A. W., et al., car coupler..... | 17,912 | 17,912 | " " and J. W., stencil holders..... | 17,055 |
| Bales, T. M., et al., cockle machines..... | 16,006 | 16,006 | " E. and J., fanning mills..... | 16,113 |
| Bali, C. A., et al., spark arresters..... | 16,447 | 16,447 | " J. W., et al., cases for preserving food..... | 16,381 |
| " C. E., dynamo electric machine..... | 18,020 | 18,020 | Bennis, H. H., lathe for turning lasts..... | 17,368 |
| " " electric arc lamps..... | 17,127 | 17,127 | Benson, B. S., plough..... | 17,783 |
| " R. E., dynamo electric machines..... | 17,361 | 17,361 | Berger, H., pillows, bolsters, &c..... | 15,910 |
| Banks, C. M., sewing machine..... | 18,157 | 18,201 | Berger, L. and W. H., stovepipe dampers..... | 16,057 |
| " (The) Button-hole Machine Co., sewing machine..... | 18,157 | 18,201 | Bernstein, A., galvanic elements..... | 17,403 |
| " W. E., et al., horse shoes..... | 16,194 | 16,195 | Berolzheimer, H., holders for knives, &c..... | 17,986 |
| Banning, H. A., car brakes..... | 16,358 | 16,358 | Berret, J. G., et al., sash holder..... | 17,938 |
| Barber, G. M., et al., drum stoves..... | 16,201 | 16,201 | Bessette, S., fanning mill..... | 17,874 |
| Barden, A., grain elevators..... | 17,813 | 17,813 | Best, M. L., vapour burners..... | 17,349 |
| Barfoot, T. et al., printing ink..... | 17,065 | 17,065 | Beuthner, E. W., et al., ammonia engine..... | 17,920 |
| Baril, J. E., meat block..... | 17,706 | 17,706 | Bickie, H. J., et al., harness pads..... | 16,211 |
| Barker, E. B., camera box..... | 17,804 | 17,804 | Bickmas, A. P., et al., car coupler..... | 17,663 |
| " J. combined rotary harrow stalk cutter or roller..... | 17,186 | 17,186 | Bidleman, R. M., et al., petroleum burners..... | 16,227 |
| " B., process of and apparatus for extracting gold and silver from their ores..... | 17,582 | 17,582 | Bigelow, E., reeving gear..... | 16,606 |
| Barksdale, A., folding barrels..... | 16,522 | 16,522 | Bigford, S. C., combination wood work..... | 17,955 |
| Barland, T., bridge girders and beams..... | 17,782 | 17,782 | Biggers, H. E., et al., burnishing machines..... | 17,799 |
| Barnard, E., halters..... | 16,139 | 16,139 | Bignell, E., locomotive ash pan..... | 18,181 |
| " " surcingle..... | 16,755 | 16,755 | Bigney, R., car couplers..... | 16,214 |
| " S., emery, or corundum wheel..... | 17,555 | 17,555 | Bill, C. H., crayon mould machines..... | 16,764 |
| Barnes, J. T., road carts..... | 16,713 | 16,713 | Billings, G. W. W., grain drills..... | 16,728 |
| " J. W., tonic medicine..... | 16,614 | 16,614 | Billington, T. E., rail joint and lock..... | 18,174 |
| " W. C., eye glasses..... | 17,834 | 17,834 | Binette, H., et al., bricks..... | 16,128 |
| Barney, N., dumping boat..... | 16,593 | 17,536 | Bingham, N. W., et al., boots and shoes..... | 17,164 |
| " (The) Dumping Coat Co., dumping boat..... | 16,593 | 17,536 | Birch, J. E., appliance for traction engines..... | 17,424 |
| Barnhart, H. P., et al., preserving milk..... | 18,094 | 18,094 | Bird, P. E., machine for making pitchforks..... | 17,699 |
| Barnum, (The) E. T. Wire and Iron Works Co., fence iron..... | 17,965 | 17,965 | Bishop, F. W., vehicle pole..... | 17,511 |
| Barnum (The E. T.) Wire and Iron Works, lunch boxes..... | 16,068 | 16,068 | " driving post..... | 18,084 |
| " " " " wire cloths..... | 16,937 | 16,937 | Blackhall, E. W., ruling machine..... | 17,498 |
| Barrett, A. M., spool and thimble holder..... | 16,706 | 16,706 | Blackman, A. A. E. and H., car trucks..... | 16,310 |
| " C. et al, fire escape..... | 17,901 | 17,901 | Blackman, J. M., et al., ventilators..... | 17,180 |
| " F. X., et al., nut lock..... | 18,007 | 18,007 | Blackmer, N. B., air pumps..... | 16,714 |
| " J., pump valves..... | 17,208 | 17,668 | Blain, D., mining machine..... | 17,496 |
| Barry, M., running gears for vehicles..... | 17,761 | 17,761 | " J. H. and H. L., et al., harvesters..... | 16,936 |
| Bartholomew, G. E., et al., carriage gear..... | 16,273 | 16,273 | Blais, F. X., creaming vessels..... | 16,350 |
| Bartlett, J., seed drill distributors..... | 16,087 | 16,492 | Blake, W. H., tub and box fastener..... | 17,206 |
| Bartram, W., bed bottoms..... | 16,046 | 16,046 | Blaker, J. D., axe handles..... | 16,584 |
| Basford, S., tire tighteners..... | 16,915 | 16,915 | Blanchard, T., speed indicators..... | 16,802 |
| Bass, J. H., et al., mowing machines..... | 17,298 | 17,298 | Bleoo, J. H., et al., system of laying electrical conductors..... | 17,216 |
| " " Pitman connections for mowers..... | 17,993 | 17,993 | Blessing, J. H., check valve..... | 17,685 |
| Bassett, A., et al., bench vices..... | 18,118 | 18,118 | " " straightway check valve..... | 17,686 |
| " E., dovetailing machines..... | 16,295 | 16,295 | " " valves..... | 16,922 |
| " E., et al., conveyors..... | 18,187 | 18,187 | " " valves and cocks..... | 16,903 |
| Bassler, J., riding saddles..... | 16,951 | 16,951 | " " et al., friction clutches..... | 16,745 |
| Bates, E. P., fire pot for boilers..... | 17,463 | 17,463 | Blighton, D. F., bolt locks..... | 17,155 |
| " J., manual powers..... | 17,039 | 17,039 | " F., bolt locks..... | 18,071 |
| Baujard, E. O., process for manufg glycerine..... | 17,150 | 17,150 | " Van R. W., nut locks..... | 18,125 |
| Baxter, M. L., telephonic receiver..... | 17,096 | 17,096 | Blocher, J. C., car couplings..... | 17,274 |
| " " telephonic transmitter..... | 17,095 | 17,095 | Blonquist, C. A., et al., wrenches..... | 17,806 |
| " T., ice tongs..... | 17,434 | 17,434 | Bloom, J. E., et al., means of regulating the supply of water..... | 16,857 |
| Bayliss, B., smelting furnaces..... | 16,929 | 16,929 | Blumenberg, J. R., vapour generators and motors, &c..... | 17,406 |
| Beach, A. J., waggon gear..... | 16,324 | 16,324 | " " et al., vapour generator..... | 17,283 |
| Beacock, D. V., dental plate..... | 16,736 | 16,736 | " " " vapour generators and burners..... | 17,261 |
| Beadle, G., fare boxes..... | 16,146 | 16,146 | Bock, J., et al., machines for dressing hoops..... | 16,265 |
| Beam, J. F., et al., washing machines..... | 17,405 | 17,405 | Boeckh, C., boot brush..... | 17,845 |
| Bean, J., wheelbarrow..... | 17,486 | 17,486 | Bolles, R. S., et al., vehicle top trimming..... | 16,473 |
| Beard C., et al., car brake..... | 17,904 | 17,904 | Bollinger, C., horse rakes..... | 16,718 |
| Bears, E., horse hobble..... | 17,879 | 17,879 | Bolton, G. S., et al., nut fasteners..... | 17,937 |
| Beasley, I., smoke consuming furnace..... | 17,010 | 17,010 | Bond, H., heel burnishing tools..... | 16,849 |
| Beauchemin, A. S., spinning wheels..... | 17,254 | 17,254 | Bonhack, C. F., match machines..... | 17,250 |
| " J. E., horse rakes..... | 16,382 | 16,382 | Booker, J. T., et al., sash fasteners..... | 16,099 |
| " P., horse rake..... | 16,138 | 16,138 | Booth, H. W., cinder sifter..... | 17,872 |
| Beckert, A., unloading machines..... | 16,551 | 16,551 | Booth, R., et al., fog alarms..... | 16,464 |
| Bedford, L. N., car couplings..... | 16,953 | 16,953 | Borgesen, B. G., lady's work table..... | 17,702 |
| Beecher, G. M., cooking stoves..... | 16,015 | 16,015 | Borland, W. A., apparatus for fastening buttons..... | 16,460 |
| Beem, M., et al., drive chain..... | 17,136 | 17,136 | Borrett, J., boot and shoe plate..... | 18,189 |
| Beeman, J. S., electric current governor..... | 18,204 | 18,204 | Bortree, M. K., corset and shirt supporter..... | 16,269 |
| " " secondary batteries..... | 16,828 | 16,828 | Bothwell, H. R., et al., stock cars..... | 16,255 |
| " " et al., electric current meters..... | 18,039 | 18,039 | Boucher, E., heating furnaces..... | 16,055 |
| " " regulator batteries..... | 16,688 | 16,688 | Boulder, R. G., et al., tinner's tools..... | 17,903 |
| Behr, A., crystallized anhydride..... | 15,970 | 15,970 | Boultonhouse, W. T., soldering furnaces..... | 18,191 |
| " " grape sugar..... | 15,971 | 15,971 | Boulton, J. B. D., fishing reels..... | 15,874 |
| Bell, C. E., nut locks..... | 16,136 | 16,136 | Bourke, M., boat lowering apparatus..... | 15,906 |
| Bell, J., binding machine..... | 17,929 | 17,929 | Boutin, B., et al., creamers..... | 16,835 |
| Bell, J., reapers..... | 16,208 | 16,208 | Bowden, J., button fasteners..... | 18,219 |
| " J. W., watch hands..... | 15,956 | 15,956 | Bowker, W., cleansing saws..... | 17,381 |
| " S. B., cultivator ploughs..... | 18,176 | 18,176 | " " et al., sawing machinery..... | 16,862 |
| " T. J., leakage detecting apparatus..... | 16,400 | 16,400 | Bowman, W. H., et al., air buffer for cars..... | 16,555 |
| | | | Bowsher, N. P., speed indicator..... | 17,783 |
| | | | Boynton, A. & E. M., saws..... | 16,585 |

| | | | |
|---|--------|--|---------------|
| Boynton, C. M., et al., rack for umbrellas | 17,960 | Burkholder, A., grain cleaner..... | 18,044 |
| " E. M., cross-cut saws..... | 16,399 | " U., thrashing machines..... | 16,665 |
| " " saw files..... | 16,531 | Burley, F. G., saddles for bicycles..... | 16,368 |
| " " saw handles..... | 16,532 | Burlingame, O. R., foot rest for pianos..... | 17,709 |
| Bradley, J., knitting machines..... | 16,941 | Burnett, J., steam boilers..... | 17,646 |
| Bradshaw, E., window sash balances..... | 17,552 | Burnham, L. G., et al., bracket pieces..... | 16,483 |
| Brainard, A. H., gear cutting machines..... | 16,373 | Burns, A. B., dry hop yeast..... | 16,219 |
| " C. B., wire barbs for fences..... | 16,171 | " E. J., car couplings..... | 16,527 |
| Brake, P., cooking and heating range..... | 17,124 | " J., club foot apparatus..... | 17,961 |
| " " cooking ranges..... | 16,294 | Burr, A. J., roller dredgers..... | 16,351 |
| Bramer, F., mowing machines..... | 17,404 | " R. D., gloves..... | 16,474 |
| " " et al., harvesters..... | 16,337 | Burrell, D. H., artificial cream..... | 16,096 |
| Brandon, F. L., pitchforks..... | 16,921 | " " et al., hoop cutters..... | 16,876 |
| Brandy, J., felt boots, shoes and stocking..... | 17,217 | " " " milk vats..... | 16,875 |
| Branson, J. H. and B., double-acting pumps..... | 15,367 | Burrows, W. C., churns..... | 16,678 |
| Braun, J. L., tanning apparatus..... | 17,854 | " W. F., machines for applying barbs to fence wire..... | 17,070 |
| Braunfeld, H. E., fire escapes..... | 16,829 | Burs, W., axle turning machine..... | 16,762 |
| Bray, J., et al., paper matting or carpet..... | 17,858 | Burson, W. B., knot-tyer for grain binder..... | 18,010 |
| " " stove pipe shelves..... | 15,961 | Burt, J., charcoal furnaces..... | 17,327 |
| Brayton, J. T., et al., thermometers..... | 16,301 | Burtin, G. D., roller skates..... | 16,855 |
| Brayton, R., et al., spark crusters..... | 16,837 | " " stock car..... | 17,992 |
| Brayton (The) Petroleum Engine Co., hydro-carbon engine..... | 17,967 | Bury, R. A., et al., petroleum burners..... | 16,227 |
| Brecknell, R. D., self-closing gates..... | 17,770 | Bush, R. A., fire-escapes..... | 16,841 |
| Breer, C. H., apparatus for desiccating fatty matter..... | 18,006 | " T. J., interlocking bolts..... | 17,594 |
| Brenner, R., et al., lock nuts..... | 17,181 | Bushell, W., et al., oil presses..... | 17,098 |
| Breton, P. N., book protector..... | 17,601 | Bushorr, D. J., numbering machines..... | 18,119 |
| Bridges, J. E., et al., harness pads..... | 16,211 | Buskirk, T., et al., wrenches..... | 17,806 |
| Briggs, W. A. E. and J., weaving machinery..... | 16,207 | Butcher, B. P., tubular lanterns..... | 16,442 |
| " N. S., double action force pump..... | 17,832 | Butcher, W. W., swinging chair..... | 16,825 |
| Brillinger, S., et al., washing machines..... | 17,405 | Butterfield, G. F., air cushions for soles..... | 16,468 |
| Brisbois, M., wire stretchers..... | 17,017 | " J. C., et al., stamp mills..... | 18,168 |
| Britz, D., stoves..... | 16,625 | " S. K., bed spring connections..... | 18,058 |
| Brockett, L. H., paint..... | 16,147 | Butterworth, R., et al., vehicle top trimming..... | 16,473 |
| Brodie, W., et al., horse collars..... | 16,791 | Butter, T. H., et al., pretzel cutters..... | 17,244 |
| Bromer, A., metal washer..... | 17,714 | Buxton, A. St. C., et al., means regulating the supply of water..... | 16,857 |
| Brooke, J., fasteners and alarms..... | 15,877 | Byfield, J., knitting machines..... | 15,949 |
| " " ink stands..... | 16,704 | Bynell, A., cattle ties..... | 16,309 |
| Brooks, E. J., seats for car doors..... | 16,086 | Byron, E. L., root cutters..... | 17,125 |
| " J. W., heel trimming machine..... | 16,257 | Cadell, P., revolving screen..... | 17,599 |
| " M. B., pumps..... | 17,419 | Cain, H. C., ice floors..... | 16,448 |
| Brown, A. G., stop motions for spoolers..... | 16,192 | Calef, J. W., pipe wrenches..... | 16,416 |
| " B. C., shingle machines..... | 15,944 | Calkins, A. J., et al., carriage bodies..... | 17,371 |
| " B. F., sleigh knees..... | 15,884 | Callander, A., iron harrow..... | 17,524 |
| " G. A., sand-papering machine..... | 16,552 | Calo, C. G., horse collars..... | 16,657 |
| " G. W., pistons for engine indicators..... | 16,535 | Cameron, A., apparatus for screwing of sheet metal pipes..... | 17,629 |
| " M. W., preparing paper for copying purposes..... | 17,544 | Cameron, D., et al., shingle machine..... | 16,281 |
| " N. E., et al., butter trays..... | 17,581 | Campbell, D. H., sewing machines..... | 16,249 |
| " B. grain binders..... | 18,075 | " H. J., wine and cider press..... | 17,815 |
| " R. A. and J. F., brick and tile kilns..... | 16,622 | " I. G., catamenial sacks..... | 16,815 |
| " R. H., furnace for brazing and welding flue tubes..... | 17,410 | " J. H., annealing glass..... | 16,524 |
| " T., et al., stoves..... | 16,881 | " " and C. E., coating walls with flock..... | 17,551 |
| " T. D., clothes dryers..... | 18,161 | " W. M., pipe forming apparatus..... | 17,053 |
| " " spinning machines..... | 17,729 | Canada (The) Pulp Co., grinders for making wood paper pulp..... | 17,308 |
| " T. & S. N., hubs for vehicle wheels..... | 10,028 | Canada (The) Pulp Co., paper pulp..... | 16,435 16,436 |
| Browne, W. F., apparatus for desulphuring ores..... | 17,593 | Canda, F. E., journal bearings..... | 16,184 |
| " U. F., apparatus for evaporating liquids..... | 17,568 | Candler, C. H., et al., steam generators and furnaces..... | 16,234 |
| " " apparatus for generating gas..... | 17,674 | Canfield, A. D., car wheels..... | 15,915 |
| " " gas apparatus and process..... | 17,539 | Caniff, H., et al, tubular axle..... | 17,515 |
| " " manufacture of syrup and sugar..... | 17,598 | Canniff, J. U., and B. P., corsets..... | 17,760 |
| Bruce, J., stump extractors..... | 15,955 | Cant, J. H. and A., mortising machine..... | 17,604 |
| Brunet, P., snow plow..... | 17,529 | " " moulding machine..... | 17,605 |
| Brunswick (The) Antimony Co., method of producing golden sulphuret of antimony..... | 17,518 | Carlsen, H. M., binding pole and chain..... | 17,033 |
| Brunton, J. D., rock cutting apparatus..... | 16,604 | Carlyle, C. C., mowing machine..... | 17,469 |
| Bryant, J. M., et al., automatic window screen..... | 17,279 | Carment, W. H., wheel tires..... | 17,084 |
| Bryden, G., et al., horse shoes..... | 16,194 | Carney, T., et al, harvesters..... | 16,788 |
| Buchanan, M. T., compound for reducing the friction of cutting tools..... | 16,843 | Carpenter, B. B., harrows..... | 16,969 |
| Buchanan, M. T., hay elevator and carrier..... | 17,976 | " J., et al., barbed wire..... | 16,681 |
| Buck, F. N. and C. E., et al., bags for fertilizers..... | 16,012 | Carr, L., hames..... | 17,394 |
| " J. A., brick mould sanding machine..... | 16,597 | Carrick, W., ribbon or label holder for hats..... | 18,003 |
| " " stove and furnace grate..... | 16,675 | Carroll, E. A., horse shoe..... | 16,519 |
| Buckingham, F. H., boots..... | 17,457 | Carson, H. A., hoisting apparatus..... | 17,292 |
| Buckley, E. H., boots and shoes..... | 16,296 | " W. C., sash holders..... | 16,530 |
| Bugbee, G. W., et al., band saws..... | 16,733 | Carter, C. H., knitting machines..... | 18,060 |
| Buller, J., et al., grate fire-places..... | 17,300 | " E. D., et al., railway scrapers and levellers..... | 17,861 |
| Bulkley, J. L., et al., lifting jack..... | 17,550 | " H., ditching machine..... | 18,025 |
| Bullock, J. P., grain binders..... | 18,167 | " " weather strip..... | 17,166 |
| Bullock, W. R., et al., sulky ploughs..... | 16,367 | " J. R., et al., black leaf check book..... | 16,690 |
| Burbridge, R., et al., can soldering furnaces..... | 16,989 | " " memorandum books..... | 16,690 |
| Burbfield, J. R., hydro-carbon lamps..... | 16,763 | " W., overalls..... | 16,620 |
| " " tailor's stoves..... | 17,488 | " " et al., overalls..... | 16,955 |
| Burditt, W. F., trip for harvester rakes..... | 16,333 | Cartmell, R., pulp machine..... | 17,176 |
| Burke, A. W., paint or varnish..... | 16,471 | Cary, A., et al., barbed wire for fences..... | 18,105 |
| Burkhardt, G. F., malt drying apparatus..... | 16,446 | " J. H., electric signalling apparatus..... | 18,018 |
| Burkholder, A., spring motors..... | | Case, A. W., grinding attachment for valves..... | |

| | | | |
|---|--------|--|--------|
| Crippen, W., locomotive driving gear..... | 17,972 | Dennis, T. J., differential pulley block..... | 17,689 |
| Crispin, T., saw clamps..... | 15,985 | Denver, J. W., et al., railroad ties..... | 16,540 |
| Crocker, B. S., et al., nut lock..... | 17,446 | Derby, G. M., rock drills..... | 17,203 |
| " J. H., shower baths..... | 16,666 | Desjardins, M. R. F., heating apparatus..... | 16,640 |
| " R., et al., washing machines..... | 16,361 | Desmond (The) Injector Co., steam injectors..... | 17,812 |
| Crocket, J. D., nozzles for animals..... | 17,957 | Denson, J. C., cultivator ploughs..... | 18,176 |
| Croft, C. H., et al. smelting furnace..... | 16,738 | Dester, J. W., et al., lath bundling machine..... | 17,046 |
| Croft, H., power converters..... | 16,404 | Destrampes, F. X., unguent for external wounds..... | 16,102 |
| Crompton, F., corset..... | 17,940 | De Tray, F. H., et al., knock down tables..... | 16,797 |
| Crosby, A. A., sleighs..... | 16,289 | Deltmar, J. F., tool for expanding tubes..... | 15,197 |
| " vehicles..... | 16,549 | Deuther, L. A., backs for fixtures..... | 17,948 |
| " G. H., steam engine indicators..... | 16,541 | Devlin, C., car couplings..... | 17,878 |
| Cross, A. F., fountain..... | 17,448 | De Voe, F. F., iron fence..... | 17,314 |
| " E. M., belting..... | 16,861 | Devor, J. R., et al., presses..... | 16,377 |
| " G. W., car couplings..... | 18,077 | Dewe, B. G., et al., iron fences..... | 16,497 |
| " J. R., transferring grain marks of wood..... | 16,660 | Deweese, J. W., trimming attachment for sewing machine..... | 18,053 |
| Crouch, W., et al., air buffer for cars..... | 16,555 | Dewey, J. J., harvesters..... | 16,548 |
| Crowell, H. C., pulley rigs..... | 15,923 | Dickerman, C. C., padlocks..... | 17,809 |
| Crowley, G. G., et al., harvesters..... | 16,337 | Diehl, P., button hole sewing machine..... | 17,828 |
| Crump, J. S., et al., stove pipe damper..... | 16,582 | " et al., sewing machine..... | 17,898 |
| Culley, J. P., W. R., J. R., T. R. and M. A., electro magnetic motor..... | 17,428 | Dietrich, J. C., cross-cut saw handle..... | 17,464 |
| Cullinan, T. A., et al., car coupler..... | 17,912 | " " thill coupling..... | 17,476 |
| Cumberbatch, J., damper regulators..... | 17,807 | Dillman, A., spark-arresters..... | 18,165 |
| Cummer, F. D., governors for steam engines..... | 17,367 | " et al., barbed wire fences..... | 17,171 |
| Cummings, G., et al., electrodes for telegraphic instruments..... | 16,297 | " " machines for making barbed wire.. | 17,802 |
| Cummings, M. C., washing machines..... | 16,469 | Dillon, W. S. F., et al., lock nuts..... | 17,181 |
| Cummings, W. G., traces detaching devices..... | 15,957 | Dineen, J., joints sewer..... | 17,238 |
| Curtice, G. A., egg preserving compounds..... | 16,489 | Dingens, J. A., et al., printers' quoins..... | 16,773 |
| " preserving eggs..... | 16,131 | Dinning, E. C., et al., sash fasteners..... | 16,099 |
| " J. F., brake shoe..... | 17,700 | Dion, A., et al., nut locks..... | 17,212 |
| Curtis, F., et al., ships' pumps..... | 16,676 | Doane, G. H., devices for shifting thills..... | 18,019 |
| " N., steam traps..... | 16,372 | " W. H., et al., band saws..... | 16,733 |
| Cushing (The) Process Co., purifying and maturing liquors..... | 17,471 | " sand papering machines..... | 16,732 |
| Cutlan, F., heel paring machine..... | 17,631 | Dobbs, C. G., decorating buttons..... | 16,708 |
| Cutler, H., grain dryers..... | 17,304 | Dobel, L. and A., et al., shoemakers' jacks..... | 16,244 |
| Daignault, P. M., dressing and dyeing process..... | 16,498 | Dodge, J. M., chain cables..... | 17,640 |
| Dalley, G. F., telephones..... | 16,374 | " W. H., et al., pulleys..... | 17,243 |
| " J., flavoring syrups and sugars..... | 16,252 | Dodson, S. and E. B., et al., disintegrating machines.. | 16,724 |
| Danford, E., felly..... | 17,572 | Dolbeer, J., logging engines..... | 16,878 |
| Dangler, D. A., vapor torches..... | 17,690 | Dolby, T. G. F., means for closing cans..... | 18,190 |
| Daniels, L. S., hot water or steam radiator..... | 17,996 | Donald, D. M., machines for bleaching fruits..... | 16,190 |
| " T. A., mortising machines..... | 16,769 | Donaldson, G. W., et al., heating apparatus..... | 17,517 |
| Dark, T., combined portable working car and swinging derrick..... | 17,449 | " W., hydraulic engines..... | 16,992 |
| Darrigan, J., double clamping brick..... | 16,616 | Donnelly, M. et al., sash lifters and fasteners..... | 17,387 |
| Daso, L., elevator..... | 17,560 | Donovan, J. A., cinder sifter..... | 17,545 |
| Davenport, F. S., wheel ploughs..... | 16,291 | Dorenwood, A., match machines..... | 16,978 |
| Davey, T., sole buffing machines..... | 16,149 | Dorr, H. G., et al., skiving machines..... | 16,684 |
| Davidson, G., trimmer attachment for sewing machines..... | 17,462 | Dorset, D. H., compounds for sewer pipes..... | 15,998 |
| " R. N., water wheels..... | 16,406 | Doty, N. E., valves for steam engines..... | 17,859 |
| " T., tubular lanterns..... | 17,135 | Dougherty, J. B., hoop cutters..... | 16,876 |
| Davis, A., et al., berth for sleeping cars..... | 17,104 | " machines..... | 16,785 |
| " C. J., buckle..... | 17,470 | Douglas, C. H., et al., saws..... | 16,979 |
| " et al., snap and buckle..... | 17,167 | " C. M., canvas boats..... | 16,810 |
| " G. R., et al., pianos..... | 16,082 | Downin, M. R., surcingles..... | 17,084 |
| " " water indicators..... | 16,177 | Downie, R. F. and G. F., rope serving machines..... | 16,259 |
| " H. T., quilting frames..... | 17,444 | " R. M., well drilling machines..... | 16,077 |
| " J. F., gun cleaner..... | 18,080 | Dowsley, T. B., wheel hubs..... | 16,787 |
| " J. H., fire kindlers..... | 15,873 | Doyle, J. H., et al., oral speculums..... | 16,982 |
| " J. S., grain carriers..... | 15,912 | " T. H., et al., whisk-holders..... | 16,778 |
| " N. L., et al., car-couplings..... | 16,155 | Drake, C. C., telegraph and telephone protector..... | 17,458 |
| " R. J., animal slinging railways..... | 17,277 | " J. T. H., sewing machine..... | 18,064 |
| " T. E., guides for paint stiffs..... | 15,902 | Dranly, C., wheels..... | 16,182 |
| Davidson, W., et al., fence posts..... | 17,262 | Draper, J. et al., harrows..... | 16,970 |
| Dawson, G. W., et al., car seals and nippers..... | 16,245 | " T., pumps..... | 16,182 |
| Day, A., railway track clearer..... | 15,945 | Drew, W. T., hand rakes..... | 18,070 |
| " G. F., medicinal compound..... | 17,296 | Drummond, D. E., et al., self-flushing closets..... | 18,076 |
| Dayton, W. H., needle blanks..... | 18,173 | Dryfoos, A., combined trunk and wardrobe..... | 17,776 |
| Deal, J. J., et al., cultivators..... | 15,933 | Du Bois, J., movable dams..... | 17,027 |
| Dean, J., small boats..... | 17,282 | " J. S. et al., underground conduits for electric wires..... | 17,315 |
| " J. B., et al., waggon jacks..... | 17,068 | Dubord, E., et al., nut locks..... | 17,212 |
| " J. E., permutation locks..... | 16,578 | Ducro, G., bottle and fruit jar stopper..... | 17,588 |
| " W. A., ploughs..... | 16,070 | Duel, C. H., et al., door hangers..... | 16,587 |
| Deeds, O. P., anti-cribbing attachments for horses..... | 16,044 | Duff, A. R., et al., bolt cutters..... | 16,209 |
| Deering, W., oord holding mechanism for grain binders..... | 17,926 | Duguay, H. G., spring bed..... | 17,740 |
| " grain binders..... | 16,069 | Duncan, J. M., evaporators..... | 17,792 |
| DeLancy, J. J., balance slide valves..... | 17,145 | Dundkei, E. W., sawing machine..... | 18,199 |
| DeLano, A., et al., railway cars..... | 16,465 | Dunderdale, C. F., process for refining and oxydizing.. | 17,697 |
| Dement, M. H., paging machine..... | 17,816 | Dunham, J. T., combined tag and envelope..... | 18,116 |
| " printing machine..... | 17,695 | Dunn, L. F., nickel plaiting..... | 17,880 |
| " et al., matrix forms for stereotyping..... | 17,789 | " W., et al., nut fastener..... | 17,939 |
| Denson, C. H., indexing books..... | 16,264 | Dunning, H., horse shoe..... | 17,855 |
| Dennett, F. A., grain binders..... | 16,468 | Durand, L., et al., reduction of iron ore..... | 18,214 |
| " (The) Harvesting Machine Co., grain binders..... | 18,167 | Durfu, S. E., et al., potato diggers..... | 16,189 |
| | | Durkee, A., musical instruments..... | 16,144 |
| | | " " pneumatic diaphragm levers..... | 16,187 |

| | | | |
|---|--------|--|--------|
| Durkee, E. W., wire coiling machines..... | 17,245 | Farrington, L., et al., carriage bodies..... | 17,371 |
| Durocher, Z., apparatus for moving thrashing machines..... | 17,365 | Faulkner, S. D., et al., reapers..... | 16,271 |
| Duryee, G., refractory lining for furnace stoves, &c..... | 17,584 | Fay, B., burglar alarm..... | 17,980 |
| Dutton, C., et al., swivel hooks..... | 17,138 | " G., newspaper wrappers..... | 17,234 |
| Dwyer, J., heating stoves..... | 17,338 | Feler (The) and Stowell Co., machine for feeding the carriage of saw mills by steam..... | 17,357 |
| Eames, A. U., carbureting apparatus..... | 17,780 | Fellows, C. F., lifters..... | 16,186 |
| Earhart, G. W., et al., brezel cutters..... | 17,244 | Fenesty, E. L., shovel..... | 17,857 |
| East, J. C., saw sett..... | 17,930 | Fenley, G. W., horse shoes..... | 16,366 |
| Eastman, W. E., heating apparatus..... | 16,486 | Fenning, J., et al., pole rings..... | 16,196 |
| Eaton, B. D., et al., fastening for gloves and mittens..... | 17,161 | Fensom, J., hoisting machines..... | 16,220 |
| " H. A., alarms or signals..... | 16,696 | Fidler, J. W., farm gates..... | 16,054 |
| " W. S., et al., skiving machines..... | 16,634 | Field (The) Force Pump Co., pumps..... | 16,254 |
| Eddy, A. C., compounds of caoutchouc..... | 17,265 | " W. L., "..... | 16,254 |
| " E. B., match sulphurizing machine..... | 17,503 | Fieroe, C., staining, graining, and ornamenting walls..... | 17,334 |
| " E. B., pulp pails..... | 16,739 | Fifield, G. E., lanterns..... | 16,061 |
| " " saw mill log holder..... | 17,579 | Figge, A., water and paddle wheels..... | 16,591 |
| Edge, W. C., inlaid work..... | 16,007 | Filkins, J. L., hop driers..... | 18,027 |
| Edison, T. A., electrical distribution..... | 17,076 | Fillebrown, L. W., cultivator teeth..... | 17,798 |
| " generators..... | 17,077 | Filman, P., draft bolts..... | 16,610 |
| Edwards, A., seal joint basin for water closets..... | 17,678 | Filson, H. G., et al., open links..... | 16,176 |
| " C. J., car couplings..... | 17,688 | Findlay, J., car wheels axles and spring..... | 17,831 |
| " D. W., medicinal compound..... | 16,316 | " S., trucks..... | 17,795 |
| " H. P., smut and polishing machines..... | 16,184 | Fish, J., et al., hygienic foods..... | 16,661 |
| Egan, W. F., et al., fire grates..... | 16,719 | Fish, G. M., barbed wire..... | 16,916 |
| Ehrlich, L., envelope and letter sheet..... | 17,533 | " S. H., potato planter..... | 17,694 |
| Einstein, H., stove polish..... | 15,892 | Fisher, A. A., et al., washing textile fabrics..... | 17,286 |
| " (The) Maf'g. Co., stove polish..... | 15,892 | " " sewing machine..... | 17,907 |
| Eiseman, S. M., treating volatile fluids or oils..... | 17,643 | " B., saw filing machine..... | 16,909 |
| " treatment of solid volatile matters..... | 17,649 | " S., et al., boiler cleaners..... | 16,218 |
| Ellery, C., machine for feeding printing presses..... | 16,500 | " G. F., lanterns..... | 17,057 |
| Elliott, C. W., et al., sash lifters and fasteners..... | 17,387 | " J., drag saws..... | 16,119 |
| " G. M., et al., hammocks..... | 16,980 | " L. G., Jr., et al., ventilators..... | 17,180 |
| " G. R., cash conveying system..... | 17,581 | Fiske, A. B., egg carriers..... | 16,712 |
| " " store service system..... | 17,580 | Fithian, L. S., mechanical movement..... | 17,647 |
| " " cash and parcel carrier..... | 17,162 | Fitts, L., et al., barbed wire..... | 16,969 |
| " J. smoke consuming apparatus..... | 17,701 | Fitzgerald, L., et al., apparatus for heating car..... | 16,198 |
| " J. G., et al., grain binder..... | 17,520 | " " car heating apparatus..... | 15,929 |
| " J. W., dentist flask..... | 17,860 | " " means for conveying motive agents..... | 15,928 |
| " " stoves..... | 16,443 | Fitzgibbons, P., steam boilers..... | 16,638 |
| " N. B., clothes washer..... | 17,522 | Fitzpatrick, J. B., lifters for cooking utensils..... | 17,777 |
| Ellis, G. B. and J., horse powers..... | 17,169 | Fleming, J. A., insulating materials..... | 17,192 |
| " H. R., fluting and sad irons..... | 16,318 | Fleming, J. A., post hole diggers..... | 16,441 |
| " J. L., lifting jacks..... | 16,764 | Fletcher, T., gas burners..... | 15,919 |
| " J. S., et al., washing machines..... | 16,361 | Flint, E. R., step-ladder..... | 17,609 |
| " W. A., et al., composition for coughs..... | 16,079 | Flynt, C. D., axle lubricators..... | 15,894 |
| " " worm powder..... | 16,203 | Fogarty, T. B., gas process..... | 16,529 |
| Ellison, M. D., et al., packing vessels..... | 16,636 | Fogg, L. C., self-adjusting paddle for boat..... | 17,677 |
| Elmer, R. E., et al., paper boxes..... | 16,129 | Forbes, I. N., locomotives..... | 16,560 |
| " J., railroad bed..... | 16,570 | " " rotary engines.. 16,557 16,558 16,559 | 16,561 |
| Elphinstone, Lord, dynamo-electric machine..... | 17,500 | " W. D., die stocks..... | 16,422 |
| " " et al., " "..... | 16,061 | Ford, J. H., fire escapes..... | 16,656 |
| Elting, J., thill couplings..... | 18,220 | Fordon, J. A., et al., boiler cleaners..... | 16,218 |
| Eltzroth, G. W., et al., car couplings..... | 16,043 | Forest, W., educational instrument..... | 17,613 |
| Elward, J. H., traction engines..... | 16,830 | Forney, M. N., locomotive engine..... | 17,949 |
| Emerson, C. T., car trucks..... | 16,742 | Forster, B. J., atmospheric motors..... | 16,834 |
| Emery, J., egg cases..... | 18,216 | " N. L., tide motor..... | 17,923 |
| England, H. Y., croquet wickets..... | 17,751 | Foster, G. S., et al., hoop cutting machines..... | 16,507 |
| " J., crozes..... | 16,816 | " O. S., & W. S., machines for making spiral springs..... | 17,876 |
| English, C., draught top for chimneys..... | 17,839 | " W. F., device for lacing gloves..... | 17,130 |
| " P., gas generator..... | 18,043 | " U., gong bells..... | 17,723 |
| " T., boring apparatus..... | 18,114 | Fournier, J. A., ladies' work stand..... | 18,037 |
| " W. J., et al., water traps..... | 16,674 | Fox, C. J., cofferdams for ships..... | 16,786 |
| Enright, J., traction wheels..... | 17,113 | " H. C., sad irons..... | 17,316 |
| Eppler, A., Jr., et al., mechanism for forming tubular wire..... | 18,033 | " J., washing machines..... | 16,658 |
| " " nailing machines..... | 17,848 | " S., stuffing boxes..... | 17,116 |
| Erdman, R., tools, combination..... | 17,385 | Francis, L., step-ladders..... | 16,620 |
| Eslman, A., compound to be employed as a substitute for barm..... | 17,576 | Frank, H., glass furnaces..... | 16,121 |
| Esselbom, E. M., snow ploughs..... | 16,059 | Frasch, H., hydrocarbon distillation..... | 15,959 |
| European (The) Electric Co., electric lamps..... | 16,598 | " " petroleum stills..... | 15,960 |
| " " " telephones..... | 16,072 | Fraser, P., machine for making springs..... | 18,164 |
| Evenden, J. W., ale condensers..... | 16,003 | " W. G., bag fasteners..... | 16,843 |
| Everett, C. A., wire fence machines..... | 17,313 | Frazer, J. M., fish traps..... | 17,345 |
| Everson, G. H., compound railroad rail..... | 17,567 | Fréchette, I., shingle mill..... | 16,606 |
| Fagan, T. B., et al., tile ditcher..... | 17,942 | Freeland, R., soap-making machinery..... | 17,360 |
| Fairbanks, F., scales..... | 16,266 | Freeman, G. L., et al., milk vats..... | 16,875 |
| Falconnet, E. F., aerial vessels..... | 16,642 | French, O. S., et al., spark arresters..... | 16,837 |
| Fallman, J. C., apparatus for forming and shaping corsets..... | 17,835 | Frishie, D., friction clutches..... | 16,026 |
| Fallon, W., dumping cars..... | 18,135 | " E. G., compound for lining vessels..... | 16,942 |
| Farewell, A. L., washstands..... | 15,886 | Froin, J., games..... | 16,238 |
| Farmer, W., et al., fire-escapes..... | 16,412 | Fromm, W. H., hydrants..... | 17,236 |
| Farnum, W. C., et al., weighing scales..... | 17,407 | Frost, C. B. and F. T., et al., mowing machines..... | 16,071 |
| Farquhar, J. F. C., et al., filtering apparatus..... | 16,820 | " W. O., horse power machines..... | 16,806 |
| Farra, W. H., nut locks..... | 16,725 | Fulcher, N. J., turnip harvester..... | 17,841 |
| Farrar, J. B., boots and shoes..... | 18,223 | Full, G. E., starch-drying house..... | 17,015 |
| | | Fuller, A. G., rocking and reclining chairs..... | 18,011 |

| | | | | |
|---|--------|--------|--------|--|
| Fuller, G. W., dynamo-electric machines. | 16,439 | 16,440 | | |
| | 16,455 | 16,456 | 16,457 | |
| Fuller, G. W., dynamo-electric machine | | | 18,146 | |
| " " spiral core for dynamo-electric machines | | | 18,147 | |
| " " L. K., et al., drying apparatus | | | 16,317 | |
| Fulton, R., et al., railway cars | | | 16,465 | |
| Funke F., marine hollers | | | 16,452 | |
| Furman, A. B., et al., waggon jacks | | | 17,068 | |
| Furniss, E., et al., spinning and doubling frames | | | 16,612 | |
| Gage, M. L., tea chest attachments | | | 17,330 | |
| Galbraith, A., felloe and spoke tighteners | | | 17,242 | |
| Galloway, T. D., grain drills | | | 16,537 | |
| Galvin, T. and J., gate valve | | | 18,036 | |
| Gano, J. A., furnace for locomotive and boilers | | | 17,874 | |
| Gardner, A., black leaf check book | | | 17,778 | |
| " " cheque and account book | | | 17,205 | |
| " " memorandum books | | | 16,672 | |
| " E. V., white lead | | | 16,832 | |
| " F. W., et al., metal working tools | | | 15,913 | |
| " H. F., time-controlling system | | | 17,952 | |
| Garland, M. H., filling oans | | | 17,853 | |
| Garner, S. R., et al., machines for dressing hoops | | | 16,265 | |
| Garrett, H. D., piston heads | | | 16,905 | |
| Gartner, J., screw propellers | | | 17,123 | |
| Garvin, M., et al., hay rakes | | | 16,157 | |
| Gates, G. W., et al., carpet sweepers | | | 17,827 | |
| " R. D., pulverizing machines | | 17,142 | 18,012 | |
| " W., land rollers | | | 16,677 | |
| Gathman, L., machine for cleaning grain | | | 17,719 | |
| " " manufacture of flour | | | 17,252 | |
| " " middlings purifiers | | | 17,718 | |
| " " mill disks | | | 16,571 | |
| Gaty, S. T., stump extractors | | | 15,871 | |
| Gause, W., et al., mowing machines | | | 17,298 | |
| " " Pitman connections for mowers | | | 17,993 | |
| Gay's Sash Lock Co., sash locks | | | 16,737 | |
| Gendron, P., vehicle wheels | | | 16,502 | |
| Génil, J. B., hose couplings | | | 18,087 | |
| Germain, J., implement for making heel stiffeners | | | 18,062 | |
| Gerner, H., India-rubber and gutta-percha | | | 16,826 | |
| Gerow, A., road scrapers | | | 16,188 | |
| Getchell, G. W., feed water alarms | | | 16,040 | |
| " J. S. & G. R., hoe cultivator | | | 17,922 | |
| Gibbs, E. H., suppositories | | | 16,081 | |
| " S., fence posts | | | 15,927 | |
| Gibson, W., thrashing machine | | | 16,112 | |
| Gibson, H., ties for securing bags, bales, &c. | | | 17,324 | |
| Gilbert, E. E., basting under water | | | 16,272 | |
| " E. F., hose connections | | | 16,172 | |
| " H. J., roller mills | | | 18,086 | |
| " L. G., et al., grease cups | | | 17,311 | |
| " M. H., stock cars | | | 17,003 | |
| Giles, J. W., and T. F., wrenches | | | 17,051 | |
| Gilliland, J. F., cylinder for armatures | | | 17,081 | |
| " gearing | | | 17,040 | |
| Gingras, T., fly nets | | | 18,154 | |
| " et al., swivel hooks | | | 18,091 | |
| Glard (The) Wrench Man'g Co., wrenches | | | 16,300 | |
| Glaser, F. C., tobacco improvement process | | | 16,426 | |
| Glendillen, E., horse rakes | | | 16,605 | |
| Gildden, C. W., heel trimming machine | | | 16,357 | |
| Glasebrook, H. G. I., waggon rack and top | | | 17,726 | |
| Glover, H., isometers | | | 17,494 | |
| Glynn, C. A., et al., frog protector | | | 15,968 | |
| Godwin, J., et al., pole rings | | | 16,196 | |
| Goehring, J., et al., steam condenser | | | 17,951 | |
| Goff, F. G., self-closing gates | | | 17,770 | |
| " B., veneering presses | | | 16,997 | |
| Goforth, W., et al., sash cord fasteners | | | 16,103 | |
| Gold, E. E., steam heaters | | | 16,359 | |
| Goldberg, H., composition for size | | | 17,672 | |
| Goldie, J., et al., middlings purifiers | | | 18,211 | |
| " " roller mills | | 17,935 | 17,664 | |
| " " shingle machine | | | 16,281 | |
| Gooderham, W., et al., apparatus for serving tenders with water | | 16,866 | 16,867 | |
| Goodwin, J., bedsteads | | | 16,747 | |
| " " invalid bedsteads | | | 16,583 | |
| Goold, E. L., et al., seeding and drilling machine | | | 17,963 | |
| " " machines | | | 17,168 | |
| " " spring hoes | | | 16,864 | |
| Gordon, J., detachable book cover | | | 17,642 | |
| " J. E. H., dynamo electric machines | | | 17,620 | |
| " W. H., ice boxes | | | 16,068 | |
| Goulette, T. F., larch scrapers | | | 16,433 | |
| Gourdeau, F., foot rests | | | 16,025 | |
| Graeter, H. W., flour bolts | | | 16,807 | |
| Grafton, E. W., bed bottoms | | | 17,132 | |
| Graham, H., car-coupler | | | 17,880 | |
| " J., coating iron with lead | | | 18,827 | |
| " " nut locks | | | 16,730 | |
| " J. A., production of fibres | | | 16,277 | |
| " T. J., bag-holders | | | 16,860 | |
| Granger, A. O., et al., apparatus for manufacturing gas | | | 17,638 | |
| Grant, E. W., rubber buckets | | | 15,917 | |
| " J. B., et al., printing ink | | | 17,065 | |
| Gray, G. D., fire escape | | | 17,899 | |
| " L. B., insulator for electric wires | | | 17,197 | |
| " T., et al., hoop cutter | | | 17,917 | |
| " W. D., grain reduction machine | | | 17,020 | |
| " " testing roller mills | | | 16,950 | |
| " W. P., life preserver holder | | | 17,508 | |
| Green, E. K., pipe grapple | | | 17,558 | |
| " J., taps and cocks | | | 17,079 | |
| " N. H., freight cars | | | 16,607 | |
| " O. H., station indicators | | | 16,130 | |
| " W. H., freight car | | | 18,172 | |
| Greenleaf, C. A., turn tables | | | 16,836 | |
| Greenough, J. J., machinery for grooming horses | | | 16,481 | |
| Gregory, C. A., fire-escape ladders | | | 16,504 | |
| Greig, B., animal traps | | | 15,921 | |
| " G., ploughing machines | | | 16,319 | |
| Grieves, J., et al., system of laying electrical conductors | | | 17,216 | |
| Grip (The) Printing and Publishing Co., et al., black leaf check book | | | 17,166 | |
| " " " " memorandum books | | | 16,930 | |
| Griswold, M., et al., stove-pipe damper | | | 16,582 | |
| Groesbeck, D., spark arresters | | | 16,860 | |
| " " et al., spark arresters | | | 16,447 | |
| Grogan, J. H., platform waggon spring | | | 18,081 | |
| Gross, F., air fixture brackets | | | 17,227 | |
| " M., gas retorts | | | 17,097 | |
| Grossman, G., et al., detachable handles for utensils | | | 16,233 | |
| Grove, D. E., railway ditching machine | | | 17,633 | |
| Groves, L. S., apparatus for generating and carbureting hydrogen gas | | | 17,402 | |
| " W., process for reducing oils | | | 17,016 | |
| Grubbs, T. S., et al., horse collars | | | 17,534 | |
| Gruson, H., et al., explosive matter | | | 17,088 | |
| Guelph, (The) Carriage Goods Co., axle turning machine | | | 16,762 | |
| " " " " " vehicles | | | 16,784 | |
| Gulleaume, F. C., telephone | | | 18,061 | |
| Gulager, W., shirt collars | | | 18,148 | |
| Gulcher, R. J., dynamo-electric machines | | | 16,116 | |
| " " electric lamps | | | 17,049 | |
| Hadden, T. D., et al., drive well points | | | 17,369 | |
| Hadly, G. G., wrenches | | | 17,698 | |
| Haggas, J., et al., apparatus for serving tenders with water | | 16,866 | 16,867 | |
| Haggerty, J. C., bark cutting machine | | | 17,818 | |
| Haines, D. W., et al., car couplings | | | 16,729 | |
| Halbinaur, J., et al., explosive matter | | | 17,088 | |
| Haldam, J., fences | | | 16,734 | |
| Haldeman, B. F., et al., brake blocks | | | 16,123 | |
| Hale, N. M., et al., car couplings | | | 16,165 | |
| Hale, W. P., binding machines | | | 16,125 | |
| Hales, C., brick machines | | | 18,210 | |
| Hall, C. H., et al., lozenge machines | | 16,355 | 16,475 | |
| " T., hay unloading machine | | | 18,198 | |
| " T., et al., thrashing machines | | | 17,007 | |
| " T. P., et al., switch openers | | | 16,651 | |
| " W. H., horse rakes | | | 16,839 | |
| Hallenbeck, J. P., sewing machines | | | 16,749 | |
| Halloway, R. G., et al., hame attachments | | | 15,979 | |
| Ham, A. W., machine for attaching buttons | | | 18,028 | |
| Hambleton, D., bobbins | | | 15,937 | |
| Hambur, E., button hole stays | | | 18,194 | |
| Hamilton, F. A., et al., telegraph cables | | | 16,644 | |
| " J. A., car axle box | | | 17,426 | |
| " J. B., organs | | | 17,193 | |
| " T., life boat | | | 18,180 | |
| " (The) Industrial W. Ks. Co., electric lamp | | | 18,218 | |
| " W., machine for raising saw logs | | | 16,216 | |
| Hammond, J. T., machine for feeding nail plates | | | 17,364 | |
| " W. H., et al., moulting hooks | | | 17,805 | |
| Handy, J., et al., flour packers | | | 16,899 | |
| Hankerson, A. D., et al., car couplings | | | 16,729 | |
| Hanck, A., peg cutters | | | 17,318 | |
| Hankin, W. H., Jr., re-inforcing plate for saw handle | | | 17,418 | |
| Hanson, C., Plows | | | 17,709 | |
| Hapgood, H. L., match machines | | | 17,246 | |
| Hardy, M. A., magneto-electric machines | | | 16,365 | |
| Harker, J. B., casting hollow wares | | | 17,616 | |
| Harland, W. S., milk pans | | | 17,379 | |

| | | | |
|---|---------------|--|---------------|
| Harmon, C. S., lifting jacks..... | 16,539 | Hobbs, J., oleomargarine butter | 17,290 |
| " M., middlings purifier..... | 17,451 | Hochhausen, W., dynamo and magneto electric machine..... | 17,408 |
| Haron, W., mail bags..... | 17,002 | Hochhausen, W., electric lamps..... | 17,356 17,395 |
| Harrigan, D., vacuum exhaust pipe..... | 17,587 | " W., magnetic electric machines..... | 16,056 |
| Harrington, E., hay elevator..... | 17,008 | Hodge, W., buggy tops..... | 16,052 |
| Harris, A., Son & Co., cord winder for harvester..... | 17,849 | " " carriage tops..... | 16,029 16,030 |
| " " harvester binder..... | 17,898 | Hodson, J. T., fire escapes..... | 17,281 |
| " D. L., et al., railway scrapers and levellers..... | 18,060 | Hoeveler, W. A., apparatus for drying glue..... | 17,108 |
| " J., et al., cord binder for harvester..... | 17,849 | " " glue stock washer..... | 17,109 |
| " J. B., house heaters..... | 18,153 | " " vacuum pans for evaporating liquids..... | 17,630 |
| " J. K., sewing machines..... | 16,267 16,268 | Hoffman C. W., nut and pipe wrenches..... | 17,814 |
| " M., wind instruments..... | 16,150 | " R. J., lubricators..... | 16,135 |
| " T. A., store shelving..... | 17,502 | Hohmeier, P., milk cans..... | 16,602 |
| " W. C., et al., steam boilers..... | 16,389 | Holbrook, M., stone and root diggers..... | 16,445 |
| Hart, C. W., blacking boxes..... | 17,332 | Holcomb, A. P., et al., centrifugal flour bolts..... | 17,320 |
| " H. C., belt fasteners..... | 18,124 | Holden, W. J., et al., devices for attaching pumps to cans..... | 17,427 |
| Harrison, L., harness buckle and loops..... | 17,687 | Holden, W. R., et al., nut locks..... | 17,182 |
| Hartwich, F. F., straw stackers..... | 17,336 | Holland, H., horse shoes..... | 17,276 |
| Hasenpflug, G., sash-holder and lock..... | 18,217 | " " wheel runners..... | 16,228 |
| Haskell, L. D., carriages perches..... | 16,647 | " T., lubricating devices..... | 15,883 |
| Hasson, G., sawing machines..... | 17,843 | Holliday, R. A., et al., oral speculums..... | 16,982 |
| Hatfield, L., car couplings..... | 16,958 | Holman, C. J., hand trucks..... | 16,276 |
| Haven, N. A., fence post..... | 18,048 | " D. O., force pumps..... | 15,909 |
| Haverty, P. F., artificial stone..... | 17,934 | Holmes, T. J., et al., culinary forks..... | 15,969 |
| Hawes, A. C., horse shoes..... | 17,459 | Holt, A. C., et al., hoop cutting machiues..... | 16,507 |
| Hawkes, G., process of lasting boots and shoes..... | 17,452 | " N. W., dust collector..... | 17,563 |
| Hawkey, J. R., spring gear for buggies..... | 17,654 | Hood, W. F., barrel covers..... | 15,891 |
| Hawkins, D., manufacture of shirts..... | 17,509 | Hooker, G. W., et al., shingle machines..... | 16,804 |
| " L. D., elevators..... | 16,935 | " " water wheels..... | 17,549 |
| Hay, H. and M. P., churn..... | 18,078 | Hoosier (The) Drill Co., horse hay rake..... | 17,994 |
| Hayden, H. F., gas furnace for metallurgic and other purposes..... | 17,450 | Hoover, C. S., mill stone dressing machine..... | 17,592 |
| Hayden, H. F., vapour and gas generating apparatus..... | 17,570 | " W. G., removable insoles..... | 15,888 |
| Haydon, W. T., et al., oil presses..... | 17,098 | Hope, O., et al., oral speculums..... | 16,982 |
| Hayes, W., jr. mechanism for preventing the lapping of belts on shafting..... | 16,169 | Horn, C. E., butter workes..... | 17,074 |
| Hayton, W., horse collar fasteners..... | 18,221 | " J. A., et al., fire engines..... | 18,175 |
| Hayward, J. H., et al., life-preserving chairs..... | 16,423 | Horsnell, A. H., et al., filtering apparatus..... | 15,941 |
| Heale, H. P., et al., automatic metallic packing for piston rods, &c..... | 17,287 | Horton, H. L., et al., hammocks..... | 17,302 |
| Heath, E. N., calendars..... | 16,225 | " J. A., friction movements..... | 17,353 |
| " J. S., spring hoe..... | 17,833 | Hooton, M. M., et al., grain binder..... | 17,520 |
| " L., mattresses..... | 16,643 | Houghton, E. J., apparatus for electric lighting railway cars..... | 17,747 |
| Hébert, L. H., horse hay rake..... | 18,050 | Houghton, A. H., et al., switch stands..... | 16,693 |
| Hébert, L. H., J. J. and A. J., car brakes..... | 17,705 | Hoult, D. H., railway switch..... | 17,905 |
| Heldelmair, M., mouth-piece for speaking tubes..... | 17,460 | House, J. A., apparatus for shaping corsets..... | 17,836 |
| Heine, A., et al., centrifugal flour bolts..... | 17,320 | Hover, H. F., sofa beds..... | 16,919 |
| Heintzman, T. A., music desk..... | 17,022 | How, E., double trees..... | 17,013 |
| Hellhoff, A., et al., explosive matter..... | 17,088 | Howard, F. P., et al., process for treating flax or jute..... | 16,505 |
| Hempel, J. A., et al., printers' quoins..... | 16,773 | " H. B., bed bottoms..... | 17,128 |
| Henderson, H. A., heel nailing machines..... | 16,162 | Howe, H. A., mower..... | 17,438 |
| " J. A., evaporators..... | 17,801 | " T. B., brake rim for car wheels..... | 17,953 |
| " T., lasting tools..... | 16,083 | " " extensible steps for car platforms..... | 17,881 |
| Hendrick, O., syringes..... | 17,368 | " " et al., furnace grates..... | 16,538 |
| Henninger, J., et al., corsets..... | 18,163 | Hoves, J., faucets..... | 16,961 |
| Henricks, P., show cases..... | 18,099 18,100 | Howling, R. M., spark arresters..... | 16,822 |
| Henry, V., grain binders..... | 16,387 | Hoyt, J. J., et al., cases for preserving food..... | 16,381 |
| Henshaw, F. C., et al., axle lubricators..... | 15,894 | Hubbard, E., pulp pulis..... | 16,739 |
| Herendeen, E. W., harrows..... | 15,202 | Huber, E., smoke boxes..... | 16,153 |
| Hernstadt, E. M., et al., car couplings..... | 17,172 | " E., et al., thrashing machines..... | 16,014 |
| Herreshoff, J. B. F., et al., smelting furnaces..... | 16,819 | Hudson, A., antimony furnaces..... | 16,817 |
| Herrington, H. D., et al., potato diggers..... | 16,189 | " M. B., gate hinges..... | 16,707 |
| Hersey, J. R., rolling mills..... | 17,945 | Huffman, M., washing machines..... | 17,269 |
| Hersby, A., feed cutters..... | 15,966 | Huffsteter, C., spring vehicle..... | 18,040 |
| Hesse, F. G., fluid meter..... | 15,925 | Hughes, C. C., preparation of whitewash..... | 16,073 |
| Hewitt, H. H., et al., oil box lid..... | 16,650 | Huke, C., machine for cutting slots..... | 18,097 |
| " (The) Box Lid Co., oil box lid..... | 16,650 | Hull, J. C., rat and game trap..... | 17,958 |
| " W., machine for forming barbs..... | 16,511 | Hullinger, A., flax thrasher..... | 17,966 |
| Hey, G. W., et al., door hangers..... | 16,587 | Humphrey, C. I., belt fastener..... | 17,950 |
| Hiestor, C. E., et al..... | 17,302 | Hunger, F., et al., foot-rest for rocking chairs..... | 17,547 |
| Higgins, C. L., welt and welt guides for sewing machines..... | 17,540 | Hunt, G. W., lighting device..... | 17,038 |
| Higham, C., car brakes..... | 16,223 | " T., waterproofing compound..... | 17,542 |
| Higinbotham, H. S., whiffetree hooks..... | 15,925 | Huntener, A., et al., machines for dressing hoops..... | 16,265 |
| Higley, C. W., bustles..... | 16,789 | Hunter, G. W., revolving cylinder engines..... | 17,846 |
| Higly, C. W., corset and skirt supporter..... | 16,269 | " R. J., heating composition..... | 18,156 |
| Hill, H. N., windmills..... | 17,278 | Huntington, A. K., et al., amalgamating apparatus..... | 17,487 |
| " J. G., et al., packing of pipes..... | 15,895 | " " " process for extracting precious metals from their ores..... | 17,412 |
| " N., et al., whiffetree hooks..... | 16,311 | Huntress, J. H., et al., swivel hooks..... | 17,138 |
| " T., dumping cart..... | 17,810 | Hurst, J. D., bolting reels..... | 16,566 |
| " W. H., et al., nut lock..... | 17,446 | " J. J. D., middlings purifiers..... | 16,398 |
| Hilliard, T. J., draw bars and car couplers..... | 17,303 | Hurt, J., feeding apparatus..... | 16,414 |
| Hillman, N. H., albumen manufacturing..... | 15,911 | Hurtle, F. M., vehicle hubs..... | 16,967 |
| Hilton, W., et al., sad irons..... | 17,163 | Huse, W. D., knitting machiues..... | 16,720 |
| Hinden, M. J., hydrogen lamps..... | 17,652 | Hussey, C. A., electric lamps..... | 16,598 |
| Hitchcock, J., et al., sand bands..... | 18,072 | " " telephones..... | 16,072 |
| Hoag, C. F., knit caps..... | 16,154 | " L., et al., heating apparatus steam and air..... | 17,517 |
| Hobbs, J., artificial butter, &c..... | 17,268 | Hutchison, W., oatmeal and grain reduction mill..... | 17,465 |

| | | | |
|--|----------------|---|--------|
| Labelle, F., et al., match dipping machine | 17,474 | Lindop, C. P. and W. E., apparatus for changing back grounds | 17,288 |
| “ “ “ sulphurizing machine | 17,503 | Lindsay, W. J., car wheels | 17,978 |
| La Brèche-Viger, J., ore separators | 16,028 | Lines, T. D., coupling for vehicle springs | 18,066 |
| Lacerte, N., art of curing diphtheria | 16,515 | “ “ vehicle springs | 18,122 |
| Lackse, L., et al., candlesticks | 17,214 | Linklater, T., heating furnaces | 17,377 |
| Ladd, J., hoisting apparatus | 16,315 | Lipsey, A. B., gas burners | 17,765 |
| Laidlaw, W. W., buzz or trueing plainer | 17,602 | Litton, E. L., car couplings | 16,001 |
| “ “ et al., mortising machine | 17,604 | Livesey, J., et al., gas enriching apparatus | 18,182 |
| “ “ moulding machine | 17,605 | Lloyd, W. J., et al., lawn mowers | 16,482 |
| Laing, A. and W., et al., veneer packages | 16,364 | Lockhart, H. J., et al., washing machines | 16,361 |
| “ J. M. A. and W., et al., butter packages | 16,342 | “ W. G., et al., fifth-wheel for vehicles | 17,501 |
| Lake, I. S., pipe wrench | 17,940 | Lockerty, W., life boats | 15,999 |
| Lahey, J. H., claw-bars | 17,103 | Loewenberg, H., manufacture of material in imitation of leather | 17,574 |
| Lakin, J. A., telephone | 17,475 | Logan, J., artificial stone grave vaults | 17,017 |
| Lamb, I. W., knitting machine | 18,079 | Long, J. H., fire-escape | 17,692 |
| Lamping, J. F., stop and waste cocks | 17,047 | Longley, C. H., et al., paper matting or carpet | 17,858 |
| Lamson (The) Cash Railway Co'y, cash carriers | 17,101 | Lord, D. H., et al., flour packers | 16,899 |
| “ W. S., cash carriers | 15,991, 15,992 | “ P., hay press | 17,704 |
| Lancaster, J. H., pipe-cutter, &c. | 17,078 | “ et al., universal joints | 16,823 |
| “ “ pipe reamers | 17,211 | Loring, C. T., support for telephones and transmitters | 17,385 |
| “ “ screw cutting tools | 17,305 | Loucks, E. A., vehicles | 16,960 |
| Landfear, U. R., silk and thread polishing machinery | 17,608 | Loud, H. M., log feeders and turners | 16,652 |
| Lane, F., et al., matrix forms for stereotyping | 17,789 | Love, A., threshing machine | 17,571 |
| Lange, C., harness hames | 16,256 | Lovejoy, J., switch and couplers | 16,117 |
| Lanhoff, W., millstone alarms | 16,241 | Lowe, C. W., mowing machines | 17,267 |
| Lansing, J. D., et al., buckles | 17,372 | “ W. T. J., spoon baits | 17,998 |
| “ (The) Wheel Company, wheel hubs | 18,069 | Lowne, R. M., electric logs | 15,986 |
| Lantz, W. H., et al., device for taking coal in locomotive tenders while in motion | 17,309 | Lowry, J. M., velocipedes | 16,115 |
| Lapham, E. V., cheese coverings | 16,873 | Lozle, J., et al., butter packages | 16,342 |
| Lapham, J. J., brake shoes | 17,213 | “ “ veneer packages | 16,364 |
| Larchar, L., snow plough | 17,562 | Lucas, J., et al., cord binder for harvester | 17,849 |
| Larsen, A., compound for forming suppositories | 17,329 | Ludgate, J., machine for raising saw logs | 16,216 |
| Larsen, J., et al., broadcast sowers | 16,334 | Ludlow, H., et al., paper boxes | 16,129 |
| Larson, E., saw sets | 16,800 | “ W. E., derrick | 17,489 |
| Latour, P., camp stove | 17,553 | “ “ unloading machines | 16,551 |
| Lasher, M. E., hame tug | 17,504 | Luckens, J., gate attachments | 17,479 |
| Lauder, W. T., tool holders | 17,354 | Lutted, J., machine for making confections | 17,797 |
| Law, A., et al., process of annealing iron | 17,528 | Lynch, J., lumber dryers | 17,120 |
| Lawrence, G. T., chin rest for violins | 17,512 | “ W. H., butter tubs | 17,749 |
| “ Z. S., wooden casks | 16,509 | “ “ creamer | 17,703 |
| Lawton, A., ore handling devices | 16,425 | “ “ milk pail strainers | 17,748 |
| Laycock, W. S., window blinds | 17,149 | Lynde, C. H., grain binder and corn husker | 17,862 |
| Leach, C. J., et al., combined grain scales, bagger and register | 17,409 | Lyte, F. M., treatment of ores | 16,375 |
| Lechner, F. M., et al., mining machines | 16,437 | “ “ treating ores | 16,376 |
| Lee, A. H., et al., furnace grates | 16,538 | Lytle, A. J., shears | 15,980 |
| “ E. W., elevator and car | 16,148 | McAdams, J., drags for stopping ships | 16,413 |
| “ J. L., et al., packing of pipes | 15,895 | McCall, T., et al., self-flushing closets | 18,075 |
| “ J. T. B., mop holders | 16,174 | McCallum, J., cultivator | 17,521 |
| “ L. H., grain binders | 18,207 | “ N., composition to be used as paint or dye | 17,648 |
| “ T., et al., egg preserving apparatus | 16,580 | McCarroll, T., et al., composition for coughs | 16,079 |
| Leeds Manufacturing Co'y, paint or dye | 17,648 | “ “ worm powder | 16,203 |
| Lees, W., et al., gas engines | 16,261 | McCarthy, D., et al., pianos | 16,082 |
| “ “ gas motor engines | 16,008 | “ “ water indicators | 16,177 |
| Lefebvre, P., et al., bricks | 16,128 | “ J., mop-wringer | 10,490 |
| Legg, B. A., chains | 18,188 | “ N., “ “ | 17,490 |
| Lehmann, W., grinding disks | 17,325 | McCarty, N., electric arc lamps | 16,166 |
| Leirman, G. W., swivel hooks | 18,091 | “ W. F. M. process for solidifying liquid fatty acids | 17,650 |
| Leman, J. N., corsets | 16,405 | McCaw, C. H., et al., stoves | 16,881 |
| Lemon, A. J., et al., reaping and mowing machines | 17,670 | McChesney, P. N., et al., decorticating and cleaning machine | 16,624 |
| Lenhart, W. H., lathes | 18,243 | McClain, R., et al., sewer traps | 16,019 |
| Lenox, E. S., blanks of wire bale ties | 15,964 | McConnell, J. N., flour bolts | 15,565 |
| “ “ hooks “ “ | 15,965 | McCormick, J., vehicle springs | 18,120 |
| Leslie, T. G., spark-arresters | 15,988 | McCulloch, H., middlings purifiers | 18,211 |
| “ W., jr., crushing withes | 17,179 | “ “ roller mills | 17,035 |
| Lessard, P., et al., creamers | 18,835 | “ et al., roller mills | 17,064 |
| Levalley, C. W., grain binders | 16,695 | McDonald, A., stone dressing hammers | 16,126 |
| Leve, G., et al., berth for sleeping cars | 17,104 | “ A. J., invalid lounges | 15,881 |
| “ berths for steamers | 15,978 | “ D. A., method of steering | 16,521 |
| Léveillé, J., sounding apparatus | 16,838 | “ T., lantern | 17,445 |
| Lever, C., electric light apparatus | 17,984 | “ W., sawing machines | 16,306 |
| Levi, T., canning meat, &c. | 16,995 | McDonel, D. A., brushes | 16,780 |
| Lewin, J. M., bottle stoppers | 16,348 | McDougall, A., tow boats | 16,808 |
| Lewis, G. T., oxides of lead | 17,140 | McDowell, S. J., et al., camp stoves | 16,913 |
| “ J. S., insulator of telegraph wire | 18,054 | “ “ portable ovens | 16,933 |
| “ J. T., et al., wire fences | 16,617 | McFadden, P., harness | 17,755 |
| “ O. E., et al., sole fasteners for boots and shoes | 17,535 | “ “ terrets | 17,756 |
| “ P. et al., bolt cutters | 16,209 | McFall, W. B., thill supports | 16,370 |
| “ R. H., carriage seats | 16,304 | McFarlin, J. T., envelopes | 17,914 |
| “ “ top setters | 16,239 | McGieban, I. S., car-couplings | 15,990 |
| Leyshon, G., et al., composition for trimming plates | 17,826 | McGinlay, J., faucets | 16,556 |
| Liebrich, O., et al., tobacco improvement process | 16,426 | McGregor, W., hay tedders | 18,149 |
| Lightcap, W. H., feeding apparatus for threshing machine | 17,919 | McIntosh, C., air circulator for cars | 17,615 |
| Lillienfeld, D., force pumps | 17,041 | “ “ fire armours and respirators | 16,586 |
| Lima Paper Mills, egg and fruit carriers | 17,774 | McIntyre, A. F., et al., wire fences | 16,617 |
| | | “ J. H., et al., car-couplings | 16,155 |

| | | | |
|---|------------------------|--|--------|
| McKay, F., ointments..... | 16,845 | Masters, F. A., paper bag holder..... | 17,895 |
| " T. W., snow ploughs..... | 18,178 | Mathieu, J. A., cuspidor..... | 17,507 |
| " W. H., knitting machinery..... | 18,032 | Mathison, J., machine for securing buttons..... | 17,915 |
| " W., hydraulic cement..... | 17,038 | Maxim, S., oil lamps..... | 17,111 |
| " W., piastic cement..... | 17,239 | Maxwell, D., et al., harvesting binders..... | 17,112 |
| McKee, J., et al., carpet sweepers..... | 17,827 | May, R. C., churn motors..... | 16,692 |
| McKenzie, J. D. K., electric arc lamps..... | 17,671 | " E. S., et al., cigar-holders..... | 15,893 |
| " A., lamp heaters..... | 16,181 | Mayo, U. K., anaesthetics..... | 17,720 |
| " W., wheels for potato diggers..... | 17,988 | " " heating composition..... | 18,156 |
| McKevitt, A., button fastenings..... | 17,526 | " W. S., tonguing and grooving machines..... | 16,180 |
| McKillop, A., fruit pickers..... | 17,064 | Mayrand, P., car-coupler..... | 17,956 |
| McKinnon, S. E., shaft coupling..... | 17,209 | Meal, W. R., medicinal compounds..... | 16,466 |
| " L. E., vehicle dashes..... | 15,918 | Meagher, E. D., ploughs..... | 16,871 |
| McKown, A. W., vehicle springs..... | 16,263 | " M. W., et al., nut locks..... | 17,295 |
| McLachlan, J. C., harvesting machines..... | 16,702 | Meaton, E., et al., thrashing machine..... | 16,112 |
| McLain, E. L., horse collar pads..... | 17,269 | Melburn, L. A., vehicle spring..... | 16,592 |
| McLaughlin, R., buggy tops..... | 16,303 | Mellette, J., ribbon holders and reel..... | 17,732 |
| McLean, B. S., cant hook..... | 17,506 | Mellis, R., et al., compound for testing fabrics..... | 17,491 |
| " N., grain separators..... | 16,231 | Menze, F. W., low water alarm for steam boilers..... | 17,421 |
| McLellan, W. W., machine for operating signals..... | 16,705 | " " snow removers..... | 17,375 |
| McLeod, J. K., automatic car-coupler..... | 17,865 | Merriam, J. B., apparatus for the distillation of oils..... | 16,853 |
| " J. S., automatic air railroad signal..... | 17,225 | Merrick, A. R., spoons..... | 17,984 |
| " T. M., lamps..... | 17,240 | Merrill, G. P., means for unloading cars..... | 18,185 |
| McLintoch, C. H., et al., boots and shoes..... | 17,164 | " " wrenches..... | 17,698 |
| McMellon, F., steam engine..... | 17,523 | " H., et al., swivel hooks..... | 17,138 |
| McNair, W. L., reverberatory gas furnace..... | 18,015 | Merriman, L., grates..... | 17,970 |
| McNeile, A., apparatus for drying and seasoning timber..... | 17,619 | Messewey, R. A., refrigerators..... | 16,394 |
| McPherson, J., et al., wire fences..... | 16,617 | Metcalfe, G. A., ore separators..... | 16,809 |
| " J. D., machine for setting ties..... | 17,107 | Meyersbain, A., machine for perfecting cigars..... | 17,083 |
| " J. G., sand dryers..... | 17,405 | Michaëlis, H., et al., tobacco improvement process..... | 16,426 |
| McTighe, W. J., nut locks..... | 17,337 | Michael, K. F. and E. N., et al., glycerine process..... | 16,594 |
| Macdonald, D., elastic japan..... | 16,253 | Michaux, P. H. and F. A., et al., injectors..... | 16,118 |
| " J. levels..... | 17,141 | Midgagh, H. C., potato planter..... | 17,694 |
| Mace, C., et al., inclined plane and sled..... | 17,165 | Migan, T., sole stitch raisers..... | 16,395 |
| Macfarlane, C. A., et al., force pumps..... | 15,909 | Mignault, O., stump extractors..... | 17,121 |
| " T., salis ammonia..... | 16,430 | Milburn, J. P., cat feeding apparatus..... | 16,984 |
| " T., sulphide of zinc..... | 17,382 | Milburn, C. F., et al., tubular axle..... | 17,515 |
| Machin, A. J. J., et al., wrenches..... | 17,806 | Millar, C. and H. W., et al., cheese making apparatus..... | 18,092 |
| Mack, E., door hangers..... | 18,133 | Millen, G. H., et al., match splint machine..... | 18,184 |
| Mackenzie, J. U., electric visual indicator..... | 17,757 | " " " sulphurizing machine..... | 17,503 |
| Mackey, T. B., waggons..... | 16,619 | Miller, C. D., et al., hand rakes..... | 16,097 |
| Mackinnon, J. B., boots..... | 16,369 | " C. H., holsts..... | 17,052 |
| Macomber, S. M., hand corn planter..... | 17,906 | " C. M., monkey wrenches..... | 16,300 |
| Macoun, J., et al., thrashing machine..... | 16,112 | " E. G., et al., grease cups..... | 17,311 |
| Macpherson, J., et al., wire fences..... | 16,340 | " J., thresher and cleaner..... | 17,684 |
| Maddin, S. D., harvester..... | 16,700 | " J. H., railway track cleaner..... | 16,282 |
| Magin, M., faucets..... | 17,271 | " L. B., et al., sewing machine..... | 17,893 |
| Magoon, L., elevator and car..... | 16,143 | " W. R. and A. E., et al., window fasteners..... | 16,934 |
| Maguire, W. and J., waterproof coats..... | 17,627 | Mills, G. H., coat hooks..... | 17,662 |
| Mallory, G. H., paper pulp..... | 16,792 | " G. M., sandy whistles..... | 15,981 |
| Malloy, W., mode of applying magnetism..... | 17,005 | " J., centrifugal bolts..... | 15,899 |
| Maltby, W. L., roofing cement..... | 16,060, 16,175, 16,212 | " J., et al., nut lock..... | 18,007 |
| Mann, A. E., corset buxks..... | 16,900 | " J. H., et al., brake blocks..... | 16,123 |
| " D., grain scourers..... | 16,067 | " M. B., et al., drum stoves..... | 16,201 |
| Manny, J. P., harvesters..... | 17,143 | " W. and T. B., fishing reels..... | 15,874 |
| Manson, E. S., machine for cutting heel blank..... | 17,660 | " W. N., et al., door knobs and spindles..... | 16,100 |
| Mantion, J. H., washing machines..... | 16,236 | Milne, J., et al., veneer packages..... | 16,364 |
| " " et al., match sulphurizing machine..... | 17,503 | Miltenberger, T., hay rake..... | 16,691 |
| March, J., hay presses..... | 16,595 | Minneapolis (The) Harvester Works, grain binders..... | 16,478 |
| Marchand, H. E., measuring pumps..... | 17,025 | Minor, L. D., garment clasps..... | 16,453 |
| Marchiter, H., et al., car-couplings..... | 16,065 | Mitchell, B., et al., washing machines..... | 17,188 |
| Marcoux, M., shingle machines..... | 17,133 | " A., spark arresters..... | 16,094 |
| Mark, C. E., car-couplers..... | 16,034 | " H. F., et al., tubular axle..... | 17,515 |
| " " railway chairs..... | 16,033 | " G., car-couplers..... | 16,699 |
| Markle, J., metal lasts..... | 17,840 | " G. W., axle lubricators..... | 17,001 |
| Marland, A., nut machines..... | 16,041 | " J. W., et al., packing vessels..... | 16,636 |
| Marr, J., car-couplers..... | 16,765 | " O. J., spring beds..... | 16,488 |
| Marsh, G. A., can heading machine..... | 18,205 | Moeb, G., cigar bunching machines..... | 16,380 |
| Marshall, J., bowlder grapples..... | 17,049 | Moen, E. A., et al., barbed wire for fences..... | 17,176 |
| " T. T., seamless uppers for boots and shoes..... | 16,417 | Moffat, J. A., potato peeling machine..... | 16,840 |
| Marteeny, T. A., revolving sign..... | 17,864 | Moncur, J., tubular lanterns..... | 16,796 |
| Martel, A. F., et al., wire fences..... | 17,791 | Monk, H. and W., steam engines..... | 16,722 |
| " " construction car..... | 16,417 | Montagen, J. B., sash fasteners..... | 16,099 |
| Martin, D., et al., strap hinges..... | 16,833 | Moody, H. T., door hanger..... | 18,014 |
| " E. H., pumping engine..... | 16,932 | " W. D., fruit evaporators..... | 16,848 |
| " O. D. D., car-coupler..... | 17,437 | Mooney, J., cultivators..... | 16,311 |
| " R. T., calculators..... | 17,656 | Moore, B. F. and B., churning apparatus..... | 16,185 |
| " T., et al., car-couplings..... | 16,313 | " " churns..... | 16,846 |
| " W., car heaters..... | 16,065 | " C., et al., ham mooks..... | 16,980 |
| " W., pipe couplings..... | 16,164 | " G. R., et al., envelopes and letter sheets..... | 16,307 |
| Martindale, E. B., belt pulleys..... | 16,222 | " H. F., apparatus for preparing yeast for fermentation..... | 17,342 |
| Massey, C. A., et al., hay rakes..... | 16,326 | " S. E., bed bottoms..... | 17,119 |
| " (The) Man'g Coy, hay rakes..... | 16,157 | " T., et al., coal mining..... | 15,951 |
| " " horse rakes..... | 16,157 | " T. J., tags..... | 16,197 |
| Masie, J., machine for making barrels..... | 18,479 | " W. E., ventilators..... | 16,723 |
| Massey, G. H., clinometer..... | 17,850 | | |
| Master, D. D. M., elastic stockings..... | 17,752 | | |
| | 16,906 | | |

| | | | |
|---|--------|--|--------|
| Smith, G. T., middlings purifiers..... | 17,736 | Stocker, J., et al., sickle bars..... | 17,301 |
| " G. W., thimble skeins..... | 15,920 | Stogg, A. R., whisk holders..... | 16,778 |
| " H. C., improving the fire test of oils..... | 16,045 | Stollweck, H., steam boilers..... | 16,963 |
| " J., broom band..... | 17,999 | Stone, J. H., tubular lanterns..... | 17,653 |
| " J. et al., mowing machines..... | 16,071 | " R., grappling and hoisting apparatus..... | 17,525 |
| " J. M., et al., car trucks..... | 16,904 | Storm, E., two wheeled vehicles..... | 16,231 |
| " J. N., "..... | 16,904 | Stormer H. C. F., apparatus for the recovery of soda..... | 16,397 |
| " " lifting jacks..... | 16,379 | Storms F. W., preserving process..... | 17,090 |
| " J. R., dust collectors..... | 17,800 | Stroughton, W. R., et al., brake blocks..... | 16,123 |
| " J. U., mechanism for operating car brakes..... | 17,766 | Stone, J. H., kerosene lantern..... | 16,217 |
| " L., grain elevators..... | 17,247 | Strait, R. E., tubular wells..... | 16,615 |
| " M., scythe fasteners..... | 16,127 | Straith, P., sharpening machines..... | 16,814 |
| " N., binding chains..... | 17,126 | Strangeways, H. B. T., telephones..... | 16,089 |
| " P. H., et al., grain drills..... | 16,098 | Strobel, F., et al., thrashing machines..... | 16,014 |
| " S., et al., fog alarms..... | 16,464 | Stronger, W. B., et al., frog protector..... | 15,968 |
| " S. H., butter plates..... | 16,968 | Stroudley, W., apparatus for electric lighting on rail- way cars..... | 17,747 |
| " (The) Consolidating Co., consolidating machine | 16,977 | Strouse, J., corsets..... | 17,048 |
| " " Manuf. Co., butter plates..... | 16,968 | Strugill, J. H., et al., stock cars..... | 16,255 |
| " " " machine for cutting wooden plates..... | 17,310 | Strunk, D., grain blunders..... | 16,478 |
| " T. L., wire cloths..... | 16,937 | Stuart, A., creamers..... | 17,187 |
| " W., stump extractors..... | 17,453 | Stubbendorff, H., et al., boxes for shafting..... | 17,366 |
| " W., et al., harvesters..... | 16,936 | Sturgen, T., gates..... | 17,390 |
| " " tile ditcher..... | 17,942 | Sturttant, T. L., attrition mills..... | 16,314 |
| " W. F., et al., car brakes..... | 16,589 | Sumner, H., et al., gas engines..... | 16,261 |
| " " cleaning ash pas..... | 16,050 | " " " gas motor engines..... | 16,008 |
| " W. H., consolidating machine..... | 16,977 | Supplee, W. W., et al., lawn mowers..... | 16,482 |
| Smyth, S., stove and furnace grate..... | 16,675 | Susemihl, F. C. L. G., et al., oil box lid..... | 16,650 |
| " " magazine stove..... | 17,979 | Sutherland, G. R., et al., cigar holders..... | 15,893 |
| " " stove grates..... | 16,392 | Swan, A., electric lamps..... | 17,198 |
| " " "..... | 16,393 | " " "..... | 17,199 |
| Snell, T., et al., hand stamps..... | 15,896 | " " "..... | 17,200 |
| Snyder D., pots and kettles..... | 16,247 | " " "..... | 17,201 |
| " " "..... | 16,901 | " " "..... | 17,202 |
| " J. H., et al., horse collars..... | 16,791 | " " "..... | 17,202 |
| Sollers, N. D., net knitting boards..... | 17,306 | " " incandescent electric lamps..... | 17,467 |
| Solomon E., et al., punching and cutting machine..... | 16,380 | " " "..... | 17,468 |
| South, (The) Bend Iron Works, plough..... | 17,519 | " " mould for moulding bulbs of electric lamps | 17,466 |
| Southbridge (The), Optical Co., eye glasses..... | 17,834 | " J. W., secondary cells and batteries..... | 16,553 |
| Southworth, H. W., signaling apparatus..... | 17,042 | Swartzenburg, W. J., et al., whip holders..... | 16,137 |
| " O. T., wheels and axles..... | 16,320 | Swarzwont, W. B., lumber trimming machines..... | 17,617 |
| Spaulding, E. F., et al., fence posts..... | 17,129 | Sweaner, G., et al., ammonia engine..... | 17,920 |
| Spaun, A. F., fire extinguishers..... | 17,307 | Sweet, G. & L., et al., reapers..... | 16,271 |
| Speer, P. B., chimney tops..... | 17,924 | Sweet, G. & L., et al., reapers..... | 16,545 |
| Spencer, A. E., bluing paddles..... | 16,078 | Sweet, A. W., lubricators..... | 17,773 |
| " G. N., velocipedes..... | 16,731 | Switzer, W. C., post hole diggers..... | 17,388 |
| " J. M., cooking stoves..... | 16,748 | Swmou, T., et al., fifth wheel for vehicles..... | 17,501 |
| Sperry, A. W., sharpener for knives..... | 18,183 | Taber, F. P., evaporating apparatus..... | 16,991 |
| " E. A., dynamo electric machines..... | 16,863 | " H., machine for sawing siding or clapboards..... | 17,461 |
| Spooler, A. F., singe tree clips..... | 18,045 | Taft, G. C., drilling machines..... | 16,985 |
| Sprague, W., et al., lifting jacks..... | 17,550 | Tanner, F., electrical annunciator..... | 18,102 |
| Springer, J. H., eye bars..... | 18,144 | " W. J., apparatus for washing and separating gold and silver..... | 17,087 |
| St. Albans (The), Manuf. Co., et al., drying appara- tus..... | 16,317 | Tanner, W. J., treatment of gold and silver ores..... | 17,588 |
| St. George, A. F., apparatus for receiving and trans- mitting telephone..... | 17,837 | Tarbell, S. H., et al., stamp mills..... | 18,168 |
| St. John, G. W. & G. H., hay elevators..... | 17,889 | Taylor, A. T., et al., composition for tinning plates..... | 17,826 |
| " W. W., piston packing..... | 18,082 | " C., et al., roofing compounds..... | 16,073 |
| St. Pierre, X., oil cans..... | 16,987 | " F. C., et al., entire wheat flour..... | 16,596 |
| Stabber, J. P., telephones..... | 16,091 | " H. A., et al., telegraphs..... | 16,432 |
| Stackhouse, J. O., snow plow..... | 16,409 | " H. C., screw cutting machines..... | 16,662 |
| Stafford, M. S., potato digging machine..... | 17,733 | " H. G., metal truck wheels..... | 17,495 |
| Staily, N. K., tag bottle..... | 17,384 | " J. L., pipe wrenches..... | 18,115 |
| Stanton, L. J. & I., et al., harrow teeth..... | 16,477 | " M., et al., distilling and condensing appara- tus..... | 16,168 |
| Staples, H. W., snow shovels..... | 16,959 | " S. C., windows..... | 16,790 |
| " J., railway frogs..... | 17,146 | " W., nails or spikes..... | 16,407 |
| Stearns, N. W., et al., culinary forks..... | 15,969 | " W., et al., electric current governor..... | 18,204 |
| Stebbins, F. P., churns..... | 18,108 | " " " " meters..... | 18,039 |
| Steber B. T., machine for making boxes..... | 17,344 | " " " lath trimming machines..... | 15,926 |
| " " match machines..... | 17,094 | " " " regulator batteries..... | 16,688 |
| " " match split machines..... | 16,384 | " " " secondary "..... | 16,621 |
| Steel, R., et al., inclined plane and slide..... | 17,165 | Tennent, T., et al., artificial horizon for sextants or oc- tants, &c..... | 17,173 |
| Steinberger, L., bag and twine holder..... | 16,599 | Terry, I. C., et al., car trucks..... | 17,399 |
| Stephen, R. M. & J. P., et al., compound for testing fabrics..... | 17,491 | Thatcher, F. R., et al., bottle stoppers..... | 18,155 |
| Stephens, J. A., knife edging machines..... | 16,402 | " H. D., et al., preserving milk..... | 18,094 |
| Stephenson J. S., boats..... | 17,681 | Thayer, J. M., car heaters..... | 17,339 |
| Stern, W. A., et al., cigar lighters..... | 16,805 | Therien F., car couplings..... | 16,948 |
| Sterling, J. A., et al., spark arresters..... | 16,447 | Thigpen, J., car couplers..... | 17,275 |
| Stevens, J., automatic weighing machine..... | 17,610 | Thollifer, J. M. A., et al., process for extracting metals from their ores..... | 18,094 |
| " J. C., apparatus for brazing metals..... | 17,323 | Thomas, C., screw driver..... | 17,026 |
| " R. W., et al., envelopes and letter sheets..... | 16,307 | " J., devices for applying anti-friction rollers to journal boxes..... | 17,321 |
| Stewart, D., et al., nut locks..... | 17,182 | Thomas, J. E., et al., boiler cleaners..... | 16,218 |
| " E., heating stoves..... | 16,332 | " J. W., stoves..... | 16,781 |
| " W. W., fountain pen holders..... | 16,562 | Thompson, C., et al., evaporating apparatus..... | 16,066 |
| stillis, Y. C., bath for press copying..... | 17,237 | " G. W., deoxidising furnace..... | 18,084 |
| Stimpson E. B., boots and shoes..... | 16,204 | " J. T., loom shuttles..... | 18,134 |
| Sutt, W., et al., boiler cleaners..... | 16,218 | | |

| | | | |
|--|--------|---|--------|
| Thompson, N. C., hay tedders..... | 18,149 | Valentine, N. S., et al., burnishing machines | 17,799 |
| " N., et al., bottle stoppers..... | 16,138 | Vallant, G., boot..... | 17,896 |
| " S. R., bark cutting machine..... | 16,419 | " " seams for fine boots..... | 17,882 |
| " T. P., kerosene oil lamps..... | 17,253 | Vanallan, M., et al., thrashing machines..... | 16,112 |
| " W., sash regulators..... | 16,495 | Van Allen, C. D., et al., butter packages..... | 16,938 |
| Thomson, C., fish meal..... | 17,137 | Van Brunt, D. C., cultivator..... | 17,968 |
| " C., et al., fish drying houses..... | 15,962 | Vanderlip, W., clothes dryers..... | 16,454 |
| " E., air blast attachment..... | 17,758 | Van Dyke, G. H., washboards..... | 16,325 |
| " " commutators for dynamo electric machine..... | 17,661 | Van Duzen, E. W., lubricator for loose pulleys | 17,272 |
| " " dynamo electric generators..... | 17,662 | " " steam water elevator..... | 17,959 |
| " " electric arc lamps..... | 16,051 | " Hoevenbergh, H., telegraphic printing instrument..... | 18,209 |
| " " " light..... | 18,051 | Vankeuren, J. A. & L. N., waterproof blacking..... | 16,635 |
| " " " current regulator..... | 18,052 | Van Meter, A. C., et al., door knobs and splines..... | 16,100 |
| " " " lamp..... | 16,954 | " Norman, J., washing machine..... | 18,222 |
| " " " arc lamps..... | 17,397 | " Patten, S., waggon..... | 16,156 |
| " " " distribution..... | 16,911 | Vanstone, I. M., corset..... | 17,941 |
| " " " magnetic devices..... | 15,917 | Van Wile, P. G., globe valves..... | 16,037 |
| " " " flush preventer for electric conductors..... | 17,680 | Varnum, W., step ladders..... | 16,777 |
| " G., process for treating copper pyrites..... | 17,019 | Vaughan, H. W., colouring matter..... | 16,890 |
| " R. W., grooming brushes..... | 17,224 | " " dye stuffs..... | 16,891 |
| Thornburg, J. S., combined bevel protector and measure..... | 18,098 | " J. W., putting out machine..... | 16,262 |
| Thorne, R., et al., tricycle..... | 17,851 | Venner, W. G., overalls and pantaloons..... | 18,171 |
| Thurber, H. K., car soldering machine..... | 17,764 | Vermilya, R. D., et al., knock down tables..... | 16,797 |
| Tibbles, C. E., sewing machine..... | 16,740 | Vermont (The), Snath Co., scythe fasteners..... | 16,127 |
| Tiebner, A. C., treating alcoholic liquors with electricity..... | 17,637 | Vincent, C. W., et al., dynamo electric machines..... | 16,061 |
| Tigniere, A., punches for marking cattle..... | 15,982 | Vinet, J. B. & A. S., hay press..... | 17,704 |
| Tinney, W., harrow..... | 17,933 | " " " et al., universal joints..... | 16,823 |
| Tobin, T., chamfering chambers..... | 17,840 | Vinton, T. J., fire escapes..... | 16,506 |
| Togus, T. M., et al., rack for umbrellas..... | 17,960 | Volkmar, E., et al., secondary batteries..... | 16,499 |
| Toledo, (The), Mower and Reaper Co., grain carriers..... | 15,912 | Vulcan (The), Iron Works Co., friction clutch..... | 17,071 |
| Tolman, J. P., cordage webbing, &c., machine..... | 17,513 | Wade, G. W., et al., rotary engines..... | 16,142 |
| Tomlinson, J., et al., butter packages..... | 16,342 | Wadhams, O. E., chain pump bucket..... | 18,203 |
| " " veneer packages..... | 16,361 | Wadsworth, A. B., lathe chuck..... | 16,601 |
| " W. M., et al., boots and shoes..... | 17,164 | Wagstaff, J. H., indexes..... | 16,023 |
| Tongas, L. T., apparatus and method of cutting elastic soles or heels..... | 17,326 | Walem, U. H., electro coating process..... | 17,634 |
| Toombs, J. E., windmills..... | 17,400 | Wales, W. S., et al., fan boxes..... | 16,146 |
| Torrey, D., railroad brakes..... | 17,263 | Walker, D. H., et al., reduction of iron ore..... | 18,214 |
| " I. T., combination tools for cutting wire and tin seals off railway cars..... | 17,971 | " H. R., spark arresters..... | 18,165 |
| Tostevin, T., rail chairs..... | 17,378 | " J. M., et al., thrashing machines..... | 16,112 |
| Tourangin, E., reduction of iron ore..... | 18,214 | " W. L., et al., iron fence..... | 16,497 |
| Tousey, D. F., et al., gauge cocks..... | 18,985 | Walkrip, L., pigment distributors..... | 17,066 |
| Townshend, J. E., spring mattresses..... | 16,715 | Walkup, L., paint distributor..... | 18,113 |
| Tracy, A. C., milking pails..... | 16,664 | Wall, F. J., electric bell pull..... | 17,614 |
| " D., railway switches..... | 15,998 | Wallace H. D., stone dressing machine..... | 17,936 |
| " " switch stand..... | 15,997 | Walsh, F. A., art of constructing sheet metal..... | 17,414 |
| Trall, A. W., carbureting apparatus..... | 17,780 | " J., means for conveying motive agents..... | 15,928 |
| Trant, J. A., try squares..... | 16,382 | " M. J., car heating apparatus..... | 15,929 |
| Travers, V. P., hammocks..... | 17,069 | " M. J., et al., apparatus for heating railway carriages..... | 16,198 |
| Traylor, R. W., journal box and bearing..... | 17,561 | Walter J., metal roofing..... | 16,766 |
| Tremblay, E., medicinal syrups..... | 17,215 | " L., et al., disintegrating machines..... | 16,724 |
| " Z., axes..... | 16,237 | Walton, E. J., et al., bags for fertilizers..... | 16,012 |
| Trenor, J. J. D., watch dials..... | 17,359 | Walz, S. H., hand cars..... | 15,953 |
| Triplett, L., nut locks..... | 16,725 | Wanee, S., et al., car brakes..... | 17,285 |
| Trippe, S. L., apparatus for amalgamating and separating ores by means of mercury..... | 17,713 | Wanless, J. A., pillow sham holders..... | 16,145 |
| Trites, J. S., railway semaphores..... | 16,248 | Wanzer R. M., sewing machines..... | 16,931 |
| " " station signal..... | 17,745 | Waplington, W. W., metallurgic gas furnace..... | 17,110 |
| Trott, S., et al., telegraph cables..... | 16,644 | Ward, F., et al., hay forks..... | 18,139 |
| Troy, R., et al., washing textile fabrics..... | 17,286 | " G. B., machine treadles..... | 16,224 |
| True, O. J., et al., switch stands..... | 16,693 | " J. H., car couplers..... | 16,199 |
| Tucker, C. B. & J., car couplings..... | 16,888 | " U., glass roof..... | 17,589 |
| " F. O., stop motions for looms..... | 16,022 | Wardell, J. M., et al., rotary engines..... | 16,142 |
| " T. P., tanning process..... | 17,082 | " P., pad for slate corners..... | 17,530 |
| Tuerk, T. W., water motors..... | 16,205 | Warin, J., oars..... | 18,150 |
| Tupper, H. E., W. & J. A., et al., evaporators..... | 16,362 | Waring R. S., insulating material for electric uses..... | 17,607 |
| Turner, A., harvesters..... | 18,136 | " " et al., process of insulating wires for electric uses..... | 17,606 |
| " C., welt and welt guides for sewing machines..... | 17,540 | Warm, W. E., door hangers..... | 16,639 |
| " G. H., et al., apparatus for removing sand bars..... | 18,106 | Warnock, A., axles..... | 16,680 |
| " J., track layer..... | 16,798 | Warren, A., et al., car trucks..... | 17,399 |
| " R. W., culinary forks..... | 15,969 | " E. A., et al., tags..... | 16,197 |
| " W. B., et al., car brake..... | 17,904 | " J. T., potato digging machine..... | 17,733 |
| " " valves and gearing..... | 17,822 | " W., et al., entire wheat flour..... | 16,596 |
| Turver, W. W., pessaries..... | 18,026 | Washburn and Moen (The), Manufacturing Co., hooks of wire bale ties..... | 15,965 |
| Tye, J., wire coiling machines..... | 15,958 | Washburn and Moen (The), Manufacturing Co., blanks of wire bale ties..... | 15,964 |
| Tyson, C., steam generators..... | 16,114 | Washbrun, N., car wheels..... | 16,986 |
| Ulric, J. C., et al., candle apparatus..... | 16,487 | Wass, D. D., et al., feed water purifier..... | 16,583 |
| Upston, C. S., halters..... | 17,793 | Waterhouse, J. J. A., centrifugal reels..... | 16,999 |
| Uric, J. M., et al., tinner's tools..... | 17,903 | Waterson, J., car coupling..... | 17,443 |
| Usher, R. G., et al., padlock..... | 17,985 | Watkins, C., spring lever rotary swing..... | 17,115 |
| Valle, J. H., pumping engines..... | 17,346 | " G., door knob roses..... | 17,742 |
| | | " J. H., pump..... | 17,497 |
| | | Watson, A. B., et al., carpet sweepers..... | 17,827 |
| | | " G. E., sleigh..... | 17,728 |
| | | " J., et al., reapers..... | 16,271 |

| | | | |
|---|---------------|---|--------|
| Watson, N., truck flangers..... | 16,847 | Wild, C. R. and W. E., grain cleaners..... | 16,974 |
| " T. G., coal oil stove..... | 17,482 | Wildner, W. H., hanging or sliding doors..... | 17,433 |
| Way, C. A., snow shovels..... | 16,974 | Wildern, A., vehicles..... | 16,618 |
| " G. A., fire back for stoves and ranges..... | 17,477 | Wilds, J., fasteners for gloves..... | 17,788 |
| Wayne, A. M., smoke consumer..... | 17,437 | Wilkes, J., nut lock..... | 17,478 |
| Wayt J. E., et al., bread raising ovens..... | 16,491 | Wilkin, T. S., reciprocating saw mill..... | 16,346 |
| Weathers, J., lifting jacks..... | 16,379 | " " saw stretchers..... | 16,428 |
| Weaver, J. H., et al., drive chain..... | 17,136 | Wilkins, A. G., button fasteners..... | 17,775 |
| Webb, F. W., locomotives..... | 16,274 | " " button fastening implement..... | 17,762 |
| " N., railway brakes..... | 16,047 | " " egg and fruit carriers..... | 17,774 |
| Webber, W., wagon springs..... | 16,206 | " " machine for setting buttons..... | 17,721 |
| Weber, T. A., bale band machine..... | 16,975 | " G. A., telephone supports..... | 17,734 |
| Webster, A. J., et al., sled brake..... | 17,977 | " W. F., washing machines..... | 16,870 |
| " J. F., pencil fasteners..... | 17,204 | Wilkinson, E., clutches..... | 17,080 |
| " J. H., et al., elevators..... | 16,935 | Willcox, J. S. M., fire escape..... | 17,673 |
| Weeks, W. M., felt boots and shoes..... | 17,219 | Willard, Z. A., desulphurizing..... | 15,936 |
| Weiller, L., silicious copper..... | 16,293 | Williams, A. H., postoon..... | 17,505 |
| " " and silicious bronze..... | 17,824 | " E. R., et al., pipe-couplings..... | 16,285 |
| Welch, B. R., vehicle brakes..... | 17,102 | " G. C., steam injectors..... | 15,878 |
| Weld, C. J., et al., shingle machines..... | 16,804 | " G. H., pistons for steam engines..... | 17,430 |
| " " water wheels..... | 17,549 | " H. B., pipe wrench..... | 17,940 |
| Weller, S. P., et al., car brakes..... | 17,285 | " J., regulator for engine governor..... | 18,083 |
| Wellington, D., toilet apparatus for ships..... | 16,005 | " M. T., sewer traps..... | 18,104 |
| Wells, D. G., wire barbing machines..... | 16,449 | " R., barrel hoops..... | 16,481 |
| " H. P., carriages..... | 18,193 | " R., et al., sawing machinery..... | 16,862 |
| " P., water meters..... | 16,141 16,343 | " T. I., reaping machines..... | 16,049 |
| Wentworth, I. J., et al., gauge cocks..... | 18,085 | " W. W. and W. A., soldering apparatus..... | 15,872 |
| Werts, W., horse shoe nail machines..... | 16,085 | Willard, S. W., elevator shafts..... | 17,442 |
| West, E. S., et al., sash cord fasteners..... | 16,103 | Willmer, S. L., wrench and pincher..... | 16,889 |
| " F. M., ice creepers..... | 17,636 | Wills, G. W., cross cut saws..... | 18,152 |
| " J., et al., thrashing machines..... | 17,007 | Wilson, C., et al., lawn mowers..... | 16,482 |
| " T., et al., sewer traps..... | 16,019 | " C. R. and J. C., vehicle springs..... | 16,925 |
| Westcott, N. W., looms..... | 16,403 | " J. B., umbrellas..... | 16,856 |
| Westlake, F., et al., match machines..... | 16,978 | " J. C., washing machine..... | 17,910 |
| Weston, F., et al., coal gas..... | 16,009 | " J., et al., deoxidizing furnace..... | 18,034 |
| Westphal, H., revolving show cases..... | 16,567 | " M., et al., cooking stoves..... | 16,258 |
| Whealy, J., steam ploughs..... | 17,393 | " R. P., smelting furnace..... | 16,738 |
| Wheat, C., et al., heating apparatus..... | 17,355 | " T., et al., rack and trough..... | 17,056 |
| Wheeler, B. S., dish washing machine..... | 18,111 | " W. H., et al., steam boilers..... | 16,389 |
| " E. H., et al., devices for attaching pumps to cans..... | 17,427 | Windsor, E. G., et al., lighting apparatus..... | 16,523 |
| " C., Jr., harvester..... | 17,548 | Windt, H. T., vermin traps..... | 17,771 |
| " S., et al., car-coupler..... | 16,581 | Wing, L. J., rotary engine..... | 17,484 |
| Whelan, J., fire box..... | 17,588 | Winter, J. G., gang circular saw mill..... | 16,510 |
| White, C. N., washing machines..... | 18,143 | " J. R., fire escapes..... | 16,654 |
| " D. M., et al., sand band..... | 18,072 | Wisner, J. O. and W. S., et al., seeding and drilling machines..... | 17,963 |
| " G. H., coal chutes..... | 16,427 | " " " " seeding machines..... | 17,168 |
| " J., hat holders..... | 17,235 | " " " " spring hoes..... | 16,864 |
| " J., adjustable table and disk..... | 18,016 | " " Son & Co., spring hoes..... | 17,833 |
| " J. B., et al., horse shoes..... | 16,194 16,195 | Witham, E., calks..... | 16,626 |
| " M., method and apparatus for signals of vessels..... | 17,911 | Wittman, J. M., music leaf-turner..... | 17,106 |
| " (The) sewing machine Co., sewing machine..... | 18,215 | Wolfe, H. S., stock cars..... | 16,480 |
| " U., roofing composition..... | 17,565 | Wood, A., et al., mowing machines..... | 16,071 |
| " U., roofing felt..... | 17,564 | " R., splints for the forearm..... | 17,888 |
| " W. R., gates..... | 16,698 | " W., et al., water traps..... | 16,674 |
| Whitehall, S., et al., vehicle wheels..... | 17,156 | Woodard, A. N., wagon jacks..... | 17,009 |
| Whitehead & Atherton (The) Machine Co., machinery for opening cotton..... | 16,703 | Woodbridge, A. J., steam boiler furnace..... | 17,983 |
| " (The) Machine Co., carding machines..... | 16,750 16,972 | " J. E., et al., metal working tools..... | 15,913 |
| " (The) Machine Co., condenser..... | 16,970 | Woodbury, M. L., composition for cooling-journals..... | 17,603 |
| " J., et al., steam generators and furnaces..... | 16,234 | Woodham, A. F., ice velocipedes..... | 15,890 |
| " W. E., carding machines..... | 16,750 16,972 | Worhouse, O. E., et al., electric lighting..... | 18,112 |
| " machinery for opening cotton..... | 16,703 | Woodward, A., bucket and stool..... | 17,029 |
| Whitely, W. N., et al., grain binders..... | 18,207 | " I. C., et al., smelting furnace..... | 16,738 |
| Whiting, E., car axle-boxes..... | 16,947 | " N. S., fog alarms..... | 16,464 |
| " et al., car trucks..... | 16,904 | Woolsey, W., et al., sleigh shafts..... | 16,668 |
| " H. W., et al., vapor generators and burners..... | 17,261 | Worcester (The) Barb Fence Fence Co., machine for applying to fence wire..... | 17,070 |
| " vapour generator..... | 17,283 | Worden, W. S., drawing apparatus..... | 17,455 |
| " J. L., flat brushes..... | 16,851 | Worrell, S. E., grain cooling and drying..... | 16,917 |
| Whitman, R. S. and W. W., et al., hoop cutters..... | 16,876 | Worthington, C. C., duplex engines..... | 17,727 |
| " " milk vats..... | 16,875 | Wortman, W. H., et al., hay forks..... | 18,139 |
| " W., et al., fish-dressing machines..... | 16,411 | Wray, S. T., polishing-wheels..... | 16,877 |
| Whitney, J. H., sewing machines..... | 17,014 | Wright, D. P., et al., spark-arresters..... | 16,447 |
| Whipple, J. P., paint distributors..... | 16,679 | " D. S., rotary fans..... | 18,057 |
| Whittaker, C., faucets..... | 18,151 | " J. A., impervious packages..... | 15,901 |
| " hampers for horses..... | 17,004 | " J. J., commutator and regulator for dynamo electric machines..... | 17,319 |
| Whittier, J. G., sole an upper protectors..... | 15,976 | " J. J., regulator for electric lamps..... | 17,158 |
| Whard, G., sulky ploughs..... | 18,129 | " S., barrel-making machines..... | 16,424 |
| " H., et al., sulky ploughs..... | 18,117 | " S. T., rheumatic remedy..... | 17,707 |
| Wiggins, J. G., shoe buttons..... | 17,731 | " W., spring waggons..... | 15,948 |
| Wilbur, A., flanging machines..... | 17,152 | Wurtz, H., dry destructive distillation of coal..... | 17,811 |
| " A. O., vehicle springs..... | 16,670 | Wytam, E., preparation of food..... | 18,158 |
| " J. W., churn power..... | 17,696 | Wyley, W., shingle-machines..... | 16,283 |
| Wilcox R. G., horse shoes..... | 18,910 | Yagn, N., water-power apparatus..... | 17,998 |
| " W. R., et al., butter trays..... | 17,531 | Yale, G., manufacture of fuel..... | 17,131 |
| | | Yates, A. P., cigar-clipper..... | 16,716 |
| | | Yost, A. R., et al., rack and trough..... | 17,056 |

| | | | |
|---|--------|--|--------|
| Young, A. R., feed water backs for boilers..... | 17,750 | Zeigler, L. H., et al., fire engines..... | 18,175 |
| " J., et al., spinning and doubling frames..... | 16,812 | Zellers, M. M., button-fastening implements..... | 17,762 |
| " M., et al., grain-binder..... | 17,520 | Zerr, J., fire engine..... | 17,951 |
| " W., plashed hedges..... | 16,188 | Zeegler, E. and B. H., buggy gearing..... | 17,784 |

| | | | |
|---|--------|---|--------|
| Boots and Shoes, lasting of, L. Coté..... | 17,351 | Buttons, decorating, C. G. Dobbs | 16,708 |
| " " " plate for, J. Borrett | 18,169 | " machine for securing, J. Mathison..... | 17,915 |
| " " " sole fastenings for, S. W. Robinson et al..... | 17,535 | " " setting, M. M. Jeller et al..... | 17,721 |
| " " " uppers for, T. T. Marshall..... | 17,864 | " holes stays, E. Hambuger | 18,194 |
| " felt, J. Brandy..... | 17,217 | " shoe, J. W. Wiggins | 17,731 |
| " " W. M. Weeks | 17,249 | Cable coatings and coverings, H. A. Clark | 16,280 |
| " gaiter, E. B. Simpson..... | 16,204 | Cake machines, W. S. Owens | 16,757 |
| " lasts and blocks for, R. Clerke, et al..... | 17,753 | Calculators, R. T. Martin..... | 16,313 |
| Boots or shoes, G. H. Clarke, et al..... | 17,921 | Calendars, E. N. Heath..... | 16,225 |
| " seams for, G. Valiant | 17,882 | " perpetual, W. F. Piercy..... | 17,485 |
| Boring apparatus, T. English | 18,114 | Can filling machine, fish, M. Jensen | 18,009 |
| Bottle and jar stoppers, G. Ducro..... | 17,583 | " heading machine, G. A. Marsh..... | 17,049 |
| " stoppers, N. Thompson..... | 16,138 | " means for closing, T. G. F. Dolby..... | 18,190 |
| " " powder, R. H. T. Nesbit..... | 15,995 | " opener, J. Rath..... | 17,886 |
| " " F. B. Thatcher, et al..... | 18,155 | " sheet metal, E. Norton..... | 17,722 |
| " " J. M. Lewin | 16,348 | " sheet metal, F. A. Walsh | 17,414 |
| Bottles for aerated liquids, H. Codd | 17,153 | " soldering apparatus, E. and O. W. Norton..... | 18,212 |
| Bracket pieces, screen frames, E. N. Porter, et al | 16,484 | " " furnace, J. Shank, et al..... | 16,367 |
| Brackets, air fixtures, F. Gross | 17,227 | Candle apparatus, A. F. Collette, et al..... | 16,487 |
| Brackets, portable, C. W. Baer..... | 17,045 | Candles, G. H. Kirk..... | 17,413 |
| Brake, vehicle, B. R. Welch | 17,102 | Candlesticks, C. Sherman, et al..... | 17,214 |
| " waggon, A. W. Shue..... | 17,735 | Candy whistles, G. M. Mills..... | 15,981 |
| Brazing metals, apparatus for, J. C. Stevens..... | 17,323 | Canning meat, &c., T. Levi..... | 16,995 |
| Bretzel cutters, T. H. Butler, et al..... | 17,244 | Canoe keelers, J. S. Stephenson..... | 17,631 |
| Brick buildings, staining composition for T. Castle..... | 16,501 | Cant hook, B. S. McLean..... | 17,506 |
| " machine, W. Pennell..... | 18,159 | " lever, A. Sanford..... | 17,415 |
| " " C. Chambers, Jr..... | 17,679 | Car brake, A. D. Kilborn, et al..... | 16,589 |
| " " C. Hales | 18,210 | " C. Higham | 16,223 |
| " machines, E. F. Andrews | 16,902 | " D. Torrey..... | 17,263 |
| " " L. B. Kennedy | 17,190 | " H. A. Banning..... | 16,358 |
| " mould sanding machine, J. A. Buck..... | 16,597 | " L. H. Hebert, et al..... | 17,705 |
| Bricks, P. Leelove, et al..... | 16,123 | " N. Webb..... | 16,047 |
| " double clamping, J. Darrigan..... | 16,618 | " R. Johnston | 16,576 |
| " staining for buildings, T. Castle..... | 16,571 | " S. P. Weller, et al..... | 17,285 |
| Bridge girders and beams, T. Barland..... | 17,782 | " (The) Congdon Car Brake Shoe Co..... | 16,434 |
| Bronze, silicious, manufacture of, L. Weller..... | 16,293 | " W. B. Turner, et al..... | 17,904 |
| Broom band, J. Smith..... | 17,999 | " blocks, B. F. Haldeeman, et al..... | 16,123 |
| Brush, boot, C. Boeckh..... | 17,845 | " operating mechanism, J. G. Schiller, et al..... | 17,766 |
| " circular, B. F. Quimby..... | 16,520 | " rim, T. B. Howe..... | 17,953 |
| Brushes, D. A. McDonel..... | 16,780 | " shoe, J. F. Curtice..... | 17,700 |
| Brush, flat, J. L. Whiting..... | 16,852 | " shoe, J. J. Lappin | 17,213 |
| Brushes, grooming, R. W. Thompson..... | 17,224 | Car buffer, air, W. Crouch, et al..... | 16,535 |
| Buckle and snap, J. A. Park, et al | 17,167 | " coupler, J. M. Plunkett..... | 16,574 |
| " harness, J. A. Park, et al | 17,470 | " " N. T. Cowell..... | 17,516 |
| " trace, E. Kraft..... | 17,829 | " " T. H. Ambrose..... | 17,658 |
| Buckles, J. A. Park, et al..... | 17,372 | " couplers, A. Rice, et al..... | 16,581 |
| " and loops, L. Hartson | 17,687 | " " A. W. Clark..... | 15,908 |
| Buggy gear, spring for, J. R. Hawkey | 17,654 | " " C. E. Mark | 16,034 |
| " gearing, E. Ziegler, et al..... | 17,784 | " " C. F. and E. R. Clapp, et al..... | 17,663 |
| " tops, D. Conboy..... | 17,059 | " " G. Mitchell..... | 16,699 |
| " " "..... | 17,060 | " " H. Graham..... | 17,880 |
| " " R. McLaughlin | 16,308 | " " J. H. Ward..... | 16,199 |
| " " W. Hodge..... | 16,052 | " " J. K. McLeod..... | 17,865 |
| Burglar alarm, B. Fay | 17,980 | " " J. Marr | 18,205 |
| " " and sash fasteners, J. Brooke..... | 15,877 | " " J. O'Conner | 17,786 |
| Burnishing machine, N. S. Valentine, et al..... | 17,799 | " " J. Thijsen..... | 17,275 |
| Burr scraper, J. H. Lancaster..... | 17,078 | " " O. D. D. Martin..... | 17,956 |
| Bustle, C. W. Higly | 16,789 | " " P. Mayrand..... | 17,756 |
| Butter, apparatus for treating artificial, J. Hobbs..... | 17,268 | " " R. Bigney..... | 16,214 |
| " artificial J. Hobbs | 17,420 | " " T. A. Cullivan, et al..... | 17,912 |
| " manufacture of, The Powell Man'g. Co..... | 16,788 | " " T. J. Hilliard..... | 17,303 |
| " oleomargarine, J. Hobbs..... | 17,290 | Car-couplings, A. H. Armstrong..... | 16,803 |
| " packages, C. D. Van Allen, et al | 16,988 | " " C. A. Huth..... | 17,317 |
| " " J. Tomlinson, et al | 16,342 | " " C. B. and J. Tucker..... | 16,888 |
| " plate, The Smith Man'g. Co..... | 16,968 | " " C. Devlin | 17,878 |
| " trays, W. R. Wilcox, et al..... | 17,531 | " " C. H. Pelton, et al..... | 16,884 |
| " tubs, H. F. Coombs..... | 16,965 | " " C. J. Edwards | 17,688 |
| " " W. H. Lynch..... | 17,749 | " " C. K. Cordrey..... | 16,880 |
| " workers, C. E. Horn | 17,074 | " " D. W. Haines, et al..... | 16,729 |
| Button decorating, C. G. Dobbs | 16,708 | " " E. J. Burns..... | 16,527 |
| " fastener, A. G. Wilkins..... | 17,775 | " " E. Ingram..... | 18,077 |
| " " A. W. Ham | 18,023 | " " E. L. Lutton..... | 16,001 |
| " " J. Bowden..... | 18,219 | " " E. S. Cram, et al..... | 16,063 |
| " fastenings, A. McKevitt..... | 17,526 | " " F. Therien..... | 16,948 |
| " fastening apparatus, W. A. Boland | 16,400 | " " G. W. Eltzroth, et al..... | 16,043 |
| " " S. L. Pratt..... | 17,219 | " " H. Keller | 16,896 |
| " " implement, M. M. Zeller, et al..... | 17,161 | " " H. Marcheter, et al..... | 16,065 |
| " " "..... | 17,762 | " " J. C. Blocker..... | 17,274 |
| " for gloves, E. Pringle..... | 17,221 | " " J. D. Kiely..... | 16,683 |
| " hole stays, E. Hambuger | 18,194 | " " P. B. and D. Rarey..... | 17,184 |
| " setting instrument, G. H. Alton..... | 17,416 | " " J. Waterson..... | 17,443 |
| " setting machine, S. L. Pratt..... | 17,218 | " " J. W. Oulton..... | 15,632 |
| " setting machine for, M. M. Jeller et al..... | 17,721 | " " L. Anderson, et al..... | 17,172 |
| Buttons, N. C. Newell..... | 17,024 | " " L. Hatfield..... | 16,953 |
| " R. Roschman | 18,056 | " " L. N. Bedford..... | 16,953 |
| " apparatus for fastening, W. A. Boland | 16,400 | " " N. L. Davis, et al..... | 16,155 |
| | | " " N. M. Hale, et al..... | 16,165 |
| | | " " P. F. Panabaker..... | 17,834 |

| | | | |
|--|----------------|---|--------|
| Car-couplings, The Atwood Railway Wheel Co'y..... | 15,990 | Carts road, J. T. Barns..... | 16,713 |
| Car doors, seals for, E. J. Brooks..... | 16,086 | Cash and parcel carriers, G. R. Elliott, et al..... | 17,162 |
| " draw bars, T. J. Hilliard..... | 17,303 | " " conveyor, " "..... | 17,581 |
| " " W. F. Chase, et al..... | 16,063 | Cash carriers, The Lamson Cash Railway Co..... | 17,001 |
| " freight heating apparatus, Heating Co..... | 16,486 | " " W. S. Lamson..... | 15,992 |
| " heaters, J. M. Thayer..... | 17,339 | Cash conveying system, G. R. Elliott, et al..... | 17,581 |
| " " W. Martin..... | 16,164 | Cash stoppers, W. W. Jackson..... | 16,512 |
| " heating, L. Fitzgerald..... | 15,928, 15,929 | Casks, wooden, Z. S. Lawrence..... | 17,609 |
| " leveller of gravel or track, &c., D. L. Harris et al..... | 18,060 | Castings, chilled iron annealing, E. Jenkins, et al..... | 17,528 |
| " nippers and seals, W. E. Power, et al..... | 16,245 | " iron box piling, E. G. Scovill..... | 16,339 |
| " platforms hood, adjustable, C. C. Smith..... | 18,002 | " hollow wares, J. B. Harker..... | 17,616 |
| " " N. P. Cowell..... | 17,472 | Catamenial sacks, J. G. Campbell..... | 16,815 |
| " seals, door, E. J. Brooks..... | 16,086 | Cattle punch for marking, A. Tigniere..... | 16,985 |
| " sheathing, R. Fulton, et al..... | 16,465 | " ties, A. Bynell..... | 16,309 |
| " shunter, L. Collins..... | 16,807 | " " A. L. T. H. Baker..... | 14,110 |
| " signals, automatic safety, W. H. Rushforth..... | 17,635 | Cement, hydraulic, W. McKay..... | 17,058 |
| " springs, spiral, E. Cliff..... | 17,842 | " plastic, W. McKay..... | 17,239 |
| " step and platform, lighting apparatus, W. E. Chamberlain, et al..... | 16,523 | " roofing, W. L. Maltby 16,060, 16,175, 16,212 | 17,012 |
| " step and platform lighting device, G. W. Hunt..... | 17,038 | Chain, drive, J. H. Weaver, et al..... | 17,136 |
| " extensible car, T. B. Howe..... | 17,881 | " cable, J. M. Dodge..... | 17,640 |
| truck, A. A. E. and H. Blackman..... | 16,310 | Chains, J. A. Jeffrey..... | 18,188 |
| " " C. T. Emerson..... | 16,742 | Chairs, adjustable, J. D. King..... | 17,160 |
| " " E. L. Cleveland..... | 17,122 | " foot rest for rocking, F. Hung-r, et al..... | 17,547 |
| " " E. Whitting, et al..... | 16,904 | " hammock, C. Moore, et al..... | 16,980 |
| " " I. C. Terry, et al..... | 17,399 | " life-preserving, F. G. Johnson, et al..... | 16,423 |
| " " J. W. Chisholm..... | 16,004 | " rocking and reclining, A. G. Fuller..... | 18,011 |
| " " L. Findlay..... | 17,795 | " swinging, N. W. Butcher..... | 16,825 |
| " wheels, A. D. Canfield..... | 15,915 | Chamfering machines, T. Tobin..... | 17,340 |
| " " N. Washburn..... | 16,986 | Charcoal manufacturing furnace, J. Burt..... | 17,327 |
| " " W. J. Lindsay..... | 17,978 | Check book, black leaf, A. Gardner..... | 17,778 |
| " " and axles, O. T. Southworth..... | 16,320 | Checking devices for horses, W. B. Kirkland..... | 15,975 |
| " " axles and spring, J. Findlay..... | 17,831 | Cheese coverings, E. V. Lapham..... | 16,874 |
| " " metal truck, H. G. Taylor..... | 17,465 | " making apparatus, S. Jenks, et al..... | 18,092 |
| " window dust guard for, J. H. Reynolds..... | 16,957 | Cheese, manufacture of, The Powell Manu'f'g Co..... | 16,788 |
| Cars, C. S. Smith..... | 18,001 | " vat, G. H. Simon..... | 16,573 |
| " R. Fulton, et al..... | 16,465 | Chimney caps, W. J. Pettingell..... | 16,572 |
| " W. E. Chamberlain, et al..... | 16,528 | " tops, C. English..... | 17,839 |
| " The Hewitt Box Lid Co..... | 16,650 | " tops, P. B. Speer..... | 17,924 |
| " berth for sleeping, G. Leve, et al..... | 17,104 | Chronometer escapement, A. W. Kentoff..... | 17,626 |
| " circulator for, C. McIntosh..... | 17,615 | Churn, G. L. Potter, et al..... | 17,177 |
| " construction, A. F. Martel..... | 16,833 | " M. P. Hays..... | 18,078 |
| " conveying heating or motive agents in, L. Fitzgerald..... | 15,923 | " B. B. Moore, et al..... | 16,846 |
| " draw-bars for, W. Crouch, et al..... | 16,555 | " F. B. Stebbins..... | 18,108 |
| " device for varying the gauge of, T. Anderson..... | 16,035 | " W. C. Burrows..... | 16,678 |
| " dumping, W. Fallon..... | 18,135 | " W. E. Parmenter..... | 16,513 |
| " freight, N. H. Green..... | 16,172 | " dashers, H. C. Robinson..... | 16,010 |
| " " The American Freight Car Heating Co..... | 16,486 | " motor, B. C. May..... | 16,692 |
| " grain, T. T. Prosser..... | 16,952 | " power, J. W. Wilbur..... | 17,696 |
| " hand, The Sheffield velocipede car, et al..... | 17,289 | Churning apparatus, B. F. and B. Moore..... | 16,185 |
| " " S. H. Walz..... | 15,953 | Chutes, coal and ore, G. H. White..... | 16,427 |
| " means for unloading, G. P. Merrill..... | 18,185 | Cigar, bunching machines, G. Moeb..... | 16,330 |
| " portable working, T. Dark..... | 17,449 | " clipper, A. P. Yates..... | 16,716 |
| " refrigerating, C. F. Pierce..... | 16,588 | " holders, E. S. May, et al..... | 15,893 |
| " sleeping, J. A. Stelcher..... | 17,887 | " lighters, S. D. Mott..... | 16,305 |
| " stock, C. Kellogg, et al..... | 16,480 | " perfecting machine, A. Meyersahm..... | 17,083 |
| " " G. D. Burton..... | 17,992 | Cigarette machine, H. E. Casgrain..... | 17,440 |
| " " H. R. Bothwell, et al..... | 16,255 | Cinder sifter, J. A. Donovan..... | 17,545 |
| " " M. H. Gilbert..... | 17,003 | Clamps, saw, T. Crispin..... | 15,985 |
| " unloading, G. P. Merrill..... | 18,185 | Clanometer embankment, G. H. Massey..... | 17,752 |
| " wrecking and construction, L. K. Jewett..... | 16,124 | Clapboard machine, H. Taber..... | 17,461 |
| Carburetted apparatus, gas, A. W. Trial, et al..... | 17,780 | Clasps, garment, L. D. Minor..... | 16,458 |
| " gas, L. S. Grooves..... | 17,402 | Clasps, wall, I. Charbonneau..... | 16,275 |
| Carding machines, T. E. Atuley..... | 17,441 | Claw bars, J. H. Lakey..... | 17,103 |
| " machine, wool feeding apparatus for, T. E. Atuley..... | 17,441 | Clip single tree, A. F. Spooler..... | 18,045 |
| Carding machine The Whitehead & Atherton Machine Co..... | 16,973 | Cloaks, circular, W. F. Russell..... | 18,177 |
| Carpet stretchers, R. O. Robinson..... | 18,021 | Clock calendars, J. K. Seen..... | 16,284 |
| " sweeper, G. W. Gates..... | 17,827 | Clogs or shoes, J. Cassidy..... | 17,028 |
| Carriage and cradle combined, J. W. Krueger..... | 17,258 | Cloth weaving, T. Isherwood..... | 16,632 |
| " bodies, A. J. Calkins, et al..... | 17,371 | " wire, (The) E. T. Barnum Wire and Iron Works..... | 16,937 |
| " body support, P. G. Clancy..... | 17,266 | Clothes dryers, G. W. Alnsworth..... | 16,824 |
| " gear, G. E. Bartholomew, et al..... | 16,273 | " " T. D. Brown..... | 18,161 |
| " jack, A. J. Church..... | 17,991 | " " W. Vanderlip..... | 16,454 |
| " perch, L. D. Haskell..... | 16,847 | " pins, M. B. O'Neill..... | 17,293 |
| " seats, R. H. Lewis..... | 16,304 | " pounders, J. Mowery..... | 18,128 |
| " top setters, R. H. Lewis..... | 16,239 | " washer, N. B. Elliott..... | 17,522 |
| " tops, D. Conboy..... | 17,059 | " wringers, M. J. Althouse..... | 18,055 |
| " " H. F. Coombs..... | 16,964 | Club foot reducer, J. Burns..... | 17,961 |
| " " H. Hodge..... | 16,030 | Clutches, E. Wilkinson..... | 17,080 |
| " adjustable, W. Hodge..... | 16,383 | " friction, D. Frisbie..... | 16,026 |
| Carriages, H. P. Wells..... | 18,199 | " " J. H. Blessing, et al..... | 16,745 |
| " F. X. Roy..... | 16,628 | " " R. R. Osgood..... | 17,071 |
| Carriers, cash, W. S. Lamson..... | 15,992 | " " The Vulcau Iron Works Co..... | 15,984 |
| " and parcel, G. R. Elliott, et al..... | 17,162 | Coal chutes, G. H. White..... | 16,427 |
| Cart, dumping, T. Hill..... | 17,810 | " handling devices, A. Lawton..... | 16,425 |
| | | " in tenders, device for taking, W. H. Lanty et al..... | 17,309 |
| | | " mining, C. S. Smith, et al..... | 15,952 |
| | | " unloading, W. E. Ludlow..... | 16,561 |
| | | Coat, device to assist to put on and take off, S. Morton..... | 16,782 |

| | | | |
|---|--------|--|--------|
| Electric wire conduits, J. S. Dubois, et al..... | 17,315 | Fence lever clock, R. Russel..... | 17,746 |
| " " insulator, L. B. Grau..... | 17,197 | " locking device, A. C. Scarr..... | 17,188 |
| " " insulating, R. S. Warling, et al..... | 17,606 | " posts, cast iron, A. A. Arthur, et al..... | 17,129 |
| Electrical annunciator, F. Tanner..... | 18,102 | " wire, W. H. Rodden..... | 17,883 |
| " armatures, cylinders for, J. F. Gilliland..... | 17,081 | " machine for applying barbs to, (The) Worcester Barb Fence Co..... | 17,770 |
| " conductors, F. Jacob..... | 17,099 | " panel, J. Haldane..... | 16,784 |
| " " system of laying, J. Grieves, et al..... | 17,216 | " worm, S. Chambers..... | 16,735 |
| " distribution, T. A. Edison..... | 17,076 | " rail and wire, A. and A. J. Russell..... | 16,813 |
| " generators..... | 17,077 | Fences, barbed wire, A. Dillman, et al..... | 17,171 |
| " indicator, J. U. MacKenzie..... | 17,757 | " iron, B. G. Dewe, et al..... | 16,497 |
| " motors, T. A. Edison..... | 17,077 | " iron, F. F. De Voe..... | 17,314 |
| Electricity, mechanism for transmitting with the aid of, F. Jenkin..... | 17,433 | " rail, W. C. Scarr..... | 17,228 |
| " storing apparatus, J. W. Swan..... | 16,553 | " wire, A. F. Martel, et al..... | 16,617 |
| " treating alcoholic liquors with, A. C. Tichener..... | 17,637 | " wire barbs for, C. B. Brainard..... | 16,171 |
| Electro-magnetic devices, E. Thompson..... | 15,917 | " wire lines for, A. W. Thom..... | 17,129 |
| " motors, J. P. Culley, et al..... | 17,428 | Fence post, A. A. Arthur, et al..... | 17,262 |
| " motors, construction and government of, W. E. Ayrton, et al..... | 17,712 | " N. A. Haven..... | 18,048 |
| " coating process, W. H. Walem..... | 17,634 | " S. Gibbs..... | 15,927 |
| Electrodes for telegraphic instruments, G. Cumming, et al..... | 16,297 | " barbed wire, C. Pleper..... | 17,100 |
| Elevator, L. Daso..... | 17,560 | Fertilizer, distributor, C. E. Patric..... | 16,887 |
| " L. D. Hawkins..... | 16,935 | " " J. F. Keller..... | 17,943 |
| " and lifting jack for rails and ties, T. C. Naramore..... | 17,651 | " " J. S. Baker..... | 15,987 |
| " shafts, S. W. Williard..... | 17,442 | Fertilizers, process for manufacturing, E. A. Scribner..... | 18,206 |
| Elevators, tie and rail, T. C. Naramore..... | 17,659 | Fibrous substances, treatment for spinning and paper making, J. A. Graham..... | 16,277 |
| Embankment clinometer, G. H. Massey..... | 17,752 | Fibrous material, colouring, H. W. Vaughan..... | 16,891 |
| Emery wheel or corundum, S. Barnard..... | 17,555 | Fifth wheel, vehicles, J. Allen..... | 16,836 |
| " wheels, burning, F. B. Norton..... | 16,577 | " wheels for vehicles, W. G. Lockhart, et al..... | 17,501 |
| Engine, ammonia, G. Sweanor, et al..... | 17,920 | " wheels for carriages, L. D. Haskell..... | 16,647 |
| " duplex, C. C. Worthington..... | 17,727 | Filtering apparatus J. F. C., Farquhar, et al..... | 16,820 |
| " revolving cylinder, G. W. Hunter..... | 17,846 | Filtering apparatus, faucet, A. H. Horsnell, et al..... | 15,941 |
| Ensilage in solos, preserving, C. H. Roberts..... | 16,516 | Filters, water, J. W. Bailey..... | 16,080 |
| " " S. M. Colcord..... | 17,425 | " (The) American Filter Co..... | 16,812 |
| Engraving tool, controlling an, The Bain Electric Co..... | 18,186 | Fire alarm, telegraph, T. Ahearne..... | 17,669 |
| Envelope, J. T. McFarlin..... | 17,914 | " armours and respirators, C. McIntosh..... | 16,586 |
| " K. H. Pedrick..... | 16,795 | " damp indicating device, I Kitsee..... | 16,940 |
| " and letter sheet, A. Cox..... | 18,049 | " engines, L. H. Zeigler, et al..... | 18,175 |
| " " " L. Ehrlich..... | 17,533 | " escape C. E. Seabury..... | 17,785 |
| " " " combined, R. W. Stevens, et al..... | 16,307 | " C. I. Pittman..... | 17,435 |
| Envelope and tag, J. T. Dunham..... | 18,116 | " G. D. Gray..... | 17,899 |
| Evaporating apparatus, F. B. Faber..... | 16,991 | " H. B. Kimballand, et al..... | 17,901 |
| " liquids from organic matter, F. Browne..... | 17,568 | " H. E. Braunfeld..... | 16,829 |
| Evaporators, J. A. Henderson..... | 17,801 | " J. H. Ford..... | 16,656 |
| " J. M. Duncan..... | 17,792 | " J. H. Long..... | 17,692 |
| Evaporating and concentrating liquids, apparatus for, F. B. Nichols, et al..... | 16,066 | " J. R. Winter..... | 16,654 |
| " or concentrating liquids and saturating with gases, T. B. Nichols, et al..... | 16,066 | " J. S. M. Wilcox..... | 17,673 |
| Exhaust pipe vacuum, D. Harrington..... | 17,587 | " J. S. Parmenter..... | 17,908 |
| Excavator and conveyors, earth, C. A. and F. D. Smith..... | 16,438 | " J. Sintzel..... | 16,659 |
| Explosive matter, A. Hellhoff, et al..... | 17,088 | " J. T. Hodson..... | 17,281 |
| Eye bars, making, J. H. Springer, Sr..... | 18,144 | " J. W. Cooney..... | 17,233 |
| " glass, The Southbridge Optical Co..... | 17,834 | " J. Zerr..... | 17,951 |
| Fabrics, apparatus for desiccating, R. S. Jennings..... | 17,546 | " R. A. Bush..... | 18,841 |
| " compound for testing, R. M. Stephen, et al..... | 17,491 | " S. Richards..... | 17,036 |
| Fan, rocking chair, H. P. Roberts..... | 18,208 | " T. J. Vinton..... | 16,506 |
| " rotary, D. S. Wright..... | 18,057 | " W. Addison, et al..... | 16,412 |
| Fanning mill, S. Bessette..... | 17,875 | " W. Robinson..... | 16,386 |
| " mills, A. Kline..... | 16,151 | " W. S. Pugsley..... | 16,694 |
| " E. Bennett..... | 16,113 | Fire escape ladder, C. A. Gregory..... | 16,504 |
| Fare box, W. S. Wales, et al..... | 16,146 | Fire extinguishers, A. F. Spawn..... | 17,307 |
| Fastener, tub and box, W. H. Blake..... | 17,206 | " W. Morrison..... | 16,179 |
| Faucet, C. Whittaker..... | 18,151 | " W. Neracher..... | 17,063 |
| Faucet attachments, W. W. Jackson..... | 16,512 | " extinguishing and alarm apparatus, automatic, W. Neracher..... | 17,063 |
| " filtering, J. Aborn..... | 17,944 | " kindlers, J. H. Davis..... | 15,873 |
| " J. Howes..... | 16,981 | " lighters, J. M. Russell..... | 18,067 |
| " J. McGinlay..... | 16,556 | Fireplace, sheet metal, H. Rembert..... | 17,566 |
| " M. Magin..... | 17,271 | Fireplaces, grate, J. M. Cook, et al..... | 17,800 |
| Feed water purifier, D. D. Wass, et al..... | 16,563 | Fish dressing machine, M. J. Falson, et al..... | 16,411 |
| " R. W. Jones..... | 16,883 | " drying houses, F. B. Nichols, et al..... | 15,962 |
| " regulator and alarm, J. S. Clarke..... | 16,993 | " meal, C. Thompson..... | 17,137 |
| " alarm, G. W. Getchell..... | 16,440 | " traps, J. M. Frazer..... | 17,345 |
| " backs for boilers, A. R. Young..... | 17,750 | Flanging machines, A. Wilbur..... | 17,152 |
| " heaters, R. W. Jones..... | 16,883 | Flax or jute, process for treating, W. B. Perine, et al..... | 16,505 |
| " cutting machine, M. C. Mortis..... | 16,328 | Flock, coating walls with, J. H. and C. E. Campbell..... | 17,551 |
| " cutters, A. Hershy..... | 15,966 | Flour bolts, C. Schacht..... | 16,133 |
| Felly, vehicle wheel, E. Danford..... | 17,572 | " J. N. McConnell..... | 16,569 |
| Felly and spoke tightners, vehicle, A. Gilbraith..... | 17,242 | " H. A. Graeter..... | 16,897 |
| Fence iron, (The) E. T. Barnum Wire and Iron Works Co..... | 17,965 | " bolts, centrifugal, A. P. Holcomb, et al..... | 17,320 |
| " rail, A. C. Scarr..... | 17,877 | " dressing machine, J. M. Schultz..... | 17,847 |
| | | " entire wheat, W. Warren, et al..... | 16,596 |
| | | " manufacture of, L. Gathman..... | 17,252 |
| | | " mills, dust collectors, Noah W. Holt..... | 17,663 |
| | | " " G. T. Smith..... | 17,800 |
| | | " packer, J. Handy, et al..... | 16,899 |
| | | " bolt conveyors, G. T. Smith..... | 18,187 |
| | | " mills, R. M. Rounds, et al..... | 16,799 |
| | | " J. Mills..... | 15,899 |

| | | | |
|---|--------|--|--------|
| Floor coverings, wood, C. E. Rider..... | 15,916 | Gloves, R. D. Burr..... | 16,474 |
| " ice, cold storage, H. C. Cain..... | 16,448 | Glove, lacing device, W. F. Foster..... | 17,130 |
| Flying machines, J. J. Pennington..... | 17,134 | Glue, drying apparatus, W. A. Hoeveler..... | 17,108 |
| Freezing apparatus, paraffine and liquid compounds, E. Kells, et al..... | 16,485 | Glueing machine, W. Rabbe..... | 18,095 |
| Freezing apparatus, J. Chambers..... | 16,122 | Glue stock washer, W. A. Hoeveler..... | 17,109 |
| Friction movements, J. A. Horton..... | 17,353 | Glycerine, manufacturing process, E. O. Banjard..... | 17,150 |
| " of cutting tools, reducing the, M. T. Buchanan..... | 16,848 | " process, C. F. E. Poullain, et al..... | 16,594 |
| Fruit cleaning machine, S. A. Riee, et al..... | 16,741 | Gold and silver from their ores, extracting, R. Barker..... | 17,582 |
| " pickers, A. McKillop..... | 17,964 | " washing and separating machine, W. J. Yanner..... | 17,087 |
| " process for preserving, F. W. Storms..... | 17,090 | Golden sulphuret of antimony, E. E. Parsons..... | 17,518 |
| " machine for bleaching, D. M. Donald..... | 16,190 | Governors for steam engines, F. D. Cummer..... | 17,367 |
| " pickers, A. McKillop..... | 17,064 | Governors, regulator for engine, J. Williams..... | 18,083 |
| " evaporators, W. S. Plummer..... | 17,322 | Grain binder knot tier, W. B. Burns..... | 18,010 |
| " " W. D. Moody..... | 16,648 | " knotting device for, P. Patterson..... | 17,937 |
| " " C. B. Irish..... | 16,924 | " and corn huskers, C. H. Lynde..... | 17,862 |
| " dryers, heaters for, W. S. Plummer..... | 17,388 | Grain binders, cord holding mechanism for, W. Deer- ing..... | 17,926 |
| " drying chambers, W. S. Plummer..... | 17,322 | Grain carriers, (The Toledo Mower and Reaper Co'y cleaner, J. Burkholder..... | 15,912 |
| Foods, hygienic, manufacture of J. Fish, et al..... | 16,661 | " cleaners, C. R. Wild..... | 18,044 |
| Food, preparation of, E. Waylam..... | 18,158 | " cleaning machine, L. Gathman..... | 16,974 |
| Foot rest and boot jack, F. Goudreau..... | 16,025 | " " J. M. Walker, et al..... | 17,719 |
| " rest for piano, O. R. Burlingame..... | 17,709 | " " P. N. McChesney, et al..... | 16,112 |
| " rest for rocking chairs, F. Hunger, et al..... | 17,547 | " coolers and dryers, T. H. C. Ney..... | 16,824 |
| Forks, culinary, R. W. Turner..... | 15,969 | " cooling and drying, S. E. Worrell..... | 17,259 |
| Fog, alarm, N. S. Woodward..... | 16,464 | " cutting machines, H. E. Pryor..... | 16,917 |
| Fuel and combustion thereof, J. C. Cooper..... | 16,352 | " " R. L. Phelps..... | 17,196 |
| " manufacture from slaughter house refuse, G. Yale..... | 17,131 | " decorating machine, P. N. McChesney, et al..... | 18,126 |
| " and combustion thereof, improvements in, J. C. Cooper..... | 16,352 | " dressing " J. Hurt..... | 16,624 |
| Fur dressing and dyeing process, P. M. Daignault..... | 16,498 | " drills, G. W. W. Billings..... | 16,414 |
| Furnace, antimony, A. Hudson..... | 16,817 | " " J. Bartlett..... | 18,728 |
| " steam boiler and other, O. D. Orvis..... | 16,503 | " " J. S. Baker..... | 18,160 |
| " for brazing and welding flue tubes, R. H. Brown..... | 17,410 | " " P. H. Smith, et al..... | 15,987 |
| " mouth, T. O. Brien..... | 18,916 | " " T. D. Galloway..... | 16,537 |
| " steam generators, C. H. Caudler, et al..... | 16,234 | " driers and coolers, F. H. C. Ney..... | 17,259 |
| " steam boiler, J. A. Woodbridge..... | 17,983 | " driers, H. Cutler..... | 17,304 |
| " " B. Sloper..... | 18,029 | " drying and cooling, S. E. Worrell..... | 16,977 |
| " deoxidising, J. Wilson, et al..... | 18,034 | " elevator, A. Bardeen..... | 17,813 |
| " and stove, refractory lining composition, G. Duryee..... | 17,584 | " " L. Smith..... | 17,247 |
| Galvanic elements, A. Bernstein..... | 17,403 | " graders, C. R. Wild..... | 16,074 |
| Galvanizing process, wire, H. Roberts..... | 18,192 | " header, thrasher and separator, W. H. Parisb, et al..... | 17,178 |
| Games, J. Troin..... | 16,238 | Grain, marks of wood, transferring, J. R. Cross..... | 16,660 |
| " P. H. Johnston..... | 17,628 | " mills, J. Hurt..... | 16,414 |
| Gas apparatus and process, W. F. Brown..... | 17,539 | " " feeding apparatus, J. Hurt..... | 16,414 |
| " and vapour generator, H. F. Hayden..... | 17,570 | " reduction machine, W. D. Gray..... | 17,020 |
| " apparatus, hydro-carbon, J. Pintoch..... | 17,510 | " scales, bagger and register, C. J. Leach..... | 17,409 |
| " burners, W. Bell, et al..... | 17,693 | " scourers, D. Mann..... | 16,067 |
| " " A. B. Lipsey..... | 17,765 | " " cylinders for, S. Morgan..... | 17,573 |
| " " for heating purposes, T. Fletcher..... | 15,919 | " separating and thrashing machines, E. Huber, et al..... | 16,014 |
| " extinguishing, J. W. Plunkett..... | 16,429 | " " " T. Hall, et al..... | 17,007 |
| " coal, F. Weston..... | 16,009 | " separators, C. R. Wild..... | 16,974 |
| " engine, H. Sumner, et al..... | 16,261 | " " J. E. Smith..... | 16,818 |
| " " L. C. Parker..... | 17,362 | " " N. McLean..... | 16,331 |
| " furnace for metallurgic, H. F. Hayden..... | 17,450 | " " W. H. Parrish, et al..... | 17,178 |
| " " metallurgic, W. W. Wadlington..... | 17,110 | " " and thrashers, W. E. Craig..... | 17,422 |
| " reverberatory, W. L. McNair..... | 18,015 | Graining, composition, wood, H. and W. H. Bailey..... | 18,195 |
| " enriching apparatus, J. Livesey, et al..... | 18,182 | " transferring marks of wood, J. R. Cross..... | 16,660 |
| " generating, L. S. Graves..... | 17,402 | " wall, E. Fieroe..... | 17,334 |
| " apparatus, W. F. Brown..... | 17,674 | Grapples, J. W. Raymond..... | 17,411 |
| " and heating apparatus, W. F. Brown..... | 16,674 | " bowlder, J. Marshall..... | 16,417 |
| " generator, P. English..... | 18,043 | Grappling and hoisting apparatus, E. Stoea..... | 17,525 |
| " manufacture, W. J. Cooper..... | 16,697 | Grate, fire, P. Richards, et al..... | 16,719 |
| " manufacturing, A. P. Chamberlain..... | 18,179 | " " places, J. M. Cook..... | 17,300 |
| " manufacturing apparatus, A. O. Granger, et al..... | 17,638 | " furnace, L. Merriman..... | 17,970 |
| " motor engine, T. Ashbury, et al..... | 16,008 | " " T. B. Howe, et al..... | 16,538 |
| " process, T. B. Fogarty..... | 16,529 | " stoves, S. Smyth..... | 16,392 |
| " retorts, M. Gross..... | 17,097 | " stove and furnace, W. Buck..... | 16,875 |
| Gate attachments, J. Lukens..... | 17,479 | Grinding disks, W. Leumann..... | 17,325 |
| " " R. E. Chambers..... | 15,904 | " machines, F. M. Simons..... | 16,084 |
| " opening attachment, J. H. Moyer..... | 17,891 | " mill, G. K. Smith..... | 17,447 |
| Gates, T. Sturgin..... | 17,390 | " " L. Gathman..... | 16,571 |
| " W. R. White..... | 16,698 | " " W. Hutchison..... | 17,465 |
| " farm, J. W. Fidler..... | 16,054 | " mills, J. M. Collier..... | 16,879 |
| " self-closing, F. G. Goff, et al..... | 17,770 | " " J. Pratt..... | 15,950 |
| Gauge cocks, D. F. Tousey, et al..... | 18,085 | " " M. B. Church..... | 17,257 |
| Gear cutting machines, A. H. Brainard..... | 16,373 | " feed regulator for, M. B. Church..... | 17,231 |
| Gearing, J. F. Gilliland..... | 17,040 | Grooming houses, machinery for, J. J. Greenough..... | 16,681 |
| Geometrical blocks, A. H. Kennedy..... | 17,189 | " machines, W. S. Mayo..... | 16,180 |
| Glass annealing, method and apparatus, J. H. Camp- bell..... | 16,524 | Guano from fish, &c., M. Ziegler..... | 17,939 |
| Glass furnace, H. Frank..... | 16,121 | Gun cleaner, J. F. Davis..... | 18,080 |
| Glass vessels, D. W. Norris..... | 16,528 | Gutta percha, manufacture of, H. Gerner..... | 16,826 |
| Glove fasteners, E. J. Kraetzer..... | 16,525 | " " vulcanizing, H. A. Clark..... | 16,280 |
| " " J. Wilds..... | 17,788 | Hair crimping machine, J. A. C'other..... | 17,527 |
| Glove and mitten fastening, B. D. Eaton, et al..... | 17,161 | " restorative and scalp pomade, R. Prud'homme..... | 16,092 |
| | | Halter, C. S. Upton..... | 17,793 |
| | | " E. Barnard..... | 16,139 |

| | | | |
|--|--------|---|--------|
| Hame, D. Carr..... | 16,631 | Heel paring, F. Cutlar..... | 17,631 |
| " attachment, C. Lange..... | 16,256 | " stiffeners, implements for making, J. Germain... 18,062 | 18,062 |
| " " T. R. Pangle, et al..... | 15,979 | " trimming machinest J. W. Brooks..... | 16,357 |
| " tug, M. E. Lasher..... | 17,504 | Hides, process for dressing raw, P. M. Daignault..... | 16,498 |
| Hammers, stone-dressing, A. McDonald..... | 16,126 | Hinges, gate, C. Jobson..... | 16,707 |
| Hammocks, C. E. Helster, et al..... | 17,302 | " strap, W. M. Kurtz, et al..... | 16,932 |
| " C. Moore, et al..... | 16,980 | Hoisting and conveying apparatus, J. Ladd..... | 16,315 |
| " V. P. Travers..... | 17,069 | " and excavating earth apparatus, H. A. Carson..... | 16,519 |
| Handles for utensils, detachable, F. A. Neider, et al..... | 16,233 | " gins, S. T. Richardson..... | 17,373 |
| Harmonica, automatic, R. W. Pain..... | 16,167 | " machines, J. Fensom..... | 16,220 |
| Harness, P. McFadden..... | 17,755 | Holsts, C. H. Miller..... | 17,052 |
| " carriage, W. Mulloy..... | 17,932 | Hooks, mousing, W. H. Hammond, et al..... | 17,805 |
| " loops, H. A. Pott..... | 17,333 | " snap, F. C. Avres..... | 17,370 |
| " pads, H. J. Bickle, et al..... | 16,211 | " swivel, C. Dutton, et al..... | 17,138 |
| " P. H. Case..... | 16,949 | " " T. Gingras, et al..... | 18,091 |
| " terrets, P. McFadden..... | 17,756 | Hoop cutters, D. H. Burrell, et al..... | 16,876 |
| Harrow, B. B. Carpenter..... | 16,768 | " " T. Gray, et al..... | 17,917 |
| " B. F. Rix..... | 17,139 | " cutting machines, G. S. Foster, et al..... | 16,507 |
| " E. W. Herendeen..... | 16,202 | " machines, J. Connell..... | 16,785 |
| " G. Jackson..... | 16,420 | " shaving machine, J. Prince..... | 16,758 |
| " J. D. Privett, et al..... | 16,970 | Hoops, barrel, R. Williams, et al..... | 16,481 |
| " L. J. Stanton, et al..... | 16,477 | " machines for dressing, S. R. Garner, et al..... | 16,265 |
| " P. and A. S. Patterson..... | 15,875 | Hop dryers, J. L. Filkins..... | 18,027 |
| " W. Tinney..... | 17,934 | Horse collar, C. G. Calo..... | 16,657 |
| " and seeder, A. C. Scarr, et al..... | 17,057 | " fasteners, W. Hayton..... | 18,221 |
| " iron, A. Callander..... | 17,524 | " " J. H. Snyder, et al..... | 16,791 |
| " slack cutter, rotary, J. Barker..... | 17,186 | " " T. S. Grubbs et al..... | 17,534 |
| " sulky, T. G. Cook..... | 18,405 | " " pads, E. L. McLain..... | 17,269 |
| " tooth, L. J. Stanton, et al..... | 16,477 | " feeding apparatus, J. P. Milbourne..... | 16,984 |
| Harvester, A. Turner..... | 18,136 | " hampers, C. Whittaker..... | 17,004 |
| " D. Patterson..... | 16,920 | " headlight, E. F. Pflunger..... | 16,345 |
| " F. Bramer, et al..... | 16,337 | " hobble, E. Beares..... | 17,879 |
| " J. H. Blain et al..... | 16,936 | " power, G. B. and J. Ellis..... | 17,169 |
| " J. Keys..... | 16,945 | " " J. A. Rouse..... | 19,983 |
| " J. Dewey..... | 16,548 | " " machines, W. O. Frost..... | 16,806 |
| " " et al..... | 18,189 | " shoe nail machines, W. Werts..... | 16,085 |
| " J. P. Manny..... | 17,143 | " " sharpening machine, R. S. Bailey..... | 16,646 |
| " S. D. Maldin..... | 16,834 | " shoes, A. C. Hawes..... | 17,459 |
| " binder, cord, A. Harris, Son & Co... 17,849 | 17,989 | " " E. A. Carroll..... | 18,003 |
| " " W. P. Hale..... | 16,125 | " " F. A. Roe..... | 16,017 |
| " binders, C. W. Levalley..... | 16,695 | " " G. Bryden, et al..... | 16,194 |
| " " D. Maxwell, et al..... | 17,112 | " " W. Fenley..... | 16,366 |
| " " F. A. Dennett..... | 16,418 | " " H. Dunning..... | 17,855 |
| " " M. M. Hooton, et al..... | 17,520 | " " H. Holland..... | 17,278 |
| " " R. Brown..... | 18,605 | " " R. G. Wilcox..... | 16,910 |
| " " The Dennett Harvesting Machine Co..... | 18,167 | " tail holders, A. C. Smith, et al..... | 17,600 |
| " " The Minneapolis Harvester Wks..... | 16,478 | Horses, anti-cribbing attachments for, O. D. Deeds..... | 16,044 |
| " " V. Henny..... | 16,387 | " checking devices for, W. B. Kirkland..... | 15,975 |
| " " W. Deering..... | 16,089 | " machinery for grooming, J. J. Greenough..... | 16,681 |
| " " W. N. Whiteley et al..... | 18,207 | Hose connections, E. F. Gilbert..... | 16,172 |
| " rakes, trips for, W. F. Burditt..... | 17,488 | " coupling, C. Chadwick, et al..... | 18,131 |
| " self-binding, C. Wheeler, jr..... | 17,548 | " " J. B. Genin..... | 18,087 |
| " turnip, N. J. Fulcher..... | 17,841 | House, cold storage, H. C. Cain..... | 16,448 |
| Harvesting machines, P. Patterson..... | 16,702 | Hubs, vehicle, F. M. Hurtle..... | 16,967 |
| " " W. Russell..... | 16,533 | " " T. and S. M. Brown..... | 16,028 |
| Hat holders, J. White..... | 17,235 | " wheel, T. B. Dowsley..... | 16,787 |
| Hay elevator and carrier, M. T. Buchanan..... | 17,976 | " " The Lansing Wheel Co..... | 18,069 |
| " " E. Harrington..... | 17,008 | Hydrants, W. H. Fromm..... | 17,236 |
| " " G. W. and G. H. St. John..... | 17,889 | Hydraulic engine, W. Donaldson..... | 16,992 |
| " " P. F. Chambard..... | 17,251 | Hydro-carbon burners, I. R. Blumenberg, et al... 17,261 | 17,261 |
| " fork, The Ney Manufacturing Co., et al..... | 17,174 | " carbon engine, The Brayton Petroleum Engine Co..... | 17,967 |
| " " W. H. Wortman, et al..... | 18,139 | " burners furnace, M. L. Best..... | 17,349 |
| " press, J. March..... | 16,595 | " furnace, B. Sloper..... | 17,220 |
| " " P. Lord, et al..... | 17,704 | Ice-creeper, F. M. West..... | 17,636 |
| " " W. J. H. Kaffe..... | 15,924 | " tongs, T. Baxter..... | 17,434 |
| " tedder teeth, J. Mudgett, et al..... | 17,737 | Illuminating composition, K. J. Hunter..... | 18,156 |
| " " N. C. Thompson..... | 18,149 | Index, J. H. Wagstaff..... | 16,023 |
| " unloaders, C. R. Irvine..... | 16,508 | Indexing of books, C. H. Dennison..... | 16,264 |
| " unloading machine, T. Hall..... | 18,198 | Indicator, piston, G. W. Brown..... | 16,535 |
| Heaters, house, J. B. Harris..... | 18,152 | " speed, N. P. Bowsher..... | 17,763 |
| Heating apparatus, church, M. R. F. Desjardins..... | 16,640 | " " T. Blanchard..... | 16,802 |
| " " electric, O. Rose..... | 17,030 | " station, O. H. Green..... | 16,180 |
| " " gas, W. F. Browne..... | 17,674 | " steam engine, G. H. Grosby..... | 16,541 |
| " " hot water, C. Wheat, et al..... | 17,355 | Injectors, H. B. Murdock..... | 17,091 |
| " " " O. Charland..... | 17,641 | " P. H. Michaux, et al..... | 16,118 |
| " " steam, E. E. Gold..... | 16,359 | " " steam, G. C. Williams..... | 15,878 |
| " " " and air, L. Hursey, et al... 17,517 | 17,517 | " " The Desmond Injector Co..... | 17,312 |
| " composition, R. J. Hunter..... | 18,156 | Inkstands, I. Brooke..... | 16,796 |
| " furnace, E. Boucher..... | 16,055 | Inlaid work, W. C. Edge..... | 16,007 |
| " " T. Linklater..... | 17,377 | Insulating materials for electric uses, J. A. Fleming... 17,192 | 17,192 |
| Hedges, plashed, W. Young..... | 16,163 | " " " " R. S. Waring..... | 17,606 |
| Heel and insole protectors, W. T. Schenck..... | 16,242 | " et al..... | 17,607 |
| " sole apparatus, L. T. Tongas..... | 17,326 | Insulators for electric wires, L. B. Gray..... | 17,197 |
| " blanks cutting machine, E. S. Mansell..... | 17,660 | Iron coating with lead, J. A. Graham..... | 16,827 |
| " burnishing tools, H. Bond..... | 16,849 | " ore, reduction of, D. H. Walker, et al..... | 18,214 |
| " nailing machines, H. A. Henderson..... | 16,162 | " unloading, W. E. Ludlew..... | 16,551 |
| " " J. W. Brooks..... | 16,357 | | |

| | | | |
|--|--------|--|--------|
| Ironing machines, G. W. Cottingham..... | 17,031 | Life boats, W. Lockerty..... | 15,999 |
| Isometers to indicate variation in mariner's compass, H. Glover..... | 17,494 | “ “ T. Hamilton..... | 18,180 |
| Journal bearings, F. E. Canda..... | 16,134 | “ “ H. F. Coombs..... | 17,226 |
| “ “ and box, R. W. Traylor..... | 17,561 | “ “ B. F. Chapman..... | 16,667 |
| “ “ box lid, oil, The Hewitt Box Lid Co..... | 16,650 | “ “ preserver, E. R. Cogswell..... | 16,213 |
| “ “ boxes, devices for applying anti-friction rollers, J. Thomas..... | 17,321 | “ “ holder, W. P. Gray..... | 17,508 |
| “ “ composition for cooling M. L. Woodbury, et al..... | 17,603 | “ “ preserving chair, F. G. Johnson, et al..... | 16,423 |
| Jute or flax, process for treating, M. B. Perine, et al..... | 16,505 | Lifters, cooking utensils, J. B. Fitzpatrick..... | 17,777 |
| Kettles and pots, D. Snyder..... | 16,901 | “ “ “ C. F. Fellows..... | 16,186 |
| Kiln, brick and tile, R. A. and J. T. Brown..... | 16,822 | Lifting jack, C. S. Harmon..... | 16,539 |
| “ malt, H. Altenbrand..... | 16,279 | “ “ W. Sprague, et al..... | 17,550 |
| Knife holders for, &c., H. Benolzheimer..... | 17,986 | “ “ S. M. and J. M. Baird..... | 16,240 |
| “ “ scourers, C. Kinney..... | 16,338 | “ “ J. N. Smith..... | 16,379 |
| “ “ sharpener, A. W. Sperry..... | 18,183 | “ “ J. L. Ellis..... | 16,754 |
| Knit caps, C. F. Hoag..... | 16,154 | Light, producing intense white, C. Clamond..... | 17,436 |
| Knitting machine, I. W. Lamb..... | 18,079 | Limekiln, J. Patullo..... | 15,940 |
| “ “ G. E. Nye..... | 16,235 | Liniment for horses and cattle, P. Corcoran, et al..... | 17,645 |
| “ “ J. Adams..... | 16,230 | Links, open, S. Shatter..... | 16,176 |
| “ “ J. Bradley..... | 16,941 | Linoleum, manufacture of, M. B. Nalrn..... | 17,093 |
| “ “ J. Byfield..... | 15,949 | Liquid form, conversion of solid volatile matter into, S. M. Eiseman..... | 17,649 |
| “ “ P. G. Close..... | 16,530 | Liquors, purifying and maturing, The Cushing Process Co..... | 17,471 |
| “ “ W. D. Huse..... | 16,721 | “ “ with electricity, treating alcoholic, A. C. Tiebener..... | 17,637 |
| “ “ W. W. Clay..... | 18,041 | Lock, N. J. Côté, et al..... | 16,927 |
| “ “ machinery, W. H. McKay..... | 18,032 | “ “ permutation, J. E. Dean..... | 16,578 |
| Label and ribbon holder for hats, W. Carrick..... | 17,394 | “ “ time, H. F. Newbury... 16,104 16,105 16,106 16,107 16,108 16,109 16,110 16,111 | 16,113 |
| Lacing fastening for gloves, W. F. Foster..... | 17,130 | Locomotive, I. N. Forbes..... | 16,560 |
| Ladder, self-supporting, C. A. Jones..... | 17,493 | “ “ O. Rothrock..... | 17,715 |
| “ “ step, W. Varnum..... | 16,777 | “ “ ash pan, E. Bignell..... | 18,181 |
| “ “ L. Francis..... | 16,620 | “ “ cleaner, A. D. Kilborn, et al..... | 18,050 |
| Lamp, T. N. McLeod..... | 17,240 | “ “ engine, M. N. Forney..... | 17,949 |
| “ “ F. Siemens..... | 16,031 | “ “ compound, H. and W. Monk..... | 16,722 |
| “ “ burners, C. C. Richmond..... | 16,032 | “ “ and traction engine, F. W. Webb..... | 16,274 |
| “ “ electric, A. Swan.....17,198 17,199 17,200 17,201 | 16,872 | “ “ driving wheel gear, W. Crippen..... | 17,972 |
| “ “ C. A. Hussey..... | 17,202 | “ “ furnace and boiler, J. A. Gano..... | 17,874 |
| “ “ C. G. Perkins..... | 16,598 | “ “ pilot, safety device for, O. Rothrock..... | 17,716 |
| “ “ E. Thomson..... | 17,870 | “ “ tenders, device for taking coal in, M. H. Lantz, et al..... | 17,309 |
| “ “ E. Thomson..... | 16,954 | “ “ tenders, serving with water, J. Haggas, et al..... | 16,866 |
| “ “ R. J. Gulcher..... | 17,075 | Logging engine, J. Dolbeer..... | 16,878 |
| “ “ The European Electric Co..... | 17,089 | Loom, N. W. Westcott..... | 16,403 |
| “ “ The Hamilton Industrial Works Co..... | 16,598 | “ “ shuttle, J. T. Thompson..... | 18,134 |
| “ “ W. Hochhausen.....17,356 17,395 | 18,218 | “ “ stop motion for, F. O. Tucker..... | 16,012 |
| “ “ W. S. Parker..... | 17,396 | Low water alarm, F. W. Menze..... | 17,421 |
| “ “ air, E. Thomson..... | 16,170 | Lozenge cutters, C. H. Hall, et al..... | 16,476 |
| “ “ arc, J. K. D. McKenzie..... | 16,051 | “ “ invalid, A. J. McDonald..... | 15,881 |
| “ “ N. McCarty..... | 17,671 | “ “ machinery, T. Robertson..... | 15,897 |
| “ “ E. Thomson..... | 16,166 | “ “ machines, C. H. Hall, et al..... | 16,355 |
| “ “ C. E. Ball..... | 17,397 | Lubricating compound for reducing friction of metal- cutting tools, M. T. Buchanan..... | 16,848 |
| “ “ C. D. Janney..... | 17,127 | “ “ cups, grease, B. F. Ortman, et al..... | 17,311 |
| “ “ incandescent, A. Swan.....17,466 17,467, | 17,772 | Lubricator, A. W. Swift..... | 16,545 |
| “ “ C. G. Perkins..... | 17,468 | “ “ W. H. Craig..... | 17,790 |
| “ “ moulds for shaping, A. Swan..... | 17,868 | “ “ C. W. Shirlwine..... | 17,781 |
| “ “ regulator for, J. J. Wright..... | 17,466 | “ “ for loose pulleys, E. W. Van Duzen..... | 17,272 |
| “ “ sockets for, E. H. Johnson..... | 17,158 | Lumber dryers, J. Lynch..... | 17,120 |
| “ “ extinguisher, automatic, W. H. Kimball..... | 16,095 | “ “ drying apparatus, A. McNeill..... | 17,619 |
| “ “ heaters, A. McKenzie..... | 17,294 | “ “ trimming machine, W. B. Swartwout..... | 17,617 |
| “ “ hydrogen, M. J. Hinder..... | 16,181 | Lunch box, The E. T. Barnum Wire and Iron Works.... | 16,068 |
| “ “ hydro-carbon, J. R. Burchfield..... | 17,652 | Magnetism, mode of applying, W. Malloy..... | 17,005 |
| “ “ kerosene oil, T. P. Thompson..... | 16,949 | Mail bag, W. Haron..... | 17,002 |
| “ “ oil, S. Maxim..... | 17,253 | Malt drying apparatus, G. F. Burkhardt..... | 16,471 |
| “ “ signal, E. L. Piper..... | 17,900 | “ “ houses, H. Altenbrand..... | 16,279 |
| “ “ switches, C. G. Perkins..... | 17,623 | Manual power, J. Bates..... | 17,039 |
| Lanterns, T. McDonald..... | 17,869 | Manure distributor, W. H. Crandall..... | 16,251 |
| “ “ G. F. Fisher..... | 17,817 | “ “ spreaders, “ “..... | 16,251 |
| “ “ G. E. Frifield..... | 17,445 | Mariners' compass, isometer to indicate variation in, H. Glover..... | 17,494 |
| “ “ T. Phillips..... | 17,157 | Mash, fermentation of, H. F. Moore..... | 17,342 |
| “ “ kerosene, J. H. Stone..... | 16,061 | Match dipping machine, T. A. Cook, et al..... | 17,474 |
| “ “ tubular, R. P. Butchard..... | 18,107 | “ “ friction, H. H. Baker..... | 16,544 |
| “ “ T. Davidson..... | 16,217 | “ “ lighter and cigar cutter combined, G. Isenhart..... | 17,644 |
| “ “ G. A. Kennedy..... | 16,442 | “ “ machines, B. T. Steber..... | 17,094 |
| “ “ J. H. Stone..... | 17,135 | “ “ C. F. Bonhack..... | 17,250 |
| “ “ J. Moncur..... | 16,682 | “ “ F. Westlake, et al..... | 16,978 |
| Last, metal, J. Markie..... | 17,653 | “ “ H. L. Haggood..... | 17,246 |
| Lasting tool, F. Henderson..... | 16,796 | “ “ splint gathering machines, R. T. Steer..... | 16,384 |
| Lath-bundling machine, J. W. Dester, et al..... | 16,041 | “ “ machine, G. H. Millen, et al..... | 18,184 |
| “ “ trimming machine, G. W. Nichols, et al..... | 16,083 | “ “ stick bunching, W. H. H. Sium..... | 17,432 |
| Lathe, W. H. Lenhart..... | 17,046 | “ “ sulphurizing machine, G. H. Millen, et al..... | 17,503 |
| “ “ chucks, A. B. Wadsworth..... | 15,926 | Mattress, L. Heath..... | 16,643 |
| “ “ for turning lasts, H. H. Bennis..... | 16,243 | “ “ spring, J. E. Townshend..... | 16,715 |
| Lead, preparing oxide of, G. T. Lewis..... | 16,901 | “ “ S. Knowles..... | 16,349 |
| “ “ purifying process, F. J. Clamer..... | 17,838 | “ “ wire woven, &c., W. C. Normau..... | 17,55 |
| “ “ white, E. V. Gardner..... | 17,140 | | |
| Leather board from bark, The Canada Pulp Co..... | 18,008 | | |
| “ “ manufacture of, J. Shaw..... | 16,832 | | |
| “ “ material for insulation, H. Loewenberg..... | 16,435 | | |
| Letter and envelope sheet, L. Ehrlich..... | 17,086 | | |
| Leveling instrument, J. Macdonald..... | 17,574 | | |
| | 17,533 | | |
| | 17,141 | | |

| | | | |
|---|---------------|---|---------------|
| Measure board, E. Andrews..... | 16,347 | Musical instruments, M. Harris..... | 16,150 |
| “ shoemakers', C. Schaefer..... | 18,088 | “ “ mechanical, R. W. Pain..... | 16,200 |
| “ and protector, bevel, J. S. Thornburg..... | 18,098 | “ “ “ pneumatic lever, A. Durkee..... | 16,187 |
| Measuring feet and fitting lasts machine, J. H. Schaefer..... | 17,676 | “ leaf-turner, J. M. Wittman..... | 17,106 |
| “ pumps, H. E. Marchand..... | 17,025 | Nail cutting machine, J. Coyne..... | 15,996 |
| Meat cutting block, J. E. Baril..... | 17,706 | “ plate feeding machines, J. S. Hammond..... | 17,364 |
| Mechanical purposes, machinery for, J. J. Greenough..... | 16,681 | “ or spike, W. Taylor..... | 16,407 |
| “ movement, L. S. Fithian..... | 17,647 | Nailing machine, A. Eppler, jr., et al..... | 17,848 |
| Medicinal compounds, D. Munbeck..... | 16,579 | Neck ties, J. M. Jack, et al..... | 16,981 |
| “ “ D. W. Edwards..... | 16,316 | Needle blanks, W. H. Dayton..... | 18,173 |
| “ “ G. F. Day..... | 17,296 | Net knitting boards, N. D. Sallars..... | 17,306 |
| “ “ J. and F. Rosco..... | 16,546 | Nets, fly, T. Gingras..... | 18,154 |
| “ “ M. E. Sangster..... | 17,331 | Nickel-plating, L. F. Dunn..... | 17,380 |
| “ “ W. R. Mead..... | 16,466 | Nozzles for sprinklers, F. B. Smith..... | 15,989 |
| “ syrup, E. Tremblay..... | 17,215 | Numbering machine, W. P. Kidder..... | 16,565 |
| Medical compound for scalp, R. Prud'homme..... | 16,902 | “ “ D. J. Bushorr..... | 18,119 |
| “ “ external wounds, F. X. Des-trampes..... | 16,102 | Nut fastener, W. Dunn, et al..... | 17,939 |
| Medicine, tonic, J. W. Barnes..... | 16,614 | “ lock, W. Van R. Bligton..... | 18,125 |
| Metal coating, H. W. Shepard..... | 16,388 | “ “ W. S. F. Dillon, et al..... | 17,181 |
| “ “ apparatus, H. Roberts..... | 18,192 | “ “ W. J. McTigue..... | 17,337 |
| “ cutting tools, compound for reducing the friction of, M. T. Buchanan..... | 16,848 | “ “ S. M. Churchill..... | 16,687 |
| “ inlaid work, W. C. Edge..... | 16,007 | “ “ M. W. Meagher, et al..... | 17,295 |
| “ washer, process of making, A. Bromer..... | 17,714 | “ “ D. Triplett..... | 16,725 |
| “ working tools, J. E. Woodbridge, et al..... | 15,913 | “ “ J. Wilkes..... | 17,478 |
| Metals, deoxidizing and coating, J. B. Jones..... | 17,575 | “ “ J. Graham..... | 16,730 |
| “ washers, E. Salomon, et al..... | 16,380 | “ “ F. Bligton..... | 18,071 |
| Metallic packing, L. Katzenstein..... | 16,611 | “ “ E. W. Nichols..... | 17,454 |
| “ “ S. M. Weale..... | 17,287 | “ “ E. Dubord, et al..... | 17,212 |
| Meter, fluid, F. G. Heese..... | 17,925 | “ “ D. Stewart, et al..... | 17,182 |
| “ water, P. Wells..... | 16,141 16,343 | “ “ C. L. Couvrette, et al..... | 18,007 |
| Middling purifiers, G. T. Smith..... | 17,736 | “ “ D. F. Bligton..... | 17,155 |
| “ “ J. Goldie, et al..... | 18,211 | “ “ C. E. Bell..... | 16,136 |
| “ “ J. J. D. Hurst..... | 16,398 | “ “ B. S. Crocker, et al..... | 17,446 |
| “ “ L. Gathman..... | 17,718 | “ “ A. Dion, et al..... | 17,212 |
| “ “ M. Harman..... | 17,451 | “ machines, A. Makland..... | 16,765 |
| “ “ W. Klostermann..... | 18,170 | Oars, J. Warn..... | 18,150 |
| Milk cans, P. Hohmeir..... | 16,602 | “ rowing, W. L. Cassady, et al..... | 17,085 |
| “ pan, W. S. Harland..... | 17,379 | Oil can, I. W. Jackson..... | 17,624 |
| “ preserving, H. D. Thatcher, et al..... | 18,094 | “ devices for attaching pumps to, W. G. Holden, et al..... | 17,427 |
| “ stool and bucket, A. Woodward..... | 17,029 | “ “ M. H. Garland..... | 17,853 |
| “ strainers, W. H. Lynch..... | 17,748 | “ “ X. St. Pierre..... | 16,987 |
| “ treating apparatus, The Powell Manfg Co..... | 16,788 | “ “ cups, The Ruggles Duplex Oil Cup Co..... | 16,976 |
| Milking bucket and stool, A. Woodward..... | 17,029 | “ “ extracting machine, F. Payzant..... | 17,050 |
| Mill disks, L. Gathman..... | 16,571 | Oils, distillation apparatus for, The Imperial Oil Co..... | 16,854 |
| “ rolls, feeder for, T. Reid..... | 17,222 | “ for storage, heating, S. M. Elseman..... | 17,643 |
| Millstone alarm, W. Lanhoff..... | 16,241 | “ improving the fire test of, H. C. Smith..... | 16,045 |
| “ dressing machine, C. S. Hoover..... | 17,592 | “ process for reducing, W. Groves..... | 17,016 |
| “ drivers, W. E. Sergeant..... | 15,938 | Ointments, F. McKay..... | 16,845 |
| Milk vats, R. S. Whitman, et al..... | 16,875 | Ore chutes, G. H. White..... | 16,427 |
| Mince pies, compound, H. J. Allen..... | 16,609 | “ desulphurizing, Z. A. Willard..... | 15,986 |
| Mining machine, D. Blain..... | 17,496 | “ extracting gold and silver from their, process for, R. Baker..... | 17,582 |
| “ “ F. M. Lechner, et al..... | 16,437 | “ “ metals from, A. D. Ancel, et al..... | 18,004 |
| “ “ coal, C. S. Smith, et al..... | 15,952 | “ “ precious metals from, A. K. Hunting-ton, et al..... | 17,412 |
| Mop holders, J. T. B. Lee..... | 16,174 | “ handling devices, A. Lawton..... | 16,425 |
| “ wringer, J. McCarthy..... | 17,490 | “ reduction of iron, D. H. Walker, et al..... | 18,214 |
| Mortising machine, J. H. and A. Cant, et al..... | 17,604 | “ separators, electro-magnetic, F. V. Rouleau..... | 16,761 |
| “ “ T. A. Daniels..... | 16,769 | “ “ J. LaBrecche-Viger..... | 16,028 |
| Motion converters, H. Croft..... | 16,404 | “ “ G. A. Metcalfe..... | 16,809 |
| Motors, atmospheric, B. J. Foster..... | 16,834 | “ “ J. A. Coombes..... | 18,140 |
| “ hydraulic, E. B. Benham, et al..... | 17,730 | “ “ magnetic, S. E. St. O. Chapleau..... | 16,354 |
| “ liquid carbonic acid gas, A. Gateau..... | 17,975 | “ silver and gold extracting, R. Barker..... | 17,582 |
| “ mechanical, L. H. Conner..... | 16,408 | “ washing and separating machine, W. J. Tanner..... | 17,087 |
| “ spring, A. Burkholder..... | 16,446 | “ treatment of, T. F. Lyte..... | 16,375 |
| “ vapour, I. R. Blumenberg..... | 17,406 | “ “ gold and silver, W. J. Tanner..... | 17,538 |
| “ water, F. W. Tuerk..... | 16,205 | “ unloading, iron, W. E. Ludlow..... | 16,551 |
| Moulding machines, J. Anderson..... | 16,088 | Organs, J. B. Hamilton..... | 17,193 |
| “ “ J. A. and H. Cant, et al..... | 17,605 | Ornamenting wall, C. Fleroe..... | 17,334 |
| “ “ speaking tubes, M. Heidelberg..... | 17,117 | Ovens, bread-raising, L. B. Morgan, et al..... | 16,491 |
| Mouth piece for cornets, H. E. Jones..... | 17,460 | “ cooking, M. Kinleyside, et al..... | 16,258 |
| “ “ knives of, P. Straith..... | 17,787 | “ doors, J. J. Quinley..... | 17,974 |
| Mower cutting bar tilter, R. M. Robinson..... | 16,814 | “ portable, S. J. McDowell, et al..... | 16,933 |
| “ knives of, P. Straith..... | 16,432 | Overalls and pantaloons, W. G. Venner..... | 18,171 |
| “ lawn, W. J. Lloyd, et al..... | 17,993 | “ W. Carter..... | 16,020 16,689 |
| “ pitman, connections for, W. Gause, et al..... | 16,071 | Overcoats, S. O. Shorey..... | 16,547 |
| Mowing machines, C. B. Frost, et al..... | 17,469 | Packing, piston, G. Roberts..... | 18,082 |
| “ “ C. C. Carlyle..... | 17,267 | “ vessel, M. D. Ellison, et al..... | 16,636 |
| “ “ C. W. Lowe..... | 17,404 | Paddle wheel, A. Tigge..... | 16,591 |
| “ “ F. Bramer..... | 17,438 | “ “ for boats, L. C. Fogg..... | 17,677 |
| “ “ H. A. Howe..... | 16,895 | Padlock, C. C. Dickerman, et al..... | 17,809 |
| “ “ J. Savoie..... | 16,770 | Paging machine, M. H. Dement..... | 17,816 |
| “ “ W. F. Cochrane, et al..... | 17,298 | Pails, milking, A. C. Tracy..... | 16,664 |
| “ “ W. Gause, et al..... | 16,814 | Paint, L. H. Brackett..... | 16,147 |
| “ “ knife, sharpening machine, P. Straith..... | 17,106 | | |
| Music leaf turners, J. M. Wittman..... | 16,144 | | |
| “ instruments, A. Durkee..... | | | |

| | | | |
|--|---------------|--|--------|
| Paint, compounds for fire, water and weather resisting, L. D. Mott..... | 17,585 | Pontoon, construction of, A. H. Williams..... | 17,505 |
| “ distributor, J. P. Whipple..... | 16,679 | Post driving machine, M. Black..... | 13,084 |
| “ “ L. Walkup..... | 18,113 | “ hole diggers, J. A. Fleming..... | 16,441 |
| “ fire and waterproof, A. Patterson..... | 17,741 | “ “ W. C. Switzer..... | 17,883 |
| “ or dye composition, N. McCallum, et al..... | 17,648 | Potato diggers, A. Ainsley..... | 16,603 |
| “ or varnish, A. W. Burke..... | 16,333 | “ “ H. D. Herrington, et al..... | 16,189 |
| “ staffs, guide for, T. E. Davis..... | 15,902 | “ “ L. G. Kelsey..... | 16,759 |
| Painting and coating, surfaces, M. B. Church..... | 17,232 | “ “ R. A. Clark..... | 16,831 |
| Pan cleaning machine, W. S. Owens..... | 16,629 | “ “ wheels, W. McKenzie..... | 17,988 |
| Pantaloon and overalls, W. G. Venner..... | 18,171 | “ digging machine, M. S. Stafford, et al..... | 17,733 |
| Paper bag, D. Shirley..... | 16,793 | “ knife for peeling, W. Addison..... | 17,284 |
| “ “ holders, F. A. Masters..... | 17,895 | “ peeling machine, J. A. Moffet..... | 16,840 |
| “ box, R. R. Colborn..... | 18,024 | “ “ and slicing machine, W. Addison..... | 17,423 |
| “ “ W. H. H. Rogers..... | 16,129 | “ planter, S. H. Fisk, et al..... | 17,694 |
| “ “ machines, W. J. Keefe..... | 16,641 | Pots and kettles, D. Snyder..... | 16,247 |
| “ boxes, machines for, B. T. Steber..... | 17,344 | Preserving apparatus, alimentary substances, C. M. Pielsticker..... | 17,480 |
| “ for copying purposes preparing, M. W. Brown..... | 17,554 | “ egg and fruit, process, F. W. Storms..... | 17,090 |
| “ letter, R. W. Stevens, et al..... | 16,307 | “ food cases for, J. J. Hoyt, et al..... | 16,331 |
| “ making fibres for, J. A. Graham..... | 16,277 | Press, J. R. Devor, et al..... | 16,377 |
| “ “ half stuff for, C. Court..... | 17,779 | “ lever power, O. P. Morgan..... | 16,590 |
| “ matting or carpet, J. Bray, et al..... | 17,858 | “ oil, W. Bushell, et al..... | 17,098 |
| “ news wrappers, G. Fay..... | 17,234 | “ veneering, R. Goff..... | 16,997 |
| “ pulp, G. Archibald..... | 17,207 | “ wine and cider, H. J. Campbell..... | 17,815 |
| “ “ G. H. Mallory..... | 16,792 | Printers, rules, cutting machines, R. S. Robson..... | 16,292 |
| “ “ The Canada Pulp Co..... | 16,435 16,436 | Printing ink, J. B. Grant, et al..... | 17,065 |
| “ “ grinders for making wood, The Canada Pulp Co..... | 17,308 | “ machine, M. H. Dement..... | 17,695 |
| “ “ manufacture of, The Canada Pulp Co..... | 16,435 | “ press, feeding machines, C. Ellery..... | 16,500 |
| “ tearing devices, A. W. Jerome..... | 16,302 | Protectors, insole and heel, W. T. Schenck..... | 16,242 |
| “ vessel, manufacture of, H. A. Johnson..... | 17,021 | “ sole and upper, J. G. Whittler..... | 15,976 |
| Pattern tracers, L. J. Purdy..... | 16,600 | “ and measure bevel, J. S. Thornburg..... | 18,098 |
| Peg cutters, A. Hancock..... | 17,318 | Pulleys, C. H. Cowdrey..... | 16,752 |
| Pen, fountain, A. T. Cross..... | 17,448 | “ W. H. Dodge, et al..... | 17,243 |
| “ holders, W. W. Stewart..... | 16,562 | “ belt, E. B. Martindale..... | 16,826 |
| Pencil fasteners, J. F. Webster..... | 17,204 | “ blocks, differential, F. Murray, et al..... | 17,689 |
| Pepsin, manufacture of, C. L. Jensen..... | 18,137 | “ for belts, J. J. Irvine, et al..... | 17,347 |
| Percolators, N. Rosenwasser..... | 16,753 | “ loose, The Vulcan Iron Works Co..... | 17,071 |
| Pessaries, W. W. Turver..... | 18,026 | “ rig, H. C. Crowell..... | 15,923 |
| Petroleum burners, R. A. Bury, et al..... | 16,227 | Pulp machines, R. Cartmell..... | 16,955 |
| “ separating apparatus, D. Rogers..... | 16,327 | “ pails, E. B. Eddy..... | 16,739 |
| Photographic camera box, C. and H. Anthony & Co..... | 17,804 | “ sorting machine, N. Kaiser..... | 17,092 |
| “ “ “ E. H. Anthony, et al..... | 17,768 | Pulverizing machine, R. D. Gates..... | 17,142 |
| “ images, W. Kurtz..... | 16,671 | Pump bucket, T. Kenyon..... | 16,215 |
| Photography, backgrounds, C. F. and W. E. Ludop..... | 17,288 | “ “ chain, O. E. Warhams..... | 18,203 |
| Piano, D. McCarthy, et al..... | 16,082 | “ chain rubber bucket, E. W. Grant..... | 15,977 |
| “ sounding board, F. Pitt..... | 16,944 | “ double action force, N. S. Briggs..... | 17,832 |
| “ stools and other seats, G. W. Rice..... | 17,544 | “ valve, J. Barrett..... | 17,208 |
| “ upright, T. A. Hentzman..... | 17,022 | Pumps, C. Powell..... | 16,410 |
| Pictures frames, backs for, L. A. Deuther..... | 17,948 | “ J. A. Munford..... | 17,808 |
| Pigment distributors, L. Walkrip..... | 17,066 | “ J. G. Irving..... | 17,037 |
| Pillow, bolster, &c., H. Berger..... | 15,910 | “ J. H. Watkins..... | 17,497 |
| “ sham holders, A. H. Phelps, et al..... | 17,297 | “ J. W. Powers..... | 16,472 |
| “ “ J. A. Wanless..... | 16,145 | “ M. B. Brooks..... | 17,419 |
| Pincher and wrench, S. L. Willmer..... | 16,839 | “ T. Draper..... | 16,182 |
| Pipe couplings, W. F. Cassidy, et al..... | 16,285 | “ The Field Force Pump Co..... | 16,254 |
| Pipe coupling, W. Martin..... | 16,222 | “ air, N. B. Blackmer..... | 19,714 |
| “ cutter, I. Kinney..... | 15,972 | “ devices for attaching, W. G. Holder, et al..... | 17,427 |
| “ “ J. H. Lancaster..... | 17,078 | “ double acting, J. H. and B. Branson..... | 15,967 |
| “ “ J. W. Calef..... | 16,416 | “ force, D. Johnson, et al..... | 16,914 |
| “ grapples, E. K. Green..... | 17,558 | “ “ D. Lillienfeld..... | 17,041 |
| “ screwing apparatus, A. Cameron..... | 17,629 | “ “ O. Holman, et al..... | 15,909 |
| Piston for steam engines, G. W. Williams..... | 17,430 | “ measuring, H. E. Marchand..... | 17,025 |
| “ heads, H. D. Garrett..... | 16,905 | “ rotary, S. D. Jones..... | 16,994 |
| “ rod and cylinder, J. S. Parmenter..... | 16,926 | “ ships, A. Russell, et al..... | 16,676 |
| Pitchforks, F. L. Brandon..... | 16,921 | “ steam, G. W. Johnson..... | 16,470 |
| “ machine for making, P. E. Bird..... | 17,699 | Pumping engine, E. G. Shortt..... | 17,666 |
| Planer, buzz or trueing, W. W. Laidlaw..... | 17,602 | “ “ G. M. Conway..... | 17,928 |
| Plastering wal's, E. Charter..... | 17,114 | “ “ E. H. Martin..... | 17,437 |
| Plough, B. S. Benson..... | 17,783 | “ “ J. H. Valle..... | 17,346 |
| “ C. Anderson..... | 17,519 | “ “ W. A. Perry..... | 16,090 |
| “ C. Hanson, et al..... | 17,769 | “ “ air or water, F. McMellon..... | 17,523 |
| “ E. D. Meagher..... | 16,371 | Quadrant, horizon for, S. Pattie, et al..... | 17,173 |
| “ W. A. Dean..... | 16,076 | Quilting frames, H. T. Davis..... | 17,444 |
| “ clevis, A. Patton..... | 17,774 | Quilts, printers', J. A. Hempel, et al..... | 16,773 |
| “ cultivator, S. B. Bell..... | 18,176 | Rack for umbrellas, C. M. Boynton, et al..... | 17,960 |
| “ gang, J. N. Kye..... | 18,048 | “ and trough, A. R. Yost, et al..... | 17,056 |
| “ shares, D. Clinton..... | 15,882 | Radiator, hot water or steam, L. S. Daniels..... | 17,996 |
| “ steam, J. Whealy..... | 17,393 | Rail joint and lock, The National Railway Supply Co..... | 18,174 |
| “ “ S. Roy..... | 17,902 | Railroad, R. Johnston..... | 16,575 |
| “ sulky, G. Ward..... | 18,129 | “ bed, J. Elmer..... | 16,570 |
| “ “ H. Ward, et al..... | 18,117 | Rails, compound, H. Everson..... | 17,567 |
| “ wheel, F. S. Davenport..... | 16,291 | “ method of securing ties to, G. L. Putnam..... | 16,444 |
| Ploughing machines, G. Greig..... | 16,319 | “ tram and T., T. L. Johnson..... | 16,554 |
| Pole and thill coupling, S. J. Randall, et al..... | 16,075 | Railway bolts, interlocking rail to sleeper, T. J. Bush..... | 17,594 |
| “ rings, vehicle, D. S. Norris, et al..... | 16,196 | “ flanger, A. Day..... | 15,945 |
| Polishing machinery, silk and thread, W. R. Landfear..... | 17,608 | “ “ J. H. Miller..... | 16,282 |
| “ wheels, S. T. Wray..... | 16,877 | “ frog protector, P. Schan, et al..... | 15,968 |

| | | | |
|--|--------|---|--------|
| Railway frogs, J. Staples..... | 17,146 | Regulator, J. A. Rouse..... | 18,080 |
| “ frogs, D. C. Pierce | 17,000 | “ of water to house service, A. St. Buxton, | 16,857 |
| “ gauge of the wheels, varying the, D. Ander- son..... | 16,035 | “ et al..... | 16,495 |
| “ ice flangers, N. Watson..... | 16,847 | “ sash, W. Thompson..... | 16,983 |
| “ permanent way, W. Seaton..... | 16,042 | “ speed, J. A. Rouse..... | 16,857 |
| “ rail chairs, T. Tostevin | 17,378 | Regulating the supply of water, means for, A. St. C. Buxton, et al..... | 16,808 |
| “ “ C. E. Mark..... | 17,840 | Reefing gear, E. Bigelow..... | 16,999 |
| “ rail joint, The National Railway Supply Co..... | 18,174 | Reels, centrifugal, J. J. A. Waterhouse | 16,566 |
| “ scrapers, D. L. Harris, et al..... | 18,060 | “ bolting, J. D. Hurst..... | 15,874 |
| “ “ ice, T. F. Goulette..... | 16,433 | “ fishing, W. and T. B. Mills..... | 17,921 |
| “ semaphores, J. S. Trites..... | 16,248 | “ harvester, T. T. Kaune..... | 17,073 |
| “ “ signals, machines for operating, | | Rein guards, C. R. Chute..... | 17,885 |
| W. W. McLellan..... | 16,705 | “ holder, A. Cottrell..... | 16,160 |
| “ signal, automatic air, J. S. McLeod | 17,225 | Reliefs, safety, G. R. Prowse | 17,707 |
| “ snow fence, W. C. Rice..... | 18,031 | Remedy, rheumatic, S. T. Wright..... | 16,586 |
| “ station, signal, J. S. Trites..... | 17,744 | Respirators and fire armours, C. McIntosh..... | 16,025 |
| “ switch fastenings, T. Rowlands..... | 16,000 | Restors, foot, F. Gourdeau..... | 17,097 |
| “ “ openers, J. H. Kennedy, et al..... | 16,651 | Retorts, gas, M. Gross..... | 17,732 |
| “ “ stands, A. Baker..... | 17,596 | Ribbon holders and reel, J. Mellette..... | 17,394 |
| “ “ D. Tracy..... | 15,997 | “ or label holder for hats, W. Carriek..... | 15,923 |
| “ “ O. J. Trne, et al..... | 16,893 | Rigs, pulley, H. C. Crowell..... | 16,196 |
| “ tie, P. Pendleton, et al..... | 16,540 | Rings, pole, D. S. Morris, et al..... | 16,363 |
| “ “ method of securing rails to, G. L. Putnam | 16,444 | Rings, tappings, A. E. Schmidt, et al..... | 16,450 |
| “ track cleaner, J. H. Miller..... | 16,282 | Riveting machines, J. H. Clinch..... | 16,188 |
| “ “ A. Day..... | 15,945 | Road scrapers, A. Gerow..... | 16,604 |
| “ track layer, J. Turner..... | 16,798 | Rock cutting apparatus, J. D. Brunton..... | 17,203 |
| “ of gravel, &c., D. L. Harris, et al..... | 18,060 | “ drills, G. M. Derby..... | 16,159 |
| Railways, device for keeping the frost and snow from, T. Patterson..... | 17,409 | “ “ H. C. Sergeant..... | 16,378 |
| “ ways of, W. Seaton..... | 16,042 | Rocker, adjustable, E. I. Schully..... | 18,196 |
| Rakes, hand, The Baker Man'g Co..... | 16,097 | “ attachments, W. C. Ranney..... | 16,117 |
| “ W. F. Drew..... | 16,070 | Rods and couplers, switch, J. Lovejoy..... | 18,086 |
| “ hay, T. Miltenberger..... | 16,691 | Roller mills, H. J. Gilbert..... | 17,664 |
| “ (The) Massey Man'g Co..... | 16,157 | “ J. Goldie, et al..... | 17,945 |
| Rakes, horse, A. J. Nellis..... | 16,718 | “ J. R. Hersey..... | 16,950 |
| “ E. Glendillen..... | 16,605 | “ testing W. D. Gray..... | 17,186 |
| “ H. Myers..... | 16,663 | Rollers, J. Barker..... | 16,771 |
| “ J. E. Beauchemin..... | 16,882 | “ curtain, W. B. Noyes..... | 16,677 |
| “ L. H. Hébert..... | 18,050 | “ land, W. Gates..... | 16,710 |
| “ P. Beauchemin..... | 18,138 | “ “ W. P. Jones..... | 17,273 |
| “ The Massey Man'g Co..... | 16,479 | “ log, L. T. Kline..... | 16,221 |
| “ The Hoosier Drill Co..... | 17,994 | “ shade, D. E. Kempster..... | 17,389 |
| “ W. H. Hall..... | 16,839 | “ “ J. H. Russ..... | 17,321 |
| Range, heating, cooking, P. Brake..... | 16,694 | “ to journal boxes, devices for applying anti- friction, J. Thomas..... | 16,035 |
| Ranges, cooking, E. W. Anthony..... | 16,299 | Rolling stock, varying the gauge of the wheels of, D. Anderson..... | 18,109 |
| “ M. Kinleyside, et al..... | 16,258 | Roof, conservatory, and green house glass, T. Polito..... | 17,589 |
| “ P. Brake..... | 16,294 | “ glass, W. Ward..... | 16,465 |
| “ U. H. Scott..... | 17,632 | Roofing, car, R. Fulton, et al..... | 17,973 |
| “ and heating, P. Brake..... | 17,124 | “ “ W. H. Paige..... | 16,212 |
| “ and stoves, E. W. Anthony..... | 16,299 | “ cement, W. L. Maltby..... | 17,012 |
| “ fire backs for, G. A. Way..... | 17,477 | “ “ W. L. Maltby..... | 16,821 |
| Ratchet drill, W. Sandiford..... | 18,119 | “ compositions, G. H. Poschel..... | 17,565 |
| Rattan stripping and splitting machine, S. Sawyer..... | 17,708 | “ “ W. White..... | 16,074 |
| Reamers, pipe, J. H. Lancaster..... | 17,211 | “ plastic compounds, C. Taylor, et al..... | 17,564 |
| Reapers, G. Swett, et al..... | 16,271 | “ felt, W. White..... | 16,970 |
| “ J. Bell..... | 16,208 | “ machines, The Whitehead & Atherton Ma- chine Co..... | 16,766 |
| Reaping machines, T. J. Williams..... | 16,049 | “ metal, J. Walter..... | 17,125 |
| “ and mowing machines, A. J. Lemon and E. W. P. Jones..... | 17,670 | Root cutters, E. L. Byron..... | 17,343 |
| Reaping and mowing machines, A. J. Lemon and E. W. P. Jones..... | 17,670 | Ropes, coupling for, C. M. E. Kortum..... | 16,260 |
| Recording devices, E. M. Asselstine..... | 17,241 | “ serving machines, A. F. Downie, et al..... | 16,142 |
| Refining and oxidizing oils, process for, C. F. Dunder- dale..... | 17,697 | Rotary engine, G. W. Wade, et al..... | 16,421 |
| “ paper pulp, apparatus for, W. Jones..... | 17,717 | “ rotary, H. W. Potter..... | 16,561 |
| Refrigerating cars, C. F. Pierce..... | 16,568 | “ I. N. Forbes..... | 17,484 |
| “ apparatus, J. Chambers..... | 16,122 | “ L. J. Wing..... | 16,994 |
| Refrigerator, J. Alexander..... | 17,657 | “ S. D. Jones..... | 16,419 |
| “ J. B. Richer..... | 17,897 | Rossing machine, bark, S. R. Thompson..... | 15,879 |
| “ R. A. Misservey..... | 16,394 | Roving, manufacture of, E. W. Kelley..... | 16,691 |
| “ ice cream, J. Alexander..... | 17,946 | Rower, check, T. Miltenberger..... | 16,826 |
| “ lager beer, J. Alexander..... | 17,947 | Rubber and gutta percha, &c., manufacture of, H. Gerner..... | 17,265 |
| Register for wool working machines, A. A. Palmer..... | 16,669 | “ other vulcanizing articles A. C. Eddy..... | 17,625 |
| Registers, river and fish ways, D. E. Price..... | 16,727 | “ cloth, F. E. Aldrich..... | 16,280 |
| “ watchmen's, G. F. Ransom..... | 15,905 | “ vulcanizing india, H. A. Clark..... | 16,292 |
| Regulator, J. Alexander..... | 17,807 | Rules, cutting, printers, R. S. Robson..... | 17,498 |
| “ draft, M. B. Church..... | 17,256 | Ruling machine, E. W. Blackball..... | 16,228 |
| “ electric current, C. G. Perkins..... | 17,867 | Runners, wheel, H. Holland..... | 17,816 |
| “ “ E. Thomson..... | 18,052 | Sad irons, H. C. Fox..... | 15,942 |
| “ electric water service, A. St. C. Buxton, et al | 16,857 | “ J. G. Baker, et al..... | 17,163 |
| “ feed water, J. S. Clarke..... | 16,993 | “ W. Hilton, et al..... | 15,947 |
| “ for dynamo-electric machines, commutator, J. J. Wright..... | 17,319 | “ grinders, J. G. Baker..... | 17,280 |
| “ electric lamps, J. J. Wright..... | 17,158 | “ holders, J. O'Neil..... | 16,818 |
| “ engine governor, J. Williams..... | 18,083 | Sad and fluting irons, C. B. Judd..... | 16,951 |
| “ grinding mills, feed, M. B. Church..... | 17,231 | Saddles, riding, J. Bassler..... | 17,358 |
| “ gas, N. Steeman..... | 17,051 | Salt brine, evaporating, The American Chemical Co. raising apparatus, G. H. Smith..... | 16,990 |

| | | | | |
|---|--------|--|--------|--------|
| Sand band for axles, F. Rolfe..... | 17,597 | Seed drill and fertilizer, distributors, J. Bartlett..... | 16,492 | 16,087 |
| " bands for vehicle axles, D. M. White, et al..... | 18,072 | " " " broadcast sower, W. Coulthardt, et al..... | | 16,334 |
| " bars in rivers, apparatus for removing, O. Hazard, et al..... | 18,106 | " planting machines, C. E. Patric | | 16,335 |
| " driers, J. McPherson..... | 17,105 | Seeder, broadcast, J. Bartlett..... | | 18,160 |
| " papering machine, G. A. Brown, et al..... | 16,552 | " " W. Coulthardt, et al..... | | 16,334 |
| " " machines, W. H. Doane..... | 16,732 | Seeder, flexible tooth, J. F. Keller..... | | 18,202 |
| " " rims, G. A. Brown, et al..... | 16,552 | Seeders and harrows, A. C. Scarr, et al..... | | 17,957 |
| Sap evaporators, H. E. Tupper, et al..... | 16,362 | Seeding and drilling machine, J. O. and W. S. Wisner, et al..... | | 17,963 |
| " pan elevator and car, L. Magoon..... | 16,148 | " " machine, J. F. Keller..... | | 18,224 |
| Sash balances and locks, C. J. Schulky..... | 16,963 | " " J. O. and W. S. Wisner, et al..... | | 17,168 |
| " cord fasteners, W. Goforth, et al..... | 16,103 | Sextants, artificial horizon, S. Pattee, et al..... | | 17,173 |
| " fasteners, C. W. Elliott, et al..... | 17,387 | Sewer joints, J. Dineen..... | | 17,238 |
| " " E. B. Attwell..... | 17,072 | " pipes, compounds for, D. H. Dorsett..... | 17,993 | 17,994 |
| " " E. E. Shepard, et al..... | 18,132 | " traps, R. Bain, et al..... | | 16,019 |
| " " J. B. Montague..... | 16,099 | Sewing machines, A. A. Fisher..... | | 17,907 |
| " " R. N., S. B. and A. Sibley..... | 16,143 | " " C. E. Tibbles..... | | 16,740 |
| " holders, A. A. Nicholson, et al..... | 17,938 | " " G. B. Ward..... | | 16,224 |
| " " O. R. Cooke..... | 17,683 | " " G. Davidson..... | | 17,462 |
| " " W. C. Carson..... | 17,292 | " " J. Authors..... | | 17,586 |
| " lifters, C. W. Elliott, et al..... | 17,387 | " " J. H. Whitney..... | | 17,014 |
| " lock, Gay's Sash Lock Co..... | 16,737 | " " J. K. Harris..... | 16,267 | 16,268 |
| " lock and balance, C. J., Schulky..... | 15,963 | " " J. T. H. Drake..... | | 18,064 |
| " " holder, G. Haensflug..... | 18,217 | " " J. W. Dewees..... | | 18,053 |
| Sash regulators, W. Thompson..... | 16,495 | " " J. W. Post..... | | 18,145 |
| Saw, E. M. and A. Boynton..... | 16,585 | " " L. B. Miller, et al..... | 17,893 | 17,594 |
| " band, W. H. Doane, et al..... | 16,733 | " " M. W. Simkins..... | | 16,630 |
| " benches, M. Covell..... | 16,146 | " " P. Diehl..... | | 17,828 |
| " circular, C. H. Douglas, et al..... | 16,979 | " " R. M. Cox..... | | 17,392 |
| " cleaning, W. Bowker..... | 17,381 | " " R. M. Rose..... | | 16,645 |
| " cross-cut, E. M. Boynton..... | 16,399 | " " R. M. Wanzer..... | | 16,981 |
| " " G. F. Simonds..... | 17,691 | " " The Banks Button Hole Machine Co..... | 18,157 | 18,201 |
| " " G. W. Wills..... | 16,152 | " " The National Machine Co..... | | 16,749 |
| " drag, J. Fisher, jr..... | 16,119 | " " The White Sewing Machine Co..... | | 18,215 |
| " files, E. M. Boynton..... | 16,531 | " " welt guides for, C. L. Higgins..... | | 17,540 |
| " filing machine, A. B. Fisher..... | 16,909 | Shaft coupling, J. Killip..... | | 17,556 |
| " " E. Roth..... | 18,047 | " " L. E. McKinnon..... | | 17,209 |
| " " cross-cut, A. Schooley..... | 18,068 | Shafting, boxes for, P. Cramer, et al..... | | 17,366 |
| Saw frame, C. H. Bennett..... | 16,039 | Shears, A. J. Lytle..... | | 15,980 |
| " guides, J. F. Chandler, et al..... | 15,931 | Shears, A. J. Phipps..... | | 16,191 |
| " gummers, S. P. Olney..... | 17,328 | Shelving, stove, T. A. Harris..... | | 17,502 |
| " hand, E. Andrews..... | 17,230 | Shingle machines, B. C. Brown..... | | 15,944 |
| " handles, E. M. Boynton..... | 16,532 | " " C. J. Weld, et al..... | | 16,804 |
| " handle, cross-cut, J. C. Dietrich..... | 17,464 | " " J. Goldie, et al..... | | 16,281 |
| " " reinforcing plate, W. H. Hawkin, jr..... | 17,418 | " " W. Marcoux..... | | 17,133 |
| " jointers, J. A. Church..... | 16,321 | " " W. Wyley..... | | 16,283 |
| " logs, machine for raising, W. Hamilton..... | 16,216 | " " mill, I. Frechette..... | | 16,606 |
| " machines, drag, G. G. Seeger..... | 16,912 | Shingling brackets, P. W. Ryan..... | | 17,932 |
| " mills, carriage feeding, The Feller and Stowell Co..... | 17,357 | Ships, drags for stopping, J. McAdams..... | | 16,413 |
| Saw mill, feed mechanism, T. J. Reimy..... | 16,996 | " reefing gear, E. Bigelow..... | | 16,608 |
| " mill, gang circular, J. G. Winter..... | 16,510 | " toilet apparatus for, D. Wellington..... | | 16,005 |
| " " log feeders and turners, H. M. Loud..... | 16,652 | " water indicator, D. McCarthy, et al..... | | 16,177 |
| " mill log holder, E. B. Eddy..... | 17,579 | Shirt collars, W. Christopher..... | | 18,148 |
| " mill, reciprocating, T. S. Wilkin..... | 16,346 | Shirts, I. B. Keller, et al..... | | 16,783 |
| " mill, raising logs, W. Hamilton..... | 16,216 | Shirts, manufacture of, D. Hawkins..... | | 17,509 |
| " mills, steam feed, The Feller and Stowell Co..... | 17,357 | Shoemaker's jack, F. Schipper, et al..... | | 16,244 |
| Sawing machines, D. H. Campbell..... | 16,250 | " " H. P. Roberts..... | | 16,140 |
| " machine, steam portable, E. N. Dunckel..... | 18,199 | Shoes, I. A. Reals..... | | 17,621 |
| " machines, portable, G. Hasson..... | 17,843 | " " W. Rogers..... | 17,812 | 17,821 |
| " " " W. McDonald..... | 16,306 | " felt, J. Brandy..... | | 17,127 |
| " machinery, barrel hoops, R. Williams, et al..... | 16,862 | " " W. M. Weeks..... | | 17,249 |
| " " " R. Williams..... | 16,481 | " hob-nail, W. G. Hoover..... | | 15,888 |
| Saws sets, E. Larson..... | 16,800 | " or clogs, J. Cassidy..... | | 17,028 |
| " " J. T. East..... | 17,930 | Shovel, ditching, P. F. Chambord..... | | 18,065 |
| Saw stretchers, T. S. Wilkin..... | 16,428 | " hand, E. L. Fenerty..... | | 17,857 |
| " swages, M. Covell..... | 15,935 | " malt, H. C. Cole..... | | 18,103 |
| " table, J. W. Cole..... | 17,350 | Shovels, snow, C. A. Way..... | | 15,974 |
| Scales, F. Fairbanks..... | 16,266 | " " H. C. Cole..... | | 17,969 |
| " " W. C. Farnum, et al..... | 17,407 | " " H. W. Staples..... | | 16,959 |
| " bagger and register, grain, C. J. Leach, et al..... | 17,409 | Show cases, N. Robertson..... | | 17,743 |
| Screen frame, E. N. Porter, et al..... | 16,483 | " " P. Hendricks..... | 18,099 | 18,100 |
| " revolving, P. Cadell..... | 17,599 | " " revolving, H. Westphal..... | | 16,567 |
| Screw cutting machine, H. C. Taylor..... | 16,662 | " stands, G. S. Roath..... | | 15,886 |
| " tools, J. H. Lancaster..... | 17,305 | Shower bath, J. H. Crocker..... | | 16,666 |
| " driver, C. Thomas..... | 17,026 | Sickle bars, C. Schmidt, et al..... | | 17,301 |
| " " M. B. Crawford..... | 16,886 | " grinders, W. S. Ingraham..... | | 16,885 |
| " propellers, J. Gartner..... | 17,123 | Sign, revolving, T. A. Marteeney..... | | 17,791 |
| Soythe fasteners, The Vermont Snath Co..... | 16,127 | Signals of vessels, M. White..... | | 17,911 |
| Secondary batteries, J. S. Beeman..... | 16,828 | " " or alarms, time, H. A. Eaton..... | | 16,696 |
| " " " et al..... | 16,688 | Sink plug and strainer for, J. Iredale..... | | 17,852 |
| " " J. S. Sellon, et al..... | 16,499 | Size, composition for, H. Goldberg..... | | 17,672 |
| " " and cells, J. W. Swan..... | 16,553 | Skates, roller, G. D. Burton..... | | 16,655 |
| " " W. Taylor, et al..... | 16,621 | Shirt supporter and corset, C. W. Higly..... | | 16,269 |
| Sectors dynamic, H. Glover..... | 17,494 | Skiving machines, W. S. Eaton, et al..... | | 16,634 |
| Seed cleaner, A. R. Appleman..... | 17,578 | Slate pad for corners, P. Wardell..... | | 17,530 |
| " distributor, J. Bartlett..... | 18,160 | Slaughter house, animal slinging railway, R. J. Davis..... | | 17,277 |
| " drill and fertilizer, distributor, H. M. Keith..... | 17,577 | | | |

| | | | |
|--|--------|--|--------|
| Sled, A. Sanford | 17,291 | Steam engines, piston head and cylinders, H. D. Gar- | 16,905 |
| " J. W. Russell, et al..... | 17,803 | rett..... | 16,114 |
| " brake, O. P. Arnot, et al..... | 17,977 | " generators, C. Tyson..... | 16,234 |
| " for inclined plane, R. Steel, et al..... | 17,165 | " " and furnaces, C. H. Candler, et al..... | 16,966 |
| Sleep, device for waking persons from, S. S. Applegate | 16,779 | " generating stoves, E. Julien | 15,895 |
| Sleigh, A. A. Crosby | 16,280 | " pipes, non-conducting, covering for, J. G. Hill, | 16,372 |
| " bob, E. C. Schroeder..... | 17,892 | et al..... | 16,886 |
| Sleigh, bob, bolster, M. H. Ash..... | 16,286 | " traps, N. Curtis..... | 18,521 |
| " knee, B. F. Brown..... | 15,884 | Steering mechanism, N. Richardson..... | 17,589 |
| " shafts, F. Jones, et al..... | 16,668 | " method of, D. A. McDonald..... | 17,055 |
| " G. E. Watson..... | 17,728 | Stencil holders, C. H. Bennett..... | 17,223 |
| Sleighs and sleds, C. M. Amsden..... | 15,914 | " machines, A. G. Shannon..... | 17,493 |
| Silding hill, artificial, R. Steel, et al..... | 17,165 | Steps, portable, C. A. Jones..... | 17,789 |
| Smelting furnace, B. Bayliss..... | 16,929 | Stereotyping, matrix for, M. H. Dement, et al..... | 18,097 |
| " copper, G. H. Nichols, et al..... | 16,819 | Stereotyped plates, C. Huke..... | 15,960 |
| " J. C. Woodward, et al..... | 16,738 | Stills, petroleum, H. Frasch..... | 19,906 |
| Smoke box, boiler, E. Huber..... | 16,153 | Stockings, elastic, D. D. M. Master..... | 17,217 |
| " consumer, A. M. Wayne..... | 17,431 | " felt, J. Brandy..... | 17,934 |
| " consuming apparatus, J. Elliott..... | 17,701 | Stone, artificial, P. F. Haverly..... | 17,936 |
| " device, H. W. Norwood..... | 17,492 | " dressing machine, H. D. Wallace..... | 17,525 |
| " furnace, I. Beasley..... | 17,010 | " hoisting and grappling apparatus, R. Stone..... | 17,580 |
| " apparatus for, J. Elliott..... | 17,701 | Store service system, G. R. Elliott, et al..... | 16,903 |
| Snow plough, E. M. Eselborn..... | 16,059 | Stop cocks, J. H. Blessing..... | 16,850 |
| " F. W. Menze..... | 17,375 | " J. Milne..... | 17,047 |
| " H. Resley..... | 16,053 | " and waste, J. F. Lamping..... | 16,627 |
| " J. O. Stackhouse..... | 16,409 | " J. Kelly..... | 17,481 |
| " L. Larchar..... | 17,562 | Store board, W. P. Cole..... | 16,055 |
| " P. Brunet..... | 17,529 | Stove heating, E. Boucher..... | 16,429 |
| " R. Johnston..... | 16,653 | " apparatus for use with gas, J. W. Plunkett..... | 16,881 |
| " R. Shorts..... | 17,270 | Stoves, C. H. McCaw, et al..... | 17,488 |
| " T. W. McKay..... | 18,178 | " J. A. Price..... | 16,966 |
| Soap making machinery, R. Freeland..... | 17,360 | " E. Julien..... | 16,625 |
| Soda, apparatus for the recovery of, H. C. F. Stormer.. | 16,397 | " D. Brix..... | 16,781 |
| Sofa beds, H. F. Hover..... | 16,919 | " J. W. Thomas..... | 16,448 |
| Soldering apparatus, W. W. and W. A. Williams..... | 15,872 | " J. W. Elliott..... | 16,933 |
| " can, E. and O. W. Norton..... | 18,212 | " camp, S. J. McDowell..... | 17,563 |
| " can, W. W. and W. A. Williams..... | 17,872 | stoves, camp, P. Latour..... | 16,493 |
| " furnaces, W. T. Boultonhouse..... | 18,191 | " car, F. G. Kay, et al..... | 16,966 |
| " machine, can, J. J. Jones, et al..... | 17,764 | " cooking, E. Julien..... | 16,299 |
| Sole buffing machines, E. Patten..... | 16,149 | " E. W. Anthony..... | 17,492 |
| " cutting apparatus, L. T. Tongas..... | 17,326 | " coal oil, T. G. Watson..... | 16,015 |
| Sole fastening for boots and shoes, S. W. Robinson, | 17,535 | " cooking, G. M. Beecher..... | 16,748 |
| " et al..... | 16,149 | " J. M. Spencer..... | 16,258 |
| " edge setting machine, E. Patten..... | 16,395 | " M. Kintley, et al..... | 16,494 |
| " stitch raisers, T. Migner..... | 17,326 | " W. J. Copp..... | 16,201 |
| Soles or heels, apparatus for cutting, L. T. Tongas..... | 16,838 | " drum, G. M. Barber, et al..... | 17,477 |
| Sounding apparatus, J. Leviellé..... | 16,447 | " fire backs for, G. A. Way..... | 16,332 |
| Spark arresters, D. Groesbeck..... | 18,360 | " heating, E. Stewart..... | 16,458 |
| " A. Dillman..... | 18,165 | " E. W. Anthony..... | 17,338 |
| " A. Mitchell..... | 16,094 | " J. Dwyer..... | 17,979 |
| " R. Brayton, et al..... | 16,837 | " magazine, S. Smyth..... | 17,541 |
| " R. M. Howling..... | 16,322 | " pipe, D. A. Smith..... | 16,709 |
| " T. G. Leslie..... | 15,983 | " F. A. Ring..... | 16,582 |
| " T. Patterson..... | 17,018 | " dampers, E. P. Shelden, et al..... | 16,057 |
| " extinguishers, T. G. Leslie..... | 15,983 | " L. and W. H. Berger..... | 15,961 |
| " preventive device, H. W. Norwood..... | 17,492 | " shelves, J. Kurtis, et al..... | 15,892 |
| Spectacles, S. Ollendorf..... | 16,812 | " polish, The Elastin Mfg Co..... | 16,966 |
| Speculum oral, J. H. Doyle, et al..... | 16,982 | " steam generating, E. Julien..... | 16,763 |
| Spikes, W. H. Bailey..... | 15,930 | " tailors, J. R. Burchfield..... | 16,299 |
| Spike extractors, A. P. Prout..... | 16,887 | " and ranges, E. W. Anthony..... | 17,588 |
| Spike, or nails, W. Taylor..... | 16,407 | Stove or range, fire box, J. Whelan..... | 17,477 |
| Spindles for shutters, W. T. Coggeshall..... | 16,956 | " Stoves and ranges, fire back for, W. A. Way..... | 17,336 |
| Spinning and doubling frame, J. Young, et al..... | 16,612 | Straw stackers, F. F. Hartwich..... | 17,116 |
| " fibres for, J. A. Graham..... | 16,277 | Stuffing box, steam engine, S. Fox..... | 15,955 |
| " machine, T. D. Brown..... | 17,729 | Stump extractors, J. Bruce..... | 17,121 |
| " spindles and bearings, A. R. Sherman..... | 18,074 | " O. Mignault..... | 15,871 |
| " wheel, A. S. Beauchemin..... | 17,254 | " S. T. Gaty..... | 17,453 |
| Splints for the forearm, R. Wood..... | 17,888 | " W. Smith..... | 15,970 |
| Spoke tighteners, A. Galbrath..... | 17,242 | Sugar, grape, A. Behr..... | 15,970 |
| Spool, A. R. Merrick..... | 17,964 | " crystallized, anhydride grape, A. Behr..... | 17,890 |
| " and thimble holder, A. M. Barrett..... | 16,706 | " crystallized grape, W. F. Jebb..... | 16,016 |
| Spoolers, stop motion for, A. G. Brown..... | 16,192 | " separating machine, C. Scherbler..... | 16,252 |
| Springs, elliptic, C. H. Parsons..... | 17,374 | " and syrup, flavouring, J. Dally..... | 17,598 |
| " machine for making, P. Fraser..... | 18,164 | " manufacture of, W. F. Browne..... | 17,382 |
| " spiral, O. S. and W. S. Foster..... | 17,876 | Sulphide of zinc, preparing, F. Macfarlane..... | 16,081 |
| Sprinklers, nozzles for, T. B. Smith..... | 15,989 | Suppositories, E. H. Gibbs..... | 17,329 |
| " paris green liquid, N. L. Kinney..... | 17,856 | " compound for, A. Larsen..... | 16,755 |
| Spud fixtures, R. R. Osgood..... | 16,711 | Surcingle, E. Barnard..... | 17,084 |
| Squares, try, J. A. Trant..... | 16,382 | " M. R. Dowlin..... | 18,178 |
| Staining wall, C. Fieroe..... | 17,334 | Swaging machine, W. H. Dayton..... | 17,115 |
| Stamp mills, J. C. Butterfield, et al..... | 18,188 | Swing, rotary, C. Watkins..... | 16,000 |
| Stamps, hand, G. J. B. Rodwell, et al..... | 15,896 | Switch fastening, T. Rowlands..... | 18,117 |
| Staple machine, W. A. Root..... | 17,011 | " rods and coupler, J. Lovejoy..... | 16,756 |
| Starch drying house, G. E. Full..... | 17,015 | " railway, C. L. Cooke..... | 17,905 |
| " manufacture of, A. Atkinson..... | 16,701 | " D. H. Hout..... | 17,990 |
| Staves, machines for packing, P. Parker..... | 18,063 | " M. O'Grady..... | 15,998 |
| Steam boiler, fire pot water chamber, E. P. Bates..... | 17,463 | " D. Tracy..... | 16,329 |
| | | " F. S. Schiffer..... | |

| | | | |
|---|--------|---|--------|
| Syringes, O. Henderick..... | 17,368 | Tire tighteners, S. Basford..... | 16,915 |
| Syrup and sugar, flavouring, J. Daily..... | 16,252 | “ upsetting machine, A. B. Jardine..... | 16,623 |
| “ “ manufacture of, W. F. Browne..... | 17,598 | “ wheel, W. H. Carmont..... | 17,084 |
| Tackle, blocks, J. W. Norcross..... 16.132 | 15,939 | Tobacco process, F. C. Glaser..... | 16,426 |
| Tables, billiard, C. W. Allen, et al..... | 16,210 | Toilet apparatus for ships, D. Wellington..... | 16,005 |
| “ knock-down, F. H. DeTray, et al..... | 16,797 | Tongs, vegetable, A. S. Adams..... | 16,751 |
| “ ladies' work, B. G. Borgesen..... | 17,702 | Tonguing and grooving machine, W. S. Mayo..... | 16,180 |
| “ and desks, adjustable, J. White..... | 18,016 | Tools, A. E. Nelson..... | 16,820 |
| Tag, E. A. Warren, et al..... | 16,197 | “ combination, J. T. Torrey..... | 17,971 |
| “ bottle, N. K. Stanly..... | 17,384 | “ “ R. Erdman..... | 17,335 |
| “ fasteners, M. Alshuler..... | 18,022 | “ holders, W. T. Lauder..... | 17,354 |
| “ and envelope, J. T. Dunham..... | 18,116 | Torches, vapour, D. A. Dangler..... | 17,690 |
| Tanning apparatus, J. L. Braun..... | 17,854 | Tow boats, A. McDougall..... | 16,808 |
| “ hides, putting out machine, J. W. Vaughan.. | 16,262 | “ steering, D. A. McDonald..... | 16,521 |
| “ process, T. P. Tucker..... | 17,082 | Toy savings bank, C. G. and W. J. Shepard, et al..... | 16,564 |
| Taps and cocks, J. Green..... | 17,079 | Trace-detaching device, W. G. Cummins..... | 15,957 |
| “ self-closing, F. Hyde..... | 16,844 | Traction engine, F. W. Webb..... | 16,274 |
| “ water, J. Green..... | 17,079 | “ “ J. E. Birch..... | 17,424 |
| Tapping rings, A. R. Schmidt, et al..... | 16,363 | “ “ J. H. Edward..... | 16,830 |
| Tea chest attachments, M. L. Gage..... | 17,330 | “ “ W. A. Clarke..... | 17,981 |
| Telegraph, J. Muirhead..... 16.431 | 16,432 | “ wheels, J. Enright..... | 17,113 |
| “ cable, S. Trott, et al..... | 16,644 | Transporting goods, mechanism for, L. Jenkin.. | 17,711 |
| “ printing perforator, A. F. and F. B. Johnson..... | 16,743 | Traps, plumber's, A. Chapman..... | 16,058 |
| “ printing, A. F. and F. B. Johnson..... 16.858 | 16,859 | “ W. J. English, et al..... 16.673 | 16,671 |
| “ protector, C. C. Drake..... | 17,458 | “ sewer, M. T. Williams..... | 18,104 |
| “ receiving instrument, A. F. and F. B. Johnson..... | 16,744 | “ “ R. Bain, et al..... | 16,019 |
| “ wire, insulator for, J. S. Lewis..... | 18,054 | “ stench, H. Pietsch..... | 17,044 |
| Telegraphic cable, H. A. Clark..... | 16,280 | “ or cesspool, A. Chapman..... | 16,058 |
| “ instruments, electrodes for, G. Cumming, et al..... | 16,297 | Treadle, power, G. B. Ward..... | 16,224 |
| “ printing instrument, H. Van Hoevenbergh..... | 18,090 | Tricycle, J. G. Bailey, et al..... | 17,851 |
| Telephone, A. M. Rosebrugh..... | 16,868 | Trough and rack, feed, A. R. Yost, et al..... | 17,056 |
| “ A. W. Rose..... | 17,557 | Trucks, hand, C. J. Holman..... | 16,276 |
| “ F. C. Guilleaume..... | 18,061 | Trunk and wardrobe, combined, A. Dryfoos..... | 17,776 |
| “ G. T. Dalley..... | 16,374 | Trusses, C. Cluete..... | 15,954 |
| “ H. B. T. Strangeway..... | 16,089 | “ T. Simmons..... | 16,720 |
| “ H. T. Johnston..... | 16,459 | “ hernial, E. J. Nelson..... | 16,619 |
| “ J. B. Cleaver..... | 17,767 | “ surgical, E. Parker, et al..... | 16,353 |
| “ J. H. Robertson..... | 17,195 | Tube and box fastener, W. H. Blake..... | 17,256 |
| “ The European Electric Co..... | 16,072 | Tube expanding, tool for, J. F. Dettmar..... | 18,197 |
| “ call apparatus, J. Staber..... | 16,091 | “ forming apparatus, W. M. Campbell..... | 17,053 |
| “ exchange, mechanical, G. F. Shaw..... | 17,997 | Tubes for expanding, J. F. Dettmar..... | 18,197 |
| “ protector, C. C. Drake..... | 17,458 | Turn tables, C. A. Greenleaf..... | 16,336 |
| “ signal, A. F. St. George..... | 17,837 | Turnip harvester, U. J. Fulcher..... | 17,841 |
| “ supports, G. A. Wilkins..... | 17,734 | Type and space holders, L. K. Johnson..... | 15,934 |
| “ “ C. T. Loring..... | 17,385 | Vacuum pan, W. A. Hoeveler..... | 17,630 |
| “ transmitter, J. A. Lakin..... | 17,475 | Valve, J. H. Blessing..... | 16,922 |
| “ “ The Overland Telephone Co... 17.095 | 17,095 | “ balance slide, J. J. DeLancey..... | 17,145 |
| Telephonic receiver, The Overland Telephone Co..... | 17,096 | “ balanced slide, J. C. Knecht..... | 17,759 |
| “ transmitter, “..... | 17,095 | “ “ W. T. Reaser..... | 17,823 |
| Textile fabrics, imitation of Persian lamb, L. Pellaud..... | 17,473 | “ bilge water, H. Cords, et al..... | 16,298 |
| “ washing, R. Troy, et al..... | 17,286 | “ check, J. H. Blessing..... 16.903 | 17,685 |
| Thermometers, H. C. Kirk, et al..... | 16,301 | “ electric cut off for, J. Nesbitt..... | 16,229 |
| Thill couplings, J. C. Dietrich..... | 17,476 | “ gate, T. and J. Galvin..... | 18,036 |
| “ “ J. Clouston..... | 17,667 | “ globe, P. G. Van Wie..... | 16,037 |
| “ “ J. Eting..... | 18,220 | “ safety, G. E. Collier..... | 16,232 |
| “ “ J. E. Power..... | 17,622 | “ “ W. E. Pearson..... | 16,475 |
| Thills, devices for shifting, G. H. Doane..... | 18,019 | “ slide, F. W. Richardson..... | 16,939 |
| Thill supports, W. B. McFall..... | 16,370 | Valves and gearing, W. B. Turner..... | 17,822 |
| “ and pole couplings, T. J. Randall, et al..... | 16,075 | “ grinding attachment for, A. W. Case..... | 18,018 |
| Thrasher, flax, A. Hullinger..... | 17,966 | “ steam, N. E. Doty..... | 17,851 |
| “ grain, W. H. Parrish, et al..... | 17,177 | “ straightway, check, J. H. Blessing..... | 17,686 |
| “ and cleaner, I. Miller..... | 17,984 | Vapour generators, I. R. Blumenberg, et al 17.261 | 17,288 |
| “ separator, grain, W. E. Graig..... | 17,422 | Varnish japan elastic, D. Macdonald..... | 16,253 |
| Thrashing machine, A. Love..... | 17,571 | “ or paint, A. W. Burke..... | 16,333 |
| “ “ F. Huber, et al..... | 16,014 | Vaults, artificial stone burial, J. Logan..... | 18,017 |
| “ “ F. J. Craig..... | 16,943 | Vehicles, A. A. Crosby..... 16.549 | 16,550 |
| “ “ G. W. Sharp..... | 16,946 | “ dash board, L. E. McKinnon..... | 15,918 |
| “ “ J. C. Snelder..... | 16,401 | “ gear, A. Wildern..... | 16,618 |
| “ “ J. M. Walker, et al..... | 16,112 | “ “ E. A. Loucks..... | 16,960 |
| “ “ N. Burkholder..... | 16,665 | “ “ M. Barry..... | 17,761 |
| “ “ T. Hall, et al..... | 17,007 | “ “ The Guelph Carriage Goods Co..... | 16,784 |
| “ and separating machine, P. Kaufmann..... | 18,000 | “ pole, F. W. Bishop..... | 17,511 |
| “ machine feeding apparatus, W. H. Lightcap..... | 17,919 | “ spring, A. O. Wilbur..... | 16,670 |
| “ machine moving apparatus, J. Durocher..... | 17,365 | “ “ A. W. McKown..... | 16,283 |
| Thread cutters, spool holder, A. M. Barratt..... | 16,706 | “ “ C. Huffsteter..... | 18,040 |
| “ unwinding device, T. R. Nichols..... | 17,537 | “ “ C. R. and J. C. Wilson..... | 16,925 |
| Tide motor, N. L. Foster..... | 17,923 | “ “ G. B. Saladee..... | 15,880 |
| Ties for securing bags, bales, &c., W. Gibson..... | 17,324 | “ “ J. McCormick..... | 18,120 |
| Tile machine, W. Pennell..... | 18,159 | Vehicle “ L. A. Melburn..... | 16,592 |
| Time controlling system, W. F. Gardner..... | 17,952 | “ “ T. D. Lines..... | 18,122 |
| Tinner's tool, J. M. Uric, et al..... | 17,903 | “ “ W. J. Moran..... | 17,376 |
| Tinning composition, plates, A. F. Taylor, et al..... | 17,826 | “ “ coupling, T. D. Lues..... | 18,066 |
| Tile-setting machines, J. D. McPherson..... | 17,107 | “ tops, S. H. Raymond..... | 16,002 |
| | | “ “ trimming, R. Butterworth et al..... | 16,473 |
| | | “ two-wheeled, E. Storm..... | 16,231 |
| | | “ “ F. J. H. Axford..... | 17,417 |
| | | “ wheels, S. Whitehall et al..... | 17,156 |

| | | | |
|---|--------|--|--------|
| Vehicle wheels, P. Gendron..... | 16,502 | Water power apparatus, N. Yagn..... | 17,998 |
| " " and axles, B. N. Shelly..... | 15,932 | " service leakage detector, T. J. Bell..... | 16,400 |
| Velocipedes, G. N. Spencer..... | 16,731 | " wheel, C. J. Weld et al..... | 17,549 |
| " " " J. M. Lowry..... | 16,115 | " " " H. J. Morse..... | 17,363 |
| " " " W. F. J. P. and J. G. Ahlert..... | 17,061 | " " " and paddle, H. Figge..... | 16,591 |
| " " " ice, A. F. Woodham..... | 15,890 | " " " R. N. Davidson..... | 16,406 |
| " " " railway, J. Murphy..... | 16,226 | Waterproof, blacking, J. A. and L. N. Vankeuren..... | 16,635 |
| Veneer packages, J. Tomlinson et al..... | 16,364 | Waterproofing compound, T. Hunt..... | 17,542 |
| Vent for caaks, H. H. Rayner..... | 16,822 | Weather strip, H. Carter..... | 18,025 |
| Ventilating and warming buildings and cars, T. Rowan | 15,876 | Webbing machine, J. P. Tolman..... | 17,513 |
| " " " fan, L. G. Fisher, Jr. et al..... | 17,180 | Weaving, art of, T. Isherwood..... | 16,632 |
| Ventilation, houses, cars, &c., T. Rowan..... | 15,876 | Weaving machinery, W. Briggs et al..... | 16,207 |
| " " " sewers and houses..... | 16,746 | Weighing apparatus, automatic, J. Stevens..... | 17,610 |
| Ventilator and draft regulator, M. B. Church..... | 17,256 | " " scales, W. C. Farnum et al..... | 17,407 |
| " " " building, W. E. Moore..... | 16,723 | " " " waggons, D. J. and L. D. Norris..... | 17,429 |
| Vessels, compound for lining, E. G. Frisbie..... | 16,942 | Well drilling machines, R. M. Dounie..... | 16,077 |
| " " " " coating, J. A. Wright..... | 15,901 | " " " points and strainers, drive, O. B. Olmsted..... | 15,885 |
| " " " " rigging banks for, J. B. Cook..... | 17,935 | " " " " drive, R. A. Ryrie et al..... | 17,369 |
| " " " " steam, for carrying timber and logs, D. W. | 16,855 | " " " " tubular, R. E. Strait..... | 16,615 |
| Case..... | 18,121 | Wheat smut and polishing machine, H. P. Edmonds..... | 16,184 |
| Vice and wrench, C. E. Bailey..... | 18,121 | Wheelbarrows, J. Bean..... | 17,486 |
| Violins, chin rest for, G. T. Lawrence..... | 17,512 | " " " " P. Allard..... | 16,842 |
| Vises, bench, W. H. Cloud et al..... | 18,118 | Wheels, vehicle, C. Drantly..... | 16,152 |
| " " " parallel, H. F. Read..... | 17,987 | Whippletrees, F. How..... | 17,013 |
| Volatile fluids for storage, &c., treating, S. M. Eiseman | 17,643 | " " " " hook, H. S. Higinbotham..... | 15,925 |
| " " " " matters, treatment of, R. M. Eiseman..... | 17,649 | Whippletree hooks, N. Hill et al..... | 16,341 |
| Vulcanizing compounds of rubber and analogous gums, | | Whip holders, R. Peters, et al..... | 16,137 |
| " " " " A. C. Eddy..... | 17,265 | Whirligig, B. M. Peterson et al..... | 17,754 |
| " " " " J. B. Wilson..... | 16,856 | Whisk-broom holder, T. H. Doyle et al..... | 16,778 |
| " " " " J. G. Pease..... | 16,767 | Whiskey, process for making, M. J. Allen..... | 17,590 |
| Universal joint, P. Lord et al..... | 16,823 | Whitewash, preparation of, C. C. Hughes..... | 16,073 |
| Wagon, J. R. Preo et al..... | 17,738 | Wind instruments, M. Harris..... | 16,150 |
| " " " " J. Moses..... | 17,591 | Windmills, H. N. Hill..... | 17,278 |
| " " " " S. Van Patten..... | 16,156 | " " " " J. E. Toombs..... | 17,400 |
| " " " " T. B. Mackey..... | 16,649 | " " " " R. O. Robinson..... | 16,898 |
| " " " " and sleigh, draft bold, P. Filman..... | 16,610 | " " " " W. C. Jacob..... | 18,162 |
| " " " " body and bed, B. P. Joiner..... | 16,887 | Windows, S. C. Taylor..... | 16,790 |
| " " " " dumping, D. Kennedy..... | 16,288 | " " " " blind, W. S. Laycock..... | 17,149 |
| " " " " gear, A. J. Beach..... | 16,324 | " " " " fastener, W. R. Miller et al..... | 16,934 |
| " " " " gearing, T. Seaman..... | 16,353 | " " " " guards, J. Badger..... | 16,390 |
| " " " " Jack, A. B. Furman et al..... | 17,068 | " " " " sash balances, E. Bradshaw..... | 17,552 |
| " " " " " " woodward..... | 17,009 | " " " " screen, automatic, J. M. Bryant et al..... | 17,279 |
| " " " " load binding pole and chain, H. M. Carlsen..... | 17,033 | " " " " shade, W. J. Cox..... | 17,514 |
| " " " " rack and top, H. G. T. Glasebrook..... | 17,726 | Wire, barb, C. B. Brainard..... | 16,171 |
| " " " " spring, H. Ashley..... | 15,948 | " " " " barbed, D. H. Donovan..... | 17,175 |
| " " " " " " W. Webber..... | 16,206 | " " " " " " G. M. Fish..... | 16,916 |
| " " " " spring platform, J. H. Grogan..... | 18,081 | " " " " " " J. Carpenter et al..... | 16,969 |
| " " " " weighing, D. J. and L. D. Norris..... | 17,429 | " " " " " " for fences, A. Cary et al..... | 17,176 |
| " " " " yoke and draft evener, S. Conant..... | 18,013 | " " " " " " barbs, machine for forming, W. Hewitt..... | 16,511 |
| " " " " " " W. A. Baker..... | 16,894 | " " " " " " barbing machine, D. G. Wells..... | 16,449 |
| Walls with flock, decorating, J. H. and C. E. Campbell | 17,551 | " " " " " " W. P. Chisholm..... | 16,496 |
| Warming and ventilating buildings and cars, T. Rowan | 15,876 | " " " " " " colling machines, E. W. Durkee..... | 17,245 |
| Washboards, G. H. Van Dyke..... | 16,325 | " " " " " " " " J. Tve..... | 15,958 |
| " " " " M. W. Case..... | 18,141 | " " " " " " " " covering..... | 16,038 |
| Wash stands, A. L. Farewell..... | 15,886 | " " " " " " " " " fence machines, C. A. Everett..... | 17,313 |
| Washer, clothes, N. B. Elliott..... | 17,522 | " " " " " " " " " finishing, H. Roberts..... | 10,903 |
| " " " " cutting machines, E. Salomon et al..... | 16,380 | " " " " " " " " " forming mechanism, T. S. Bacon et al..... | 18,033 |
| " " " " metal, A. Bromer..... | 17,714 | " " " " " " " " " machines, barbed, A. Dillman et al..... | 17,802 |
| Washing machine, C. N. White..... | 18,143 | " " " " " " " " " " E. W. Durkee..... | 17,245 |
| " " " " " " C. T. Shadbolt..... | 17,391 | " " " " " " " " " " stretchers, M. Brisbois..... | 17,017 |
| " " " " " " E. L. Keep et al..... | 16,361 | Withes, crushing, W. Leslie, Jr..... | 17,179 |
| " " " " " " J. C. Wilson..... | 17,910 | Wood cutting machine, The Smith Manufacturing Co..... | 17,310 |
| " " " " " " J. H. Mantion..... | 16,236 | " " " " " " working machinery, S. C. Bigford..... | 17,955 |
| " " " " " " J. Fox..... | 16,858 | Wooden bowles, F. Neff..... | 17,118 |
| " " " " " " J. Van Norman..... | 18,222 | " " " " " " plate cutting machines, The Smith Manfg | |
| " " " " " " J. W. Rhodes..... | 17,909 | Work stand, J. A. Fournier..... | 18,037 |
| " " " " " " M. C. Cummings..... | 16,469 | Worm powder, T. McCarroll et al..... | 16,203 |
| " " " " " " M. H. O'Dell et al..... | 17,183 | Wrench, C. A. Blonquist et al..... | 17,806 |
| " " " " " " M. Huffman..... | 17,260 | " " " " " " G. G. Hadley et al..... | 17,698 |
| " " " " " " S. Brillinger et al..... | 17,405 | " " " " " " H. W. Atwater..... | 18,046 |
| " " " " " " S. Pariseault..... | 16,385 | " " " " " " R. W. and F. F. Giles..... | 17,054 |
| " " " " " " W. F. Wilkins et al..... | 16,870 | " " " " " " J. H. Lancaster..... | 17,078 |
| " " " " " " W. Park et al..... | 17,995 | " " " " " " P. Rotermund..... | 18,038 |
| " " " " " " disk, B. S. Wheeler..... | 18,111 | " " " " " " The Girard Wrench Mnf'g Co..... | 18,900 |
| " " " " " " and wringing machine, G. Morehouse..... | 18,142 | " " " " " " " " pipe, A. W. Case..... | 17,219 |
| " " " " " " textiles fabrics, R. Troy et al..... | 17,286 | " " " " " " " " " " I. S. Lake..... | 17,940 |
| Watch case, pocket, A. P. Yates..... | 16,716 | " " " " " " " " " " " J. E. Morrison et al..... | 17,927 |
| " " " " cases, E. A. Muckle..... | 16,893 | " " " " " " " " " " " " J. W. Calef..... | 16,416 |
| " " " " " " R. J. Quigley..... | 17,443 | " " " " " " " " " " " " and nut, I. Kinney..... | 15,972 |
| " " " " " " dials, J. J. D. Trenor..... | 17,359 | " " " " " " " " " " " " " J. L. Taylor..... | 18,115 |
| " " " " " " hands, J. W. Bell..... | 15,956 | Wrenches, and pincher, S. L. Wilmer..... | 16,889 |
| Water closet, seal joint basin for, A. Edwards..... | 17,878 | " " " " " " and vice, C. E. Bailey..... | 18,121 |
| " " " " closets, self-flushing, T. Prosser et al..... | 18,076 | " " " " " " " " nut and pipe, C. H. Hoffman..... | 17,814 |
| " " " " " " ventilating, T. Rowan..... | 16,193 | Yarn winding machine, E. Ashworth..... | 16,093 |
| " " " " " " elevator, steam, E. W. Vanduzen..... | 17,959 | Yeast, dry hop, A. B. Burns..... | 16,219 |

The Canadian Patent Office RECORD

Vol. XI.—No. 1.

JANUARY, 1883.

{ Price in Canada \$2.00 per An.
United States - \$2.50 "

CONTENTS.

| | |
|--------------------------|----|
| INVENTIONS PATENTED..... | 1 |
| ILLUSTRATIONS..... | 17 |
| INDEX OF INVENTIONS..... | I |
| INDEX OF PATENTEES..... | II |

INVENTIONS PATENTED.

No. 15,871. Improvement on Stump Extractors. (*Perfectionnement des arrache-souches.*)

Samuel T. Gaty, (assignee of James L. Neville,) O'Fallon, Mo., U.S., 27th November, 1882; for 5 years.

Claim.—1st. The combination of the sliding capstan with rope and sweep, the capstan adapted to be elevated by building up the coils of rope. 2nd. The combination of the sliding capstan E having a head, with ropes M M, bearing block D and sweep F. 3rd. The combination of bearing block D having incline faces, with oblique sheaves or pulleys R, ropes M M and sweep F. 4th. The combination of upper pulleys R, lower pulleys Q within the beam, evener O having pulleys at its ends, capstan E, ropes M M and sweep F. 5th. The combination of the evener O having pulleys at its ends and links and ropes M M, capstan E and sweep F. 6th. The combination of capstan E, pins G J, sweep F, lever K, pull rod H and push rod I.

No. 15,872. Improvement in Apparatus for Soldering Cans. (*Perfectionnement dans les machines à souder les boîtes métalliques.*)

William W. Williams and William A. Williams, San Francisco, Cal., U.S., 27th November, 1882; for 5 years.

Claim.—1st. The combination, in a machine for soldering on the ends of cans, of the fixed support ing block having a recess adapted to receive and tightly hold the can top or bottom around its rim or edge, the vessel for holding solder and a frame or float for causing the solder to rise and flow around the joint, between the body of the can and its top or bottom. 2nd. In combination with a pan or receptacle to contain a body of solder in a molten state, a fixed holding plate or die B having the discharging trigger, and means for mechanically displacing the solder at intervals and causing its surface to rise to, and to uniformly flow around, the top of said die. 3rd. The combination of a solder-holding pan, a fixed holding block, for the can top or bottom arranged therein, the movable pressure float and an adjustable stop, for regulating the amount of descent of the float in the fluid solder, and the rise of the solder about the joint between the can body and its top, or bottom. 4th. The solder pan or receptacle A and the stationary die B, in combination with the hinged pressure float C H and the adjustable stop N, as means for controlling the vertical movement of the float. 5th. In combination with the hinged frame H, suspended hollow float C and the adjustable stop N beneath the frame H. 6th. In a soldering apparatus, the combination of the die B and the discharging device consisting of the trigger D, lever d and rod f. 7th. The soldering die B having the vent v and outlet tube V.

No. 15,873. Improvements in Fire Kindlers. (*Perfectionnements aux fagots d'allumage.*)

James H. Davis, Ypsilanti, Mich., U.S., 27th November, 1882; for 5 years.

Claim.—1st. A corn cob kindler composed of the cob section A, the rigid plug C driven into one end thereof, and the flexible wick secured in its place by said plug. 2nd. A corn cob kindler composed of a corn cob section saturated with inflammable material, a plug C of rigid material also saturated with inflammable material, and a wick which is held in place by said plug. 3rd. The combination of a corn cob, a rigid wooden plug, a wick, a core G and an inflammable cloth g and F. 4th. The new article of manufacture, to wit: a corn cob saturated and coated with a product of petroleum and covered with a varnish

which will prevent the evaporation of the petroleum, in combination with a wick and a plug for securing the wick in its place.

No. 15,874. Improvements on Fishing Reels.

(*Perfectionnements aux dévidoirs de pêche.*)

William Mills and Thomas B. Mills, Brooklyn, N. Y., (assignees of B. D. Boulton, Jersey, N. J.) U. S., 27th November, 1882; for 5 years.

Claim.—1st. The combination, with the frame and spool of a reel, of a non-rotary internally toothed ring attached to the frame, a spur-wheel upon the spool and a pinion engaging with said ring and wheel, and adapted to be revolved around said wheel and between it and said ring, and rotated on its axis by engagement with said ring. 2nd. The combination, with the frame and spool of a reel, of a non-rotary internally toothed ring attached to the frame, a spur-wheel upon the spool, a rotary handle plate and a pinion pivoted to the handle plate and engaging with said wheel and toothed ring, and adapted to be revolved around said wheel and, at the same time, rotated on its axis by reason of its engagement with said ring. 3rd. The combination, with the spool of a multiplying reel and a handle geared therewith, to rotate slower than said spool, of a ratchet wheel, a coiled spring having an attached pawl or tooth engaging with said ratchet wheel, and a friction box containing said spring, the said box, spring pawl and ratchet wheel being interposed between said spool and handle. 4th. The combination, with the spool of a multiplying reel, of a wheel adapted to rotate therewith and having in it a friction box, a ratchet wheel adapted to rotate in the same direction but at a slower speed than said spool, and a spring coiled in said friction box, and having, at its inner end, a pawl or tooth for engaging with said ratchet wheel. 5th. The combination, with a reel of a handle secured thereto and adapted to be extended beyond the periphery thereof in unwinding, and a spring for retracting the handle after winding. 6th. The combination of the handle plate E, the toothed cap h or disk H, the bifurcated handle I having a rack hz upon one side, and the spring j.

No. 15,875. Improvements on Harrows.

(*Perfectionnements aux herbes.*)

Peter Patterson and Alfred S. Patterson, Patterson, Ont., (assignee of Dewitt C. Reed, Kalamazoo, Mich., U. S.) 27th November, 1882; (Extension of Patent No. 9104).

No. 15,876. Improvements in Warming and Ventilating, and Apparatus Therefor. (*Perfectionnements dans le chauffage et l'aéraye, et appareil pour cet objet.*)

Thomas Rowan, London, Eng., 1st December, 1882; for 5 years.

Claim.—1st. The general arrangement and construction of apparatus for warming and cleansing, or purifying air, before entering railway carriages. 2nd. The general arrangement and construction of apparatus for warming, moistening and otherwise treating air before entering buildings and factories. 3rd. The use of currents of air charged with, or with exhalations from pine oil, or eucalyptus oil, so as to supply chambers with the atmosphere found to be beneficial in the treatment of certain diseases. 4th. Constructing stoves, whereby the used or burnt air and products of combustion are condensed and purified before leaving the stove.

No. 15,877. Improvements on Door, Shutter or Sash Fasteners and Alarms.

(*Perfectionnements aux fermetures d'ateurs des portes, contravents ou châssis.*)

Isaac Brooke, Royer's Ford, Penn., U. S., 1st December, 1882; for 5 years.

Claim.—1st. A fastener, in combination with an alarm consisting of a hammer, a dog which controls the hammer and is controlled by the arm of the fastener, a spring and a bed or nipple. 2nd. A fastener arm and a hammer, in combination with a dog and a spring common to the hammer and dog. 3rd. The dog formed with a wing, in combination with a spring and the arm of the fastener, said spring and arm bearing on opposite ends of said wing.

No. 15,878. Improvements on Steam Injectors. (*Perfectionnements aux injecteurs de vapeur.*)

Garner C. Williams, Ellenville, N. Y., U. S., 1st December, 1882; for 5 years.

Claim.—1st. A steam injector or water inlet port opening into, and an overflow port opening out of one and the same chamber. 2nd. A steam nozzle and a water inlet port opening into one and the same chamber, and an overflow port opening out of said chamber. 3rd. The combination of the water inlet port, the overflow port and the steam nozzle, all in one and the same chamber and arranged relatively to one another, whereby water entering the chamber will submerge the injector nozzle before it can pass out through the overflow. 4th. The combination of a steam nozzle and a water inlet port opening into one and the same chamber, an overflow port opening out of said chamber and a partition between said ports, so that water entering the chamber from the inlet port must flow over the steam nozzle and partition before it can pass out of the overflow port. 5th. The combination of a steam nozzle and a water inlet port opening into one and the same chamber, an overflow port opening out of said chamber, a combining tube and a shield interposed between the steam nozzle and the combining tube. 6th. The combination, with overflow port, of an overflow valve opening outward under the pressure of the steam in the injector, when the water is not flowing to the boiler enclosed by the pressure of the water, when it is flowing into the boiler.

No. 15,879. Improvements on Machines for the Manufacture of Roving. (*Perfectionnements aux machines pour la fabrication de la nêche de filature.*)

Edward W. Kelly, Lowell, Mass., U. S., 1st December, 1882; for 5 years.

Claim.—1st. The combination, with two sets of drawing rolls, of an intermediate rotating condenser arranged to compact and condense without twisting the sliver as it passes from one set of rolls to the other. 2nd. The combination, with two sets of drawing rolls, of an intermediate rotating tubular condenser provided with a spiral bore of substantially cylindrical cross-section. 3rd. In machinery for the manufacture of roving for spinning purposes, the combination of two or more sets of drawing rolls, rotating condensers between each, two sets of drawing rolls to compact and condense the moving sliver without putting twist therein, and means for twisting and winding the sliver after it passes from the terminal set of drawing rolls. 4th. The combination, with the condenser stand and means for imparting lateral reciprocating movement to the same, of the condenser tube, and the rotary driving shaft E provided with a sliding worm engaging corresponding gear on the condenser tube.

No. 15,880. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

Gaylord B. Saladee, Freeport, Ill., U. S., 1st December, 1882; for 5 years.

Claim.—1st. In a spring platform, arms combined with springs of a substantial U-shape, which springs are connected at their transverse portions to the arms, the opposite ends of which extend beyond the springs for connection to the body or frame. 2nd. The combination in a vehicle, of a body frame, arms *c* and U-shaped springs *B*, the same being connected to the centres of the springs and extending beyond the springs and tooth arms, and springs being attached at their ends to the body and frame. 3rd. The combination of the arms *C* connected to the frame and the U-shaped springs connected at the centres to the arms, the latter extending beyond the springs.

No. 15,881. Improvements in Invalid Lounges. (*Perfectionnements aux canapés des malades.*)

Archibald J. McDonald, Springfield, Ohio, U. S., 1st December, 1882; for 5 years.

Claim.—1st. In an invalid lounge, a top consisting of three sections hinged together and having its head section supported upon pivoted journals, whereby its connected sections are made to assume the position required, by tilting of said head section. 2nd. A lounge for the use of invalids and for other purposes, the top of which is constructed in three sections flexibly connected together, the head section thereof being pivoted to the top of the frame standards in such manner as to allow it to be tilted to any required degree of inclination, toward either side of its bearings, and having the foot section supported upon horizontal guide-rails, the intermediate section between the head and foot sections being unsupported, except at its connected ends, the hole of said sections adapted to be operated by the weight of the body thereon, in conforming them to the positions shown and specified, through the movement of the pivoted section. 3rd. A lounge for the use of invalids and for other purposes, having its top sections flexibly connected, one of said sections being pivoted in such a manner as to adapt it to be operated in connection with the other sections attached thereto, by the weight of the body, and provided with an automatic locking device for securing said sections in adjustment. 4th. In a lounge constructed with separate sections, flexibly connected together and having the head or operative sections, pivoted in the manner described, the combination, with said section, of an adjustable head rest applied thereto and made detachable therefrom. 5th. In an invalid lounge, a detachable head rest having a pivoted self-adjustable roller. 6th. In a lounge having its sections flexibly connected together, a detachable head rest for attaching to the head section of the lounge. 7th. In a lounge for invalids provided with devices for manipulating the same, whereby the sections are made to conform to the positions required for consumptive patients, the combination, with the pivoted section, of the adjustable lung pads, as a means of facilitating the purpose and use of the same. 8th. The combination, with the pivoted section *a*, of the lung pads *h* *h* connected together by the webbing *g* and provided with the adjusting devices.

No. 15,882. Improvement in Plough Shares. (*Perfectionnement des socs de charrues.*)

David Clinton, Wellington, Ont., 1st December, 1882; for 5 years.
Claim.—The steel point A B B and the steel wing D C.

No. 15,883. Improvements in Lubricating Devices. (*Perfectionnements dans les appareils de lubrification.*)

Timothy Holland, Troy, N. Y., U. S., 1st December, 1882; for 5 years.

Claim.—1st. The combination of a lubricating vessel containing an oil and water chamber, that is connected with a steam boiler so as to receive steam pressure therefrom, and constructed to deliver oil to a conduit pipe, a conduit pipe to connect said lubricator with one of the steam cylinders of a locomotive, and a steam pipe connecting said conduit pipe with the steam boiler. 2nd. In a lubricating device constructed to supply oil from a pendent nozzle, in descending drops within a glass tube that is larger than the oil pipe and its nozzle, and which glass tube connects so as to be steam tight, with a conduit pipe at the lower end of the tube, the combination of a steam pipe connecting with said glass tube to force the descending drops through the latter and the connected conduit pipe, and steam pipe connecting said conduit pipe with the boiler. 3rd. The combination of an upper chamber connected with the steam boiler, a lower oil and water chamber connected with the upper chamber by a pipe and provided with an oil overflow outlet near its top having a pendent discharge nozzle, and an intermediate valve on the pipe connecting the two chambers to regulate the steam pressure upon the oil and water in the lower chamber, and the flow of condensation from the upper chamber thereto. 4th. In a lubricating device connected with the steam boiler so as to receive pressure therefrom, the interiorly arranged pipe *S* open at its upper end and its horizontal connection *A* made with the annular space *A* in the pipe *P*. 5th. In combination with the glass tube of a lubricating device, an exteriorly placed protecting pipe constructed with oppositely arranged sight openings, through which to observe the flow of oil through the pipe, and a clamp constructed with oppositely arranged plugs, and a thumb-screw to secure the plugs within the sight openings of the exterior protecting pipe. 6th. The combination, with the exterior transparent tube, which receives the oil from the lubricating vessel and delivers it in visible drops to a conduit pipe leading to the cylinder of an engine, of a puppet valve *n* and a chamber *x* provided with a valve seat *n*; arranged intermediate the said tube and the pipe. 7th. A lubricating device in combination, consisting of two lubricating vessels *x* and *x* connected with the boiler at *st* by the branch steam pipes *xz* *xz*, and each having a conduit pipe for attachment to a locomotive steam cylinder, and each conduit pipe connected with the boiler.

No. 15,884. Improvement on Sleigh Knees. (*Perfectionnement des courbes de traîneaux.*)

Benjamin F. Brown, Houghton, Mich., U. S., 1st December, 1882; for 5 years.

Claim.—1st. The sleigh knee *D* provided with the horizontal flange *E* around its upper part, a little below its upper end *D*, having perforations *H* in its sides, to receive the fastening bolts and recesses *J*, in its front and rear to receive the strengthening pins, and having its lower end flared at the front and rear and provided with perforations *K* and flanges. 2nd. The combination, with the runners *A*, of the beam *B* having its lower side recessed, and the brace *C* perforated and having its end secured to the runners of the knee *D*, provided with the perforated and recessed flange *E* around its upper part, a little below the upper end *D*, and downwardly projecting flanges *G* on the sides of its flaring lower part, the fastening bolts *I* and the strengthening-pins *J*.

No. 15,885. Improvements on Drive Well Points and Strainers. (*Perfectionnements aux sonles des puits artésiens.*)

Oscar B. Olmsted, Beloit, Wis., U. S., 1st December, 1882; for 15 years.

Claim.—1st. In a well tube strainer, a central web or spider having radial wings. 2nd. An internal support for well tube strainers, consisting of a series of wings united at their inner edges and radiating from the point of union, closed at the lower end and provided with a coupling ring at the upper end. 3rd. The strainer core or support for the drive well tubes consisting of a series of radial wings, united at the centre and provided with a tapering point at its lower end, and a coupling ring at its upper end. 4th. An internal support for drive well strainers, consisting of a web or spider having radial wings united at their inner edges, and a wire mould around said web or spider. 5th. In combination with a web or core having radial wings, a wire wound spirally upon the web, and a strainer or gauge covering surrounding the wire. 6th. In combination with a core or web having radial wings, a wire wound spirally around said core, a gauge covering surrounding the wire, and a perforated metal jacket enveloping the gauge.

No. 15,886. Improvements on Wash Stands. (*Perfectionnements aux lavabos.*)

Abram L. Farewell, East Whitby, Ont., 1st December, 1882; for 5 years.

Claim.—Firstly, the hinged bracket *B*, and, secondly, the combination of the stand *A* with the bracket *B*, the pitcher *C* and the shelf *E*.

No. 15,887. Improvements on Waggon Beds. (*Perfectionnements aux lits des wagons.*)

Brantley P. Joiner, Florence, Ala., U. S., 1st December, 1882; for 5 years.

Claim.—The combination, in a waggon bed or body, of the bottom *B* having stationary side rails *C* provided with the projecting ends *D*,

consisting of a contractible clamping hook D₁₂ provided with external hooks *d* and tension rods *d*₅, combined with the reel rim D₁. 9th. The combination, with the feed spout having a door *h* and with the reel head provided with a cam face *d*, of an apertured hopper *h* pivotally mounted within the spout, engaged with the cam and accessible from the door *h*, whereby objectionable substances in the material are retained and may be removed. 10th. A group of three centrifugal bolts mounted on a single frame and forming a unitary machine, two of said bolts being elevated equally and the third arranged centrally beneath them, combined with conveyers and a spout or spouts forming part of the machine, whereby material may pass from either of the elevated bolts to the lower one. 11th. In a group of two or more centrifugal bolts, the combination of two of said bolts arranged side by side, enclosing chests therefor provided with discharge openings on their adjacent sides, and a conveyer box or boxes located between said two bolts and common to both, the moving parts in said bolts, which carry the bolted flour out of the chests, being arranged to revolve in opposite directions inwardly and upwardly. 12th. As a means for communicating reduced motion from a flyer shaft to the reel and conveyer shafts in a centrifugal bolt, the combination, with a rotating reel, a flyer and two parallel conveyers, of gear connecting the conveyer shafts with each other, reducing gear leading from the flyer to one of said conveyer shafts, and gear leading from the other of said conveyers to the reel. 13th. In a group of three centrifugal bolts, the combination of the flyer shaft E, the driving belt E₂, the conveyer shafts G₁ G₂, gear wheels *g* *g*₁ *g*₂, fixed pulley I₄, loose pulley I₁; having the pinions *i*, flyer pulleys I I₂ arranged in the plane of I₃, reel pulleys I₇ I₈ in the plane of the pulley I₄, the conveyer pulleys I₅ I₆, also in the plane of the pulley I₄, the belts R and R₁ and tightening pulleys J and J₁ arranged in the respective planes of said belts and located at the left of the pulleys I I₂. 14th. In a group of centrifugal bolts, the combination, with the flyer reel and conveyer shafts and their pulleys and with the belt or belts forming the drive of the group, of the fixed head J₄ provided with a recess J₁, the arm J₃ supporting a pulley or pulleys on an axis J₂, at right angles with said arm, a screw J₈ J₉ and a spring J₇ interposed between the head J₄ and wheel or head J₈.

No. 15,900. Improvements on Magneto-Electric Railway Signals. (*Perfectionnements aux signaux électro-magnétiques des chemins de fer.*)

John R. Johnson and Orville B. Johnson, Boston, Mass., U. S., 5th December, 1882; for 5 years.

Claim.—1st. A cut-off mechanism arranged to disconnect the generator or signal from the mechanism connected with the track, at the first blow received from the same, and provided with clockwork or other suitable devices, to prolong said disconnection until the signal has been given and the train has passed said mechanism. 2nd. A rotary magneto-generator provided with a cushion or spring inserted in the connecting rod C, between the actuating device of said generator, and the lever struck by the passing train, said cushion being adapted to receive a blow given sharply and suddenly to said lever, and to transmit it gradually and without shock to the actuating device of said generator. 3rd. A magneto-generator provided with a cushion or spring *r*, to diminish the suddenness of the blows imparted to the actuating mechanism by passing trains of cars, and with an auxiliary device for severing the connection between the track and said actuating devices and thereby prevent them from receiving more than one of said blows. 4th. In magneto-electric signalling apparatus, the cut-off mechanism consisting of two interlocking hooked rods C G for displacing the driving mechanism from its normal position, and a bent lever E operated by one of said rods to separate said rods provided with a clockwork N and connecting rod K to hold said rods apart, and with a spring H to drive said clock and to interlock said rods when released by said clock.

No. 15,901. Improvements on Impervious Packages. (*Perfectionnements aux boîtes imperméables.*)

John A. Wright, Keene, N. H., U. S., 5th December, 1882; for 5 years.

Claim.—1st. A package made of staves, or pieces of wood, and coated or lined with a compound of glue, water, linseed oil, borax and glycerine. 2nd. A package made of wood, prepared with a strip of paper or cloth, glued or fastened over each of its joints and coated or lined with a compound, consisting of glue, water, linseed oil, borax and glycerine. 3rd. A package made of wood, having each of its joints covered, or protected with a strip of paper or cloth, glued or otherwise fastened in place.

No. 15,902. Improvements in Guides for Paint Staffs. (*Perfectionnements aux guides des règles à peinture.*)

Thomas E. Davis, Range, Ohio, U. S., 5th December, 1882; for 5 years.

Claim.—In guides for paint staffs, the combination, with the foot A having the post *a*, and the adjustable paint staff B, of the slide *b* fitted at one end with a set screw *d* bearing upon the upper end of the main spindle, and having in its other end an eye, which receives the post *a*, and also a set screw *e* thereat, and the eye piece *e* having a collar to adapt it to spindles of different sizes, and an arm adjustable in an aperture in the post *a* by a set screw *f*.

No. 15,903. Improvements in Means of Finishing Zinc-Coated Wire. (*Perfectionnements aux moyens de finir le fil de fer couvert en zinc.*)

Henry Roberts, Pittsburgh Penn., U. S., 5th December, 1882; for 5 years.

Claim.—1st. The automatically opening and closing die made in four, or other convenient number of parts divided centrally, or approx-

ately so, in combination with the bath I of melted metal and provisions for inducing the traverse of the wire through the bath and dies. 2nd. The combination of the dies N₁ N₂ N₃ N₄ formed to leave the tapering hole *a* between them, with the yoke R having inclined sides and the adjustable weight T. 3rd. The combination, with a melted metal bath I, of the scraper N₁ N₂ N₃ N₄ and the material W, for a subsequent wiping treatment.

No. 15,904. Improvements on Gate Attachments. (*Perfectionnements aux pentures des barrières.*)

Robert E. Chambers, New Glasgow, N. S., 5th December, 1882; for 5 years.

Claim.—1st. The combination of an ordinary gate *g* having a lower hinge of ordinary construction H *h* and an upper double jointed hinge consisting of a lever H₁ pivoted upon an ordinary staple hinge pin *h*, one end *h*₂ engaging the eye of a common hinge H, and the other end *h*₃ cranked sideways and, if necessary upwards, and provided with means for attaching a cord or cords, led and arranged for moving the lever forward and backward from a point at a distance therefrom. 2nd. The combination of the gate *g* hinged to a gate post Pt by an ordinary hinge H *h* below and above by a double jointed lever hinge H₁ H₂ *h* which has a cord or cords are attached and led directly and indirectly to posts *p*₁ *p*₂ over suitable pulleys in the rail P, the gate having ordinary latches engaging catches on the posts P₂ P₃. 3rd. The lever hinge H₁ having a boss or crank A₁ arranged to be pivoted upon a hinge pin *h* and one end provided with a pin *h*₂ to engage the eye of a common hinge H, the other end *h*₃ cranked sideways and provided with the means of securing thereto a cord or cords, or their equivalents. 4th. The combination of the cords C₁ C₂ C₃ C₄ attached to the lever H₁ C₁ being led direct, and C₂ indirect over suitable pulleys to a distant post *p*₁ C₃ being led direct, and C₄ indirect to the post *p*₂.

No. 15,905. Improvements on Electro-Magnetic Watchmen's Registers. (*Perfectionnements aux registres électro-magnétiques des gardiens de nuit.*)

George F. Ransom, Cleveland, Ohio, U. S., 5th December, 1882; for 5 years.

Claim.—In a watchman's time registering clock, the combination, with a clock movement, a revolving dial connected therewith, and parallel bars located on opposite sides of the dial and radially thereto, of a series of electro-magnets having needles secured to their armatures and arranged radially to the clock dial for piercing the dial on a radial line.

No. 15,906. Improvements on Boat Lowering Apparatus. (*Perfectionnements aux appareils pour descendre les canots.*)

Martin Bourke, Youngstown, Ohio, U. S., 5th December, 1882; for 5 years.

Claim.—1st. The combination, with suitable cranes, or davits, or arms, to which the ropes or falls are connected, of the drums D E, sliding gear wheel *l* and stationary gear wheel K, and the adjustable shafts carrying their respective gear wheels and pinions. 2nd. The combination, with the standard mechanism for elevating or lowering the boat, of the hollow windrds B and swinging arms C. 3rd. The combination, with the clutches F, of the standard S having braces *a*, and the bolts Q with stops *b*. 4th. The combination, with the standard S having clow *b*, of the clutches *l* provided with spring tripping devices U. 5th. The combination, with the clutches F, of the standards S, bolts Q and pins *g*.

No. 15,907. Improvements on Bed Clothes Fasteners. (*Perfectionnements aux agrafes pour couvrir les lits.*)

Allan Cox, New York, N. Y., U. S., 5th December, 1882; for 5 years.

Claim.—1st. The combination, with a clamp for holding the clothes, of an actuated flexible connection for securing the fastener to the bottom of the mattress, or to the bedstead or to the bed or mattress. 2nd. The combination, with the bed or mattress *b*, of the flexible strap or connection *b* and a clamp E. 3rd. In a bed clothes fastening clamp E, the jaws or sides *e* mounted at their base, but constructed to form a contracted space or mouth at the opposite ends, for reception of the clothes, in combination with the movable cup or locking device K. 4th. The combination, in the clamp E, of an elastic stand or holder consisting of the two sides *e*, united at their base *e* and inclining toward each other, as they rise from said base, with a winding clip K arranged to work upon or against one of the sides *e* and having an elastic bearing as produced by the elastic construction of said holder. 5th. The combination of the rigid internally-corrugated side *e* of the clamp, the elastic side, or jaw and the sliding clip K.

No. 15,908. Improvements on Car-Couplers. (*Perfectionnements aux couples des chars.*)

Asber W. Clark, Orangeville, Ind., U. S., 5th December, 1882; for 5 years.

Claim.—1st. A spring-actuated coupling hook, an uncoupling device and a locking mechanism, whereby the hook can be held at different positions. 2nd. The combination, with the hook *h*, of the spring *k*, the rod *m*, pawl *n* and spring *o*.

No. 15,909. Improvements in Force Pumps. (*Perfectionnements aux pompes foulantes.*)

David O. Holman and Charles A. Macfarlane, Knowlton, Que., 5th December, 1882; for 5 years.

Claim.—The combination, with a reciprocating force pump, of the semi-circular recesses D D, the valve openings H H and covers G G as placed at the sides of the pump, and the valve yokes or frames I I.

No. 15,910. Process for Manufacturing Feather Pillows, Bolsters, &c. (*Procédé pour la confection des oreillers, traversins, etc., de plume.*)

Herman Berger, Milwaukee, Wis., U. S., 5th December, 1882; for 5 years.

Claim.—A filling for bolsters, cushions, pillows, mattresses and similar articles made of turkey, chicken, or other coarse inferior feathers chopped fine.

No. 15,911. Process for Manufacturing Albumen from Fish Spawn. (*Procédé de fabrication de l'albumine avec le frai de poisson.*)

Uno H. Hillman, Osterville, Mass., U. S., 5th December, 1882; for 5 years.

Claim.—The process of manufacturing albumen from fish spawn consisting in adding to the crushed spawn sufficient water to dissolve the albumen, and evaporating the albuminous water by boiling under a vacuum sufficiently low to preserve the ready solubility and coagulative power of the albumen.

No. 15,912. Improvements on Grain Carriers. (*Perfectionnements aux tables des moissonneuses.*)

The Toledo Mower and Reaper Company, (assignee of John S. Davis,) Toledo, Ohio, U. S., 5th December, 1882; for 5 years.

Claim.—1st. The combination of an endless carrier for a harvester, the supporting rollers for the carrier located at the ends of the carrier frame, the adjustable supporting mechanism between said rollers and between the upper and lower portion or opposite surfaces of the carrier, and means for positively adjusting and securing said mechanism. 2nd. The combination of the cross heads provided with bearings, the carrier supporting roller mounted in said bearings, the guideways for the cross-heads, and the adjustable bar connecting the cross-heads. 3rd. The combination of the carrier, its supporting rollers, the sliding boxes or cross-heads, provided with bearings for one of said rollers, the cross-bar between the upper and lower portions of the carrier with which bar the cross-heads are jointed, and the adjusting lever linked to said bar. 4th. The combination of the adjustable carrier supporting roller, the sliding boxes, the guideways, the resilient bar having jointed connection at its ends with said sliding boxes, the adjusting lever, the link or connecting bar and means for securing the lever in its adjusted position. 5th. The combination of the platform, the carrier, the roller mounted in fixed bearings, the adjustable roller, the cross-heads provided with bearings for said adjustable roller, the bar connecting said cross-heads, the link rod, the lever and the cross-bar with which said lever has pivotal connection. 6th. The combination of the platform, the adjustable carrier supporting roller, the adjusting and supporting mechanism therefor, the slotted back board and the rack with which the detent of the adjusting lever engages.

No. 15,913. Improvements on Metal Working Tools. (*Perfectionnements aux outils pour travailler les métaux.*)

James E. Woodbridge and Frederick N. Gardner, Hartford, Conn., U. S., 5th December, 1882; for 5 years.

Claim.—1st. The cap E made convex transversely on its bearing surface and resting on the surface of the cutter, along a horizontal middle line only of said cutter in order to avoid injury to its corners. 2nd. The combination of the grooved cap piece E provided with the side plates F consisting of vertical straps attached to the cap piece and the grooved base D provided with recesses G adapted to inclose and hold a cutter C. 3rd. The base D provided with laterally bevelled ends D', whereby the back of the tool is supported while the cutting edge is left free. 4th. A tool-holder provided with ends D'', bevelled laterally in opposite directions, for holding and supporting tools adapted to cut in both right and left directions.

No. 15,914. Improvements on Sleds and Sleighs. (*Perfectionnements aux traîneaux.*)

Charles M. Amsjen, Wooster, Ohio, U. S., 7th December, 1882; for 5 years.

Claim.—The combination, with the cross-bars a, side rails b and seat board c, of the metallic arches f, the side bars g turned horizontally outward at the top, and the T-iron runners A, the said arch bars and side bars being rivetted together and to the rib e of the runners.

No. 15,915. Improvements on Car Wheels. (*Perfectionnements aux roues des chars.*)

Albert D. Canfield, Arlington, Vt., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination, with a flanged hub and annular plate E, of a rim having two grooves a a, and the sections C D having each two tongues fitting said grooves. 2nd. In combination with the hub and rim of the wheel, the sections C and D having the conical bolts f f placed between them in such manner as to have a drawing action upon the sections.

No. 15,916. Method of Uniting Wood for Floor Coverings. (*Méthode d'assemblage du bois de parquetage.*)

Charles E. Rider, Rochester, N. Y., U. S., 7th December, 1882; for 5 years.

Claim.—1st. Introducing lead or other suitable metal or alloy, into grooves in the wood in the molten condition. 2nd. The wooden tiles, composed of wooden blocks united by the introduction of molten metal or alloy into grooves therein. 3rd. The method of forming joints in wood, by introducing molten metal into grooves formed in the opposing surfaces of the wood, while the latter is in a heated condition.

No. 15,917. Improvements on Electro-Magnetic Devices. (*Perfectionnements aux appareils électro-magnétiques.*)

Elihu Thomson, New Britain, Conn., U. S., 7th December, 1882; for 5 years.

Claim.—1st. In combination with a hollow movable core placed in the interior of a coil of wire or helix, an external casing and tapering extension connected to said casing for the purpose of obtaining an axial attractive force, constant for a constant current independently of changes of position of said core with respect to said coil within practicable limits. 2nd. A movable core H surrounded by a coil of insulated wire and immersed in a vessel of oil or glycerine, and whereby said coil is checked in its movement, in consequence of the resistance to the passage of said oil or glycerine, from a position above said coil to a position below it and vice versa. 3rd. The combination of the following elements, viz: a coil or helix, a movable core, a vessel of oil or glycerine in which said core moves, an exterior iron casing and tapering extension of the same interior to said coil or helix.

No. 15,918. Improvements in Vehicle Dash-boards. (*Perfectionnements aux garde-crotte.*)

Lachlan E. McKinnon, St. Catharines, Ont., 7th December, 1882; for 5 years.

Claim.—1st. In a vehicle dash frame, the extending of the end uprights F F to a point below the bottom rail A and attaching to the extensions P P and additional bottom rail A'. 2nd. The clamp or plate D with holes or slots. 3rd. The special feet B with the offset G. 4th. The combination of a dash having an additional bottom rail A' with clamps or plates D, bolts or screws C and feet B. 5th. The combination of a dash having an additional bottom rail A' with bolts or screws C and feet B. 6th. The combination of a dash having an additional bottom rail A', with clamps or plates D and bolts or screws C. 7th. The combination of a dash having an additional rail A', with bolts or screws C.

No. 15,919. Improvements on Gas Burners for Heating Purposes. (*Perfectionnements aux becs à gaz de chauffage.*)

Thomas Fletcher, Warrington, Eng., 7th December, 1882; for 5 years.

Claim.—A gas burner for heating purposes having slits formed by cutting or by equivalent means for the outlet of a combined gas and air, the slits having such a width, that the lighting back of the flame into the body of the burner is prevented, this width of slit not exceeding one fifteenth of an inch as a maximum.

No. 15,920. Improvements on Thimble Skeins and Axle Boxes. (*Perfectionnements aux cuillers des essieux et aux boîtes à graisse.*)

George W. Smith, Rock Falls, Ill., U. S., 7th December, 1882; for 6 years.

Claim.—1st. A thimble skein having socket b, head c, sand band d, collar e, side arms f, bottom arm g and top arm h, to adapt it to be used in connection with a wooden axle. 2nd. The combination, with a skein having head c, collar e and sand band d, of the box A having the sand band j, shoulder o and collar k.

No. 15,921. Improvements on Animal Traps. (*Perfectionnements aux ratidres.*)

Bennet Greig, New York, N. Y., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The wire frame embodying in its structure the bow-shaped base sections projecting in opposite directions, to support the trap on the ground, the double upright limbs forming the junctions between the base sections, the two traverses at the bottom of the upright limbs, the single traverse at the top thereof, and the stretchers connected to the upper and lower traverses, in combination with the bow-shaped swinging knockers hung to the lower traverses, the springs arranged on such traverses to act on the knockers with a tendency to throw the same in a downward direction, the swinging braces hung to the upper traverse for retaining the knockers in a raised position, and the bait-holding triggers hung to the stretchers for engaging the braces. 2nd. The combination, with two united stationary base sections, each provided with a traverse D, of a bow-shaped knocker loosely hung at its ends on each of said traverses, a spring coiled on each traverse and acting on the knockers, and means for holding the two knockers in an upright position.

No. 15,922. Improvements on Scrap Books. (*Perfectionnements aux albums.*)

Arthur H. Colton, Milwaukee, Wis., U. S., 7th December, 1882; for 6 years.

Claim.—1st. The combination, in a portfolio scrap-book, of the covers A and B and envelopes C, all provided with holes or eyelets D, and one of said covers being further provided with a belaying pin F, a string E passing through said eyelets, both ends of which are attached to the belaying-pin and are adapted to be wound or unwound from the shank thereof, thus shortening or lengthening the available portion of the string, and a string E' attached at one end to the string E and free at the other, and adapted to be wound around the belaying pin and thus secure the book together. 2nd. The combination, with the cover B, of the belaying pin F secured thereto and provided with lateral holes in its shank, adapted to receive and hold the ends of the

string E, and having a head or flange under which the string E_r may be wound and thereby secured.

No. 15,923. Improvements on Dead Pulley Rigs. (*Perfectionnements aux garnitures des poulies fixes.*)

Hilen C. Crowell, Erie, Penn., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The hanger A having legs, or prongs A₁ A₁, in combination with the box B having wings with openings for the said legs A₁ A₁, and means for clamping and adjusting the said box in place upon the said legs. 2nd. The hanger A having legs, or prongs A₁ A₁, in combination with the box B having wings with openings for the legs A₁ A₁, and the set screws 2 2 and 3 3 3 3, and the pivots points 4 4 arranged and operating to secure and adjust said box upon said legs. 3rd. The hanger A having legs, or prongs A₁ A₁, in combination with the box B formed of the parts b b, said parts b having wings with opening for the legs A₁ A₁, and having the part b attached thereto by bolts 1 1. 4th. The hanger A with legs A₁ A₁, in combination with the split box B, split sleeve C with flange C₁, split flange C₂ and split pulley D. 5th. The combination, with the two parts of the split pulley D, of the clamp E formed of the straps e e, with inclined U-shaped lugs e₂, and the bush-irons e₁ with flaring inner walls and the bolts p p.

No. 15,924. Improvements on Hay Presses.

(*Perfectionnements aux presses à foin.*)

William J. H. Kappe, Belleville, Ill., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination of the baling chamber F, follower L, pitman M having recess o, and rack N, vertical shaft G, eccentric rack H, connecting arms O, guide R, castor Q travelling in the latter, and the sweep or main lever I. 2nd. The combination, with the baling chamber F, of the follower L, pitman M hinged to said follower and provided with a pivoted rod G having loop J, hinged cover R having cross bar T, lever W, sliding rods X, cord or chain At and link Ec. 3rd. The combination of the baling chamber F having covers R S provided with cross bars T, loops or clasps U and spring V, and horizontal lever W to which are pivoted rods X having bent ends Z, and springs Y. 4th. The baling chamber F having perforations S₁ and flanges T, pivoted with notches U₁, in combination with the partitions V having studs W₁ and brackets X₁.

No. 15,925. Improvements in Whiffletree Hooks. (*Perfectionnements aux crochets des palonniers.*)

Harlow S. Higginbotham, Allegan, Mich., U. S., 7th December, 1882; for 5 years.

Claim.—A whiffletree hook provided with the collar and the shouldered head, so arranged, in relation to each other and the eye end of the trace, that said end of the trace can only be disconnected from the hook by the indirect passage thereof between the collar and the shoulder of the head.

No. 15,926. Improvements on Lath Trimming Machines. (*Perfectionnements aux machines à dresser la latte.*)

George W. Nichols and William Taylor, Clinton, Iowa, U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination with the saws B B adjusted the length of a lath apart, of the compress arms D D having the lever arms C C, the connecting arms H K, the rock shaft E and the lever L. 2nd. The combination, with the compress-arms D D having the lever arms C C, of the rock shaft E, connecting arms H K and lever L. 3rd. In combination, the saws B B adjusted the length of a lath, the compress arms D D having lever arms C C, the connecting arms H K, the rock shaft E, the lever L and the stationary and movable head blocks M M.

No. 15,927. Improvements on Movable Fence Posts. (*Perfectionnements aux poteaux des clôtures mobiles.*)

Samuel Gibbs, Blue Mound, Mo., U. S., 7th December, 1882; for 5 years.

Claim.—The combination, with the inclined stakes B C D bevelled at their upper ends, of the binding wires E F, whereby the said stakes will be firmly held in place.

No. 15,928. Improvements on Means for Conveying Heating or Motive Agents through a Train of Cars. (*Perfectionnements aux moyens de faire circuler des agents de chauffage ou moteurs sur des trains de chars.*)

Louis Fitzgerald, (Assignee of Maurice J. Walsh,) New York, N. Y., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination, with a pipe for conveying a heating or motive agent along a car, of a section of rigid pipe for extending beyond the car and connected to the pipe which extends along the car, so as to be adapted to move vertically and laterally relatively thereto, and another section of pipe telescopically fitted to the section first named, and having secured to its outer end a coupling piece. 2nd. The combination, of the pipes A B, the telescopic sections A₁ B₁ B₂, the cock C having an externally spherical barrel and shell D.

No. 15,929. Improvements in Apparatus for Heating Cars. (*Perfectionnements dans les appareils à chauffer les chars.*)

Louis Fitzgerald, (Assignee of Maurice J. Walsh,) New York, N. Y., U. S., 7th December, 1882; for 5 years.

Claim.—1st. The combination, with pipes arranged one within the other, for conveying a heating agent backward and forward through the car, of a cock and two separate flexible pipes arranged so as to be independently accessible and extending beyond the car. 2nd. The combination, with pipes arranged one within the other, for conveying a heating agent backward and forward through a car, of a cock and two separate flexible pipes arranged so as to be independently accessible, extending beyond the car and provided with coupling pieces.

No. 15,930. Improvements on Spikes. (*Perfectionnements aux clous barbelés.*)

William H. Bailey, Minneapolis, Minn., U. S., 9th December, 1882; for 5 years.

Claim.—A spike comprehending a head with straight parallel sides and upwardly bevelled hook or head, a rectangular shank or neck below the head, a spirally grooved body in cross-section rectangular and of uniform sectional area and twist, and a point which is double bevelled.

No. 15,931. Improvement in Saw-Guides. (*Perfectionnement des guide-scies.*)

Jacob F. Chandler, Henry G. Chandler and Horace F. Paul, Concord, N. H., U. S., 9th December, 1882; for 5 years.

Claim.—1st. The movable arm B₁ to which are attached the adjustable saw guides C C secured in any desired lateral position by set screws e e, said arm B₁ being adjustably fastened to the swivel piece B by means of set screws b₁ and slots b₂, said swivel piece B being oscillated by lever b, in combination with levers D D₁, guide roll d₅, spindle d₄ and bed bed plate A to which is adjustably attached the rest E. 2nd. The arm B₁ with its saw guides C C oscillated by and in combination with arms or levers D D₁, spindle d₄, guide roll d₅, swivel piece B and spring F, all arranged to operate within and upon the bed plate A. 3rd. The lever D fulcrumed at d, and friction roll d₁, in combination with lever D₁ provided with set screws d₂, slot d₃, spindle d₄ and guide roll d₅. 4th. The swivel piece B journalled into the bed plate at A, actuated by lever b held in a position of rest by a suitable spring F, all arranged for the purpose of oscillating the arm B₁, which may be adjustably fastened to swivel piece B by means of set screws b₁ and slots b₂. 5th. The movable arm B₁, saw-guides C C, levers D D₁, friction roll d₁, spindle d₄ and guide roll d₅, for the purpose of twining or twisting a hand saw while guiding it into work.

No. 15,932. Improvement on Vehicle Wheels and Axles. (*Perfectionnement des roues et des essieux des voitures.*)

Benjamin N. Shelley, Anderson, Ind., U. S., 9th December, 1882; for 5 years.

Claim.—1st. A self-lubricating axle having a channel or reservoir for oil leading to the interior of the axle box from a point between the ends of the axle. 2nd. A self-lubricating axle having its body formed of a piece of metallic tubing with sleeves secured over the ends of the tubing and having discharge orifices leading through the tubing and the sleeves, and a supply orifice between the ends of the axle. 3rd. An axle having its body formed of a piece of metal with sleeves secured to the ends thereof, which are provided with collars at their inner ends, combined with axle boxes having shoulders to fit against the said collars, and nuts adapted to screw into the inner ends of the boxes and washers arranged between the nuts and inner ends of said sleeves. 4th. A self-lubricating axle having a tubular body with sleeves secured to its ends and passages for oil leading from the interior of the tubular body through the sleeves combined with boxes which are secured to the sleeves by nuts screwing into the inner ends of the boxes and plugs screwing into the outer ends of the boxes against the ends of the sleeves. 5th. The combination, with the box having an annular collar on the outer surface near its inner end, of the concave-convex plates having recesses, or sockets, in their adjacent edges, the spokes set in said sockets and a nut on the outer end of the box for binding said parts together. 6th. The combination, with the box having a collar at its inner end, of the externally threaded sleeve placed over the box, the rubber cushion arranged between the box and said sleeve, the spokes having their inner ends set in zigzag order against the sleeve, the plates arranged on opposite sides of the spokes and the nut for binding the parts together. 7th. The combination, with the spokes and the wheel hub, of the felly formed in one piece and secured to the spokes, the flange block fitted between the ends of the felly, the flanged tire having its ends bent inward and inserted in a recess in the block and the screw inserted into the block between the bent ends of the tire. 8th. The combination, with the spokes and the wheel hub, of the felly formed in one or more pieces, and the tire having its ends inserted between two adjacent ends of the felly.

No. 15,933. Improvements on Cultivators. (*Perfectionnements aux cultivateurs.*)

Joseph J. Deal and William M. Johnson, Wilmot, Ohio, U. S., 9th December, 1882; for 5 years.

Claim.—1st. The connecting rods for the draft of a cultivator fastened directly to the front ends of the plough beams. 2nd. The combination of the connecting rods D D, plough beams A A and double back bar B. 3rd. The beams A A having their ends pivoted between two bars. 4th. The boot of a cultivator having its lower section cylindrical. 5th. The boot of a cultivator having the cylindrical lower part at an angle to the axes of the upper part. 6th. The adjustment of the two beams of a cultivator by means of the screw bolts. 7th. The combination of the connecting rods D D, double bar B, plough beams A A, the adjustable screw bolts H H and the shovel boots E. 8th. The fenders G in combination with the shovels of a cultivator. 9th. The boots F fastened to the plough beam by one wooden pin below and a screw bolt above.

No. 15,934. Improvements on Type and Space Holders. (*Perfectionnements aux porte caractères et blancs.*)

Louis K. Johnson, Brooklyn, N. Y., U. S., 9th December, 1882; for 15 years.

Claim.—1st. One or more bearings or shoulders *b b*, situated in the frame or case *a*, and affording support for the columns of type independent of the channels containing them, in combination with the said type containing channels. 2nd. The bearing shoulders *a* for supporting the channels independent of the columns of type contained therein, in combination with the type supporting shoulders *b b*. 3rd. The adjustable bearings or rests *S*, for supporting the channels independent of the columns of type contained therein, in combination with the said channel and with the type supporting shoulders *b b*. 4th. A type and space holder provided with the type supporting shoulders *b b*, to support the lowest type of a column at or near its extremities, while the intervening space between said points of support is unobstructed. 5th. A type and space holder provided with sockets, recesses or seats arranged relatively in advance of, and one above another, and constructed to receive support and present the type containing channels with their broad sides towards the operator. 6th. The combination of the channel supporting recesses, or seats, arranged with relation to each other so as to leave the spaces *P* between them, for the purpose of allowing the channels to be inserted from the point of the case into their respective positions therein.

No. 15,935. Improvements in Saw Swages. (*Perfectionnements aux estampes à scies.*)

Milo Covell, Chicago, Ill., U. S., 9th December, 1882; for 5 years.

Claim.—1st. In a saw swaging mechanism, the combination, with the swaging hammer adapted to have an automatic reciprocating movement, of the adjustable round die, or anvil *I*. 2nd. The combination, with the hammer *C* provided with the spring handle *G*, of the bifurcated socket piece *D*. 3rd. The combination, with the hammer *C*, of the bifurcated socket piece *D*, the sliding-block *a*, the spring-rods *a a* and the springs *b b* *b b*. 4th. The combination, with the crank shaft *E*, of the spring-rods *a a* and the spring placed thereon, the bifurcated socket piece *D* and the hammer *C*. 5th. The combination, with the crank shaft *E*, of the loose band-pulley *F*, the friction pulley *G* and the spring *H*. 6th. The combination, with the crank-shaft *E*, of the band pulley *F*, the friction pulley *G*, the bearing pin *I*, the bell crank *H*, the connecting rod *K* and the treadle board *L*. 7th. The combination, with the right-angled guide plate *K*, of the spring clamps *K* *K*. 8th. The combination, with the body *A* consisting of the parts *B B*, of the round die *I* and the dovetailed clamps *I*.

No. 15,936. Process for Desulphurizing Ores. (*Procédé pour désulfurer les minerais.*)

Zabdiel A. Willard, Boston, Mass., U. S., 9th December, 1882; (Extension of Patent No. 8324.)

No. 15,937. Improvements in Bobbins. (*Perfectionnements dans les bobines.*)

David Hambleton, Lachute, Que., 9th December, 1882; for 5 years.

Claim.—1st. The combination of the barrel *A* having reduced ends and annular shoulders, with the heads *B* formed with annular seats and flaring openings. 2nd. The barrel *A* having reduced ends *a* and annular shoulders *b*, in combination with the heads *B* formed with annular seats *c* and flaring openings *d*, the greater diameter of the barrel entering the head, so that the shoulders will abut against the seat between the sides of the head, and the bushing *C* driven into the ends of the barrel, to expand and force the ends thereof against the sides of the flaring openings. 3rd. The barrel *A* having reduced end *a* and shoulders *b*, in combination with the bushings *C* having flaring head *e*, shank *f* and bevel *g*. 4th. The combination, with the barrel *A* having reduced ends *a* and shoulders *b*, and the bushings *C* formed with flaring heads *e*, of the heads *B* formed with annular seats *c* and flaring openings *d*, said openings increasing in diameter from the seats, to the outer face, or side of the head.

No. 15,938. Improvements on Millstone Drivers. (*Perfectionnements aux conducteurs-moteurs à s meules.*)

Wells E. Sergeant, Minneapolis, Minn., U. S., 10th December, 1882; (Extension of Patent No. 8201.)

No. 15,939. Improvements in Tackle Blocks. (*Perfectionnements aux moufles des patrons.*)

Joseph W. Norcross, Boston, Mass., U. S., 10th December, 1882; (Extension of Patent No. 8203.)

No. 15,940. Perpetual Draw Lime Kiln. (*Four à chaux à opération continue.*)

Joseph Patullo, Orangeville, Ont., 10th December, 1882; (Second extension of Patent No. 1867.)

No. 15,941. Improvements in Filtering Apparatus. (*Perfectionnements aux appareils filtrants.*)

Augustus H. Horsnell and William Murphy, Montreal, Que., 11th December, 1882; for 5 years.

Claim.—1st. In combination with a tap or faucet *A*, the spigot *B* holding a filtering medium. 2nd. In combination with a water pipe, the spigot *B* holding a filtering medium. 3rd. The spigot *B* having inserted therein a filtering medium with wire screens *D D* covering

same. 4th. The spigot *B* holding therein a solid block *C* of charcoal, or like porous substance.

No. 15,942. Improvements on Sad Irons. (*Perfectionnements aux fers à repasser.*)

John G. Baker and Thomas H. Ashbury, Philadelphia, Penn., U. S., 11th December, 1882; (Extension of Patent No. 8237.)

No. 15,943. Improvements on Sad Irons. (*Perfectionnements aux fers à repasser.*)

John G. Baker and Thomas H. Ashbury, Philadelphia, Penn., U. S., 12th December, 1882; (Extension of Patent No. 8237.)

No. 15,944. Improvements on Shingle Machines. (*Perfectionnements aux machines à bardeaux.*)

Byron C. Brown, Clinton, Iowa, U. S., 12th December, 1882; (Extension of Patent No. 8342.)

No. 15,945. A Railroad Track Clearer. (*Machine à nettoyer les voies de fer.*)

Augustus Day, Detroit, Mich., U. S., 12th December, 1882; (Extension of Patent No. 1911.)

No. 15,946. Improvements on Sad Iron Grinders. (*Perfectionnements aux rémouleurs à s fers à repasser.*)

John G. Baker, Penn., U. S., 12th December, 1882; (Extension of Patent No. 8244.)

No. 15,947. Improvements on Sad Iron Grinders. (*Perfectionnements aux rémouleurs des fers à repasser.*)

John G. Baker, Philadelphia, Penn., U. S., 13th December, 1882; (Extension of Patent No. 8244.)

No. 15,948. Improvements on Side Spring Waggon. (*Perfectionnements aux wagons à ressorts de côté.*)

Harford Ashley, Thurlow, Ont., (Assignee of William Wright, Akron, N. Y., U. S.) 13th December, 1882; for 5 years.

Claim.—The combination, with the side springs *F F* and the transverse bars *H H*, of the rearwardly diverging springs *I I* resting with their front ends upon the transverse bars *H H* and having their rear ends connected with the rear axle and the spring *J* extending forward, having its rear end resting upon the transverse bars *H H*, between the front ends of the springs *I I*, and its front end attached to the yoke *E*.

No. 15,949. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

John Byfield, Georgetown, Ont., 14th December, 1882; for 5 years.

Claim.—1st. The standard *Q* attached to a revolving cam cylinder, or its equivalent, and supporting the sliding yarn carriers *R*, in combination with cams for operating the carriers *R*. 2nd. The standard *Q* attached to the cam cylinder *B* and extending above it, with loops *q* on its ends for guiding the yarn, in combination with bobbin carriers *S* carried on the cylinder *B*. 3rd. The rolls *M* resting on the double cam *B* and connected to the cams *O* and *N*. 4th. The rock shaft *L* provided with cranks *r* *f* and pawl *g*, in combination with the ratchet wheel *L* for operating the cams *L*. 5th. The rock shaft *L* provided with a crank *r*, in combination with the cam *K* attached to the cam cylinder *B*. 6th. A cam block *b* attached to the rock shaft *L*, in combination with the lever *J* provided with a pawl *d* for operating the pattern plate. 7th. The pattern plate *D* pivoted on the slide *G* and operated intermittently by the revolving cam cylinder, or its equivalent. 8th. The perforated pattern plate *D*, pivoted on the slide *G* and provided with a scroll *E*, fitting into the guide *H* and caused to revolve intermittently in the form of the scroll, by mechanism operated by the cam *B* or its equivalent. 9th. The perforated pattern plate *D* having an intermittent movement, in combination with movable pins arranged to operate through the lever *J*, the pawl *g*. 10th. As a new article of manufacture, a stocking, or other knitted work made of two or more coloured yarns unbroken from the commencement to the end.

No. 15,950. Improvements in Grinding Mills. (*Perfectionnements aux moulins à blé.*)

Joseph Pratt, Montreal, Que., 14th December, 1882; for 5 years.

Claim.—1st. The combination, with the stones enclosed in a suitable casing, of a central shaft vertically adjustable and having the lower stone secured rigidly thereon and run by a pulley mounted on said shaft. 2nd. The combination of the central shaft *C* provided with pulley *c*, plate *F* fixed rigidly to said shaft stones *D E* and adjusting screw *G*.

No. 15,951. Improvements in the Method of, and Apparatus for Breaking Down and Getting Coal and other Minerals in Mining. (*Perfectionnements dans la méthode de casser et extraire le charbon et les minéraux par la mine, et aux appareils pour cet objet.*)

Charles S. Smith, Leicester, and Thomas Moore, Shipley, Eng., 14th December, 1882; (Extension of Patent No. 13,928.)

No. 15,952. Improvements in the Method of, and Apparatus for Breaking Down and Getting Coal and other Minerals in Mining. (*Perfectionnements dans la méthode de casser et extraire le charbon et les minéraux par la mine et aux appareils pour cet objet.*)

Charles S. Smith, Leicester, and Thomas Moore, Shipley, Eng., 15th December, 1882; (Extension of Patent No. 13,923.)

No. 15,953. Improvements in Hand Cars. (*Perfectionnements aux chars à bras.*)

Samuel H. Walz, Three Rivers, Mich., U. S., 15th December, 1882; for 5 years.

Claim.—1st. In velocipedes for railways, the frame composed of tubing AB trussed as shown, united at the forward end to a sleeve B and at the rear end by means of a curved bar A. 2d. In velocipedes for railways, the tubular trussed frame having at the rear end a spring h provided with a horizontal slot i to receive the journal of the rear shaft, in combination with a slotted arm j by means of which the angle of the shaft c may be adjusted and secured. 3rd. In velocipedes for railways, the forward axle composed of two tubular parts, one operating within the other, the wheels on the opposing tracks being rigidly secured to the tubular shaft so that the wheels and axle revolve together. 4th. In velocipedes for railways having three wheels, the combination of the forward wheels revolving on the same shaft, in combination with the rear single wheel secured to an adjustable shaft. 5th. In a hand car or like device for railways, a seat supported at the rear to the frame by rods on which said seat can have free movement, and also at the front movably attached to and supported by the driving lever at a point below that at which said lever is pivoted to the frame. 6th. In a railway hand car, or like device, a movable seat sustained at its rear part by rods connecting directly to the frame, and at its front by the driving lever.

No. 15,954. Improvements on Trusses. (*Perfectionnements aux bandages herniaires.*)

Charles Cluthe, Toronto, Ont., 15th December, 1882; for 5 years.

Claim.—1st. A pad for trusses composed of a coiled wire having close coils extending across its face and proximately flattened at the point of contact with the body, whereby it is adapted to press on the hernia, with or without an intervening covering and to exert its greatest pressure at its exterior circumference. 2nd. In a double truss and in combination with the cross-bar connecting the pads, the plates B turning on the same centres which hold the cross bar and provided with stops d d to limit their motion. 3rd. The top plate B for trusses provided with the loops e, e, stops d and screw f. 4th. The combination, with a double truss, of the stiff spiral-spring cross bar C provided with eyes at each end for pivotally attaching it to the pads. 5th. The combination, with a double truss, of the stiff spiral-spring cross-bar C provided with adjustable screw eyes f. 6th. The combination, with a truss, of a thick strap consisting of a stiff spiral spring rigidly secured to the pad plate at one end and flexibly connected with the belt at the back, whereby said spring assumes a curve when applied to the body to prevent contact with and chafing of the skin.

No. 15,955. Improvements on Stump Extractors. (*Perfectionnements aux arrache-souches.*)

John Bruce, Prince Albert, Ont., 15th December, 1882; for 5 years.

Claim.—The combination of the shear legs AA footed upon a sill A1 provided with wheels, the legs held by the leg B footed upon a swivel plate B1 and braced by the tie beams T, a jib J secured to the top of the frame and supported by braces U, lever L having one end suspended from the top of the frame, the other being made to be raised or lowered by means of a rope R threaded in the pulleys P in the jib, and the pulleys P in the free end of the lever, the said lever holding in a slot and by a pin d, the draw bar D provided with holes and below with a swivel Y to which the root chain is attached, and above with a fastening, or holding up device, consisting of a chain or rope F running over a pin f and having a fastening or holding up rod or bar F1, which may be secured in a clip F2.

No. 15,956. Improvements on Watch Hands. (*Perfectionnements aux aiguilles des montres.*)

John W. Bell, Conowingo, Ind., U. S., 15th December, 1882; for 5 years.

Claim.—The combination of a pair of coupled hands, one of which has a peripheral groove with inclined sides cut around its hub, and the other a split ring sprung into the groove and around the hub, for the purpose of preserving a constant frictional contact between the two and maintaining a definite angular relation between the hands for correctly indicating the differences in time.

No. 15,957. Improvements on Trace Detaching Devices. (*Perfectionnements aux appareils à détacher les traits.*)

William G. Cummins, McMinnville, Tenn., U. S., 15th December, 1882; for 5 years.

Claim.—1st. The combination, with a whiffletree having a mortise and perforation in each end, of a trace guard journalled in said mortise having its outer end bent to retain, when closed, the trace on the trace pin and having its inner end provided with a depending arm or lever and a detaching rod located in the whiffletree mortise and having its outer end arranged to reciprocate in the end of the whiffletree, said rod being adapted to be actuated by engagement with the depending arm of the trace guard. 2nd. The combination, with a whiffletree having a mortise and perforation in each end of a trace guard, the

outer end of which is bent to retain the trace pin, the inner end being provided with a depending arm, a detaching rod, the outer end of which is provided with a disk plate, or equivalent device arranged to be reciprocated on the trace pin, said rod being adapted to be actuated by the depending arm of the trace guard, and a spring encircling the detaching rod and adapted by pressing against the trace guard arm, to keep it normally closed. 3rd. The combination, with a whiffletree, having a mortise and perforation in each end, of a trace guard bent to retain, when closed, the trace on the trace pin and having an arm or lever depending from its inner end and a detaching rod arranged to be reciprocated by the arm of the trace guard in the end of the whiffletree and adapted when the trace guard is raised to disengage the trace and trace pin. 4th. The combination, with a whiffletree having a mortise and perforation in each end, of a trace guard bent to retain, when closed, the trace or the trace pin, and having an arm depending from its inner end, a detaching rod having its inner end pivoted to the lever arm above said and its outer end adapted to reciprocate in the end of the whiffletree and to push the trace from the trace pin, when the trace guard is raised, and a spring encircling the detaching rod and adapted to keep the trace guard normally closed. 5th. The combination, with a whiffletree provided with metallic tips mortised and perforated at each end, of a trace guard bent to retain, when closed, the trace on the trace pin and having an arm depending from its inner end, a detaching rod, the inner end of which is engaged with the lever arm, its outer end being arranged to reciprocate in the end of the whiffletree tips and a spring encircling the detaching rod and adapted by impinging against the lever arm of the trace guard to keep it normally closed.

No. 15,958. Improvements on Wire Coiling Machines. (*Perfectionnements aux machines à rouler le fil de fer.*)

John Tye, Toronto, Ont., 15th December, 1882; for 5 years.

Claim.—1st. A spindle having a loose fitting collar covering two parallel grooves cut in a helical form on the said spindle, for the purpose of coiling two wires simultaneously. 2nd. In a wire coiling machine in which the wire is moved by the action of two revolving feed-rollers, two or more grooves cut in the circumference of the feed-rollers and on a line with two or more straight parallel holes made through the guiding tool, in combination with two or more spiral grooves cut parallel to each other, on the surface of the coiling spindle, which spindle is provided with a loose fitting sleeve.

No. 15,959. Process for the Distillation of Hydro-Carbon. (*Procédé de distillation des hydro-carbures.*)

Herman Frasch, Cleveland, Ohio, U. S., 15th December, 1882; for 5 years.

Claim.—1st. The process of purifying the vapour of hydro-carbon by passing it through a bath of liquified hydro-carbon. 2nd. The process of purifying the vapour of hydro-carbon, by passing it through a bath of liquid hydro-carbon, at any point between the primary still and final condensation. 3rd. In combination with a still and condenser adapted for the distillation and condensation of hydro-carbon, a bath of liquified hydro-carbon through which vapour from the still may pass before entering the condenser.

No. 15,960. Improvements on Petroleum Stills. (*Perfectionnements aux alembics à pétrole.*)

Herman Frasch, Bay, Mich., U. S., 15th December, 1882; for 5 years.

Claim.—1st. In combination with a still, a dome in the shape of an inverted truncated cone. 2d. In combination with a still provided with a dome, in shape of an inverted truncated cone, circular flanges that may be attached to said dome at their proper place without fitting and without other support than the dome. 3rd. In combination with a still, the dome B, the head a, the flanges b b b b, the plates d d d d of the thimbles h h h h h, the bolt g and the cross bar f. 4th. In combination with a still, the head a, the plates d d d d and the cross bar f, the bolt g and the thimbles h h h h h forming a continuous support. 5th. In combination with a still, the head a, the flanges b b b b, the plates d d d d and the cross bar f, the thimbles h h h h h and the bolt g holding the said plates and said flanges firmly in their respective places. 6th. In combination with a still, the dome B, the head a, plates d d d d, the thimbles h h h h h, the bolt g and the cross bar f, a passage way through said dome, to the inside of said still.

No. 15,961. Improvements in Stove Pipe Shelves. (*Perfectionnements aux tablettes des tuyaux de poêles.*)

Joseph Kurtis and John Bray, Springfield, Ohio, U. S., 15th December, 1882; for 5 years.

Claim.—1st. The combination of the socket d constructed with ledge, or stop d1 and upper and lower cross bars d1 d2, and the shelf e having the shank e1 projected therefrom and constructed with the hook e1, and means for securing the socket to the stove pipe. 2nd. The combination of the socket d constructed with ledge d1 and lower cross bar d2, and adapted to be secured to a stove pipe, and the shelf e having shank e1 constructed with the hook e1. 3rd. In a supporting band for stove pipe shelves, the hinge c composed of the wing b1 having depending pin b2 and the wing b2 provided with the hole for the pin b3, and having the arm b4 extended over and rested on the wing b1.

No. 15,962. Improvements in Fish Drying Houses and Apparatus. (*Perfectionnements dans les sécheries et les appareils de dessiccation pour le poisson.*)

Frederic B. Nichols and Carthart Thomson, Halifax, N. S., 15th December, 1882; for 5 years.

Claim.—1st. The piston blower N with its ingress valves L moving backward and forward in chamber T, and egress valves O external to the drying chamber W in which the high pieces forming the ends of the flakes *d d* resting one on another from the partitions dividing the space at F into a series of chambers, said flakes resting on car *z* which moves on tramway F for the purpose of supplying and removing material and adjusting the flakes to form partitions corresponding with the partitions forming chambers T all in combination. 2nd. The combination of the revolving segmental gearing H with pinions P X and their attached pulleys Q Y having belts V fastened to them and passing over guide pulleys R S, all working in combination with the piston blower N. 3rd. In segmental toothed gearing H attached to the shaft A in such a manner that each succeeding piece of gearing will be the same number of degrees behind the preceding one as is occupied by the arcs and gearing with pinions P X, in combination with blowers N of the series of chambers to force successive blasts of air over the fish, or other materials, placed in the drying chamber U. 4th. The external doors D E in combination with the blowing and drying chambers T U, internal trap doors J K and cooling chamber M, for the purpose of either forcing blasts of external drying air in through the opening at D and out of the opening at E, or by closing doors D E and opening trap-doors J K, to circulate the air contained in the chambers free from damp external air and keep the fish cool.

No. 15,963. Improvements on Sash Balances and Locks. (*Perfectionnements aux contrepoids et fermetures des châssis.*)

Christian J. Scheelky, Martinsburg, W. V., U. S., 15th December, 1882; for 5 years.

Claim.—1st. The combination, with a boxing or frame A, of the upper sash B, the lower sash C having oblique metal lined orifice *g*, cord *f*, pulleys D D secured within the parting strip groove, and a suitable cord retaining device. 2nd. The combination, with the boxing A and balance sashes B C, of the pulleys D D secured within the parting strip groove, the pulleys G secured to the boxing in line with the inside bead, pulley H secured to the lower sash, cord *f* and a suitable device for retaining the lower end thereof. 3rd. The combination of the pulley block having in its end a recess, or groove *b*, and the cord guard E having raised central portion *c*, semi-circular arms *e*, and prongs *d*. 4th. The cord retaining and sash clamping attachment F pivoted eccentrically to the lower sash and having at its upper end recessed lug *m n*, dovetail groove *v*, and rubber strip *t*, and at its lower end recessed lugs *o p* having a cord retaining device. 5th. The combination, with a boxing or frame A, of the upper sash B, the lower sash C having oblique metal lined orifice *g*, cord *f*, pulleys D D and the cord retaining and sash clamping attachment F pivoted eccentrically to the lower sash and having at its upper end recessed lug *m n*, dovetail groove *v*, and rubber strip *t*, and at its lower end recessed lugs *o p* and cord clamping ring *w*. 6th. As an improvement in devices for raising, lowering and securing window sashes, the combination, of a boxing or frame A and an upper sash B, the lower sash C having oblique metal lined orifice *g*, cord *f*, pulleys D G and H, pulley block D, cord guard E having semi-circular arms *e* and prongs *d*, and the eccentrically pivoted cord retaining and sash clamping attachment F.

No. 15,964. Improvements in Machines for Finishing the Blanks of Wire Bale Ties. (*Perfectionnements aux machines pour finir les ébauches des cercles de paquets en fil de fer.*)

The Washburn and Moen Manufacturing Company, (Assignee of Edwin S. Lenox.) Worcester, Mass., U. S., 18th December, 1882; for 15 years.

Claim.—1st. In a wire bale tie blank finishing machine, the combination of a chamber composed of side and bottom plates in which the tie is introduced, and a blade for pressing and forming same attached to an arm or lever, connected with said chamber and operated by means of an eccentric. 2nd. The combination of a chamber in which the blank is held and pressed, a revolving spindle connected with and rotating same, and jaws for holding the main strand of the wire and the end of the returned piece. 3rd. The handle L set loosely on the lever K, pressed inwards by spring *k*, held by nut *l* and capable of retraction.

No. 15,965. Improvements on Machines for Forming the Blank Hooks of Wire Bale Ties. (*Perfectionnements aux appareils pour former les ébauches des crochets des cercles de paquets en fil de fer.*)

The Washburn and Moen Manufacturing Company, (Assignee of Edwin S. Lenox.) Worcester, Mass., U. S., 18th December, 1882; for 15 years.

Claim.—1st. The combination of a revolving shaft carrying pegs which hold the wire and, when turned, bend it into a hook or S-shape and lever also carrying pegs between which the wire is held and serving, when turned, to bend back the end of the tie. 2nd. The combination, with the revolving shaft D carrying pegs which, by its revolution, bends the wire, of guides C C for preventing lateral movement during such bending. 3rd. The combination, with the revolving shaft and lever, of the adjustable gauge L.

No. 15,966. Improvements on Feed-Cutters. (*Perfectionnements aux coupe-paille*)

Andrew Hershey, Bertie, Ont., 18th December, 1882; (Extension of Patent No. 9228.)

No. 15,967. Improvements on Double-Acting Pumps. (*Perfectionnements aux pompes à double effet.*)

Joseph H. Branson, Belmont, N. Y., and Benjamin Branson, Flushing, Ohio, U. S., 18th December, 1882; for 5 years.

Claim.—1st. A pump having its cylinder suspended below the base plate, a suction pipe suspended independently of said cylinder and the discharge pipe-coupling whereby the cylinder may be removed without disturbing the suction pipe. 2nd. A pump having its cylinder suspended below the base plate, a suction pipe suspended below said base plate by a rod connected directly to the base plate and connected to the suction pipe by a suitable coupling, whereby the suction pipe is properly supported when the cylinder is removed. 3rd. A pump having its suction pipe united by a coupling directly with a branch pipe extending above the cylinder, to form a combined vacuum chamber and suspending rod, and opening directly into the coupling. 4th. The combination of the coupling D carrying the suction tube with the suspending rod E, whereby the suction tube may be held in its normal position, when the cylinder is removed. 5th. The coupling B provided with an opening for the discharge tube C, and the coupling D having an opening for the suspending rod E, in combination with said tube C, rod E, the cylinder A and suitable fastening devices. 6th. The couplings B D, one of which has slots provided with recesses, in combination with the cylinder A and bolts having heads, or nuts fitting into the recesses in the coupling. 7th. The couplings B D in combination with the cylinder A, the discharge tube C, rod E and bolt K. 8th. The couplings B D having slots provided with recesses, in combination with cylinder A, discharge tube C, rod E and bolts having nuts, or heads fitting into recesses. 9th. The combination of the base plate F provided with set screws *f f* with the couplings B D, discharge pipe C and the suspending pipe or rod E. 10th. The combination of the base plate F provided with set screws *f f*, with the head plate G, union *h*, cap nut *g*, sections I and nuts *i* on said sections I. 11th. The coupling B provided with an opening for receiving the upper cylinder, a lower opening concentric with the upper one for receiving the lower cylinder, an extension for receiving the discharge pipe, and a guiding socket *l*. 12th. The coupling B provided with an opening for receiving a large cylinder, another and smaller opening concentric with it to receive a smaller cylinder, and an extension to receive the discharge pipe, in combination with two pistons and cylinders of unequal diameter, the small cylinder fitting into the small opening of the coupling and extending upwards, and the other cylinder connected to the larger opening. 13th. The coupling B having an opening to receive the upper cylinder and a lower larger opening concentric with the upper one for receiving the lower cylinder, and an extension for receiving the discharge pipe, in combination with the cylinders of unequal bore, the coupling D and suitable clamping devices.

No. 15,968. Railway Frog Protector. (*Protecteur des rails de croisement.*)

Phillip Sehan, Kalamazoo, William B. Stronger and Clinton A. Glynn, Portage, Mich., U. S., 18th December, 1882; for 5 years.

Claim.—1st. In a device for preventing the foot from being caught in a railway frog, or between two converging rails, a spring plate having the upper straight portion, the side flanges and the perforated end formed on an upward incline. 2nd. In a railway frog foot protector, a spring plate provided with the upper straight portion having the downward and outward extending flanges, whereby said portion is stiffened and allowed to rise flush with the upper face of the rails.

No. 15,969. Improvements on Culinary Forks. (*Perfectionnements aux fourchettes de cuisine.*)

Roswell W. Turner, Boston, Mass., (co-inventor with Norman W. Stearns, Washington, D. C., and Thomas J. Holmes, Boston, Mass.) U. S., 18th December, 1882; for 5 years.

Claim.—1st. The tube A, rod D, spiral spring K and device for compressing the same, in combination with the toggle arms C C and jaws B B. 2nd. The tube A with the jaws B B pivoted to its lower end and with the sleeve *i* made to slide over its upper end, in combination with the rod D connected with the jaws B B by the toggle arms C C, the rod being depressed against the resistance of the spiral spring K. 3rd. The toggle arms C C for connecting the upper ends of the jaws B B with the lower end of the tube A, in combination with the central rod D having its lower end secured to the fulcrum *r* of the jaws, and with its upper end surrounded by a spiral spring K, and attached to a tubular sleeve *l* made to slide over the upper end of the tube. 4th. The collar, or projection *n* on the outside of the tube A, in combination with the sleeve *l*, rod D, spiral spring K, toggle arms C C and jaws B B.

No. 15,970. Process for Manufacturing Crystallized Anhydride of Grape Sugar from a Watery Solution of Grape Sugar. (*Procédé de fabrication de l'anhydride cristallisé de sucre de raisin au moyen d'une solution aqueuse de sucre de raisin.*)

Arno Behr, Chicago, Ill., U. S., 18th December, 1882; for 5 years.

Claim.—The process of manufacturing crystallized anhydride of grape-sugar by forming a solution containing about fifteen per cent of water, with grape sugar of upward of ninety five per cent in purity, and in filling such solution or mass into moulds of ordinary construction and cooling it to a temperature preferably of about 100° Fahrenheit, and holding it about that temperature for from twelve to twenty four hours, or until thorough crystallization has taken place, and in then expelling the liquid therefrom by means of a centrifugal machine.

No. 15,971. Method of Refining Grape Sugar. (*Méthode pour faire la défécation du sucre de raisin.*)

Arno Behr, Chicago, Ill., U. S., 18th December, 1882; for 5 years.

Claim.—The method of refining grape-sugar by forming a hot solution of ordinary grape sugar containing only about fifteen per cent of

water and in stirring into such solution a minute quantity of finely divided crystallized anhydride of grape-sugar previously prepared, and in then depositing the hot mass in molds and allowing it to rapidly cool to about one hundred degrees Fahrenheit, and thereafter cooling it slowly, maintaining at a temperature between one hundred degrees and eighty five degrees Fahrenheit, for from two to three days, or until thorough crystallization has taken place, after which the resulting hard mass of crystals is drained preferably in a centrifugal machine and thereby the molasses or liquid impurities are expelled.

No. 15,972. Improvements on Pipe and Nut Wrenches and Pipe Cutters. (*Perfectionnements aux clés à tuyaux et à vis et aux découpoirs des tuyaux.*)

Israel Kinney, Windsor, Ont., 18th December, 1882; for 5 years.

Claim.—1st. In a wrench, the combination, with the connected jaws B B having their inner edges opposite each other, of the handle A provided with tapering tongues so arranged that they will continually and automatically tighten their grasp on the pipe, or other article, by their wedge-like action while turning the tool in the opposite direction, will relax them. 2nd. The tool, when used as a pipe cutter, having a sharp-edged tongue or blade A, in combination with suitable jaws so constructed that, when the tool is turned in one direction, the said knife A and jaw B will continually and automatically tighten their grasp by a wedge-like action and gradually cut in and through the pipe, the cutting operation being performed by rotating the pipe on the edge *d* of the knife or tongue A. 3rd. In combination with the wrench, or pipe-cutter, the adjusting screw D, metallic block E, anti-friction rollers F F and handles A² A³ A.

No. 15,973. Improvements on Magneto-Electric Railway Signals. (*Perfectionnements aux signaux électro-magnétiques des chemins de fer.*)

John B. Johnson and Orville B. Johnson, Boston, Mass., U. S., 18th December, 1882; for 5 years.

Claim.—In a rotary magneto-machine, consisting of a revolving armature with two induction coils driven rapidly within the field of a set of permanent magnets, by means of multiplying gear and devices connecting said gear with a railroad-track, and operated by passing trains of cars, in combination with a signalling mechanism, set mechanically by the train and adapted to be un-set by means of a mercurial or continuous current of electricity generated by said magneto-machine.

No. 15,974. Improvements on Snow Shovels. (*Perfectionnements aux pelles à neige.*)

Charles A. Way, North Charleston, N. H., U. S., 18th December, 1882; for 5 years.

Claim.—The combination, with the blade A and handle B, of the metallic clasp C provided on its sides with flanges or ears *a*, secured in place by bolts *d d* passing through said ears, and the blade, and riveted upon the plate D, and the bolt *f* passing through the end of the clasp, the thin portion of the chamfered end of the handle and the blade A and riveted on the triangular plate B.

No. 15,975. Improvements on Vehicle Devices for Checking Horses. (*Perfectionnements aux appareils pour contrôler les chevaux.*)

William P. Kirkland, San Francisco, Cal., U. S., 18th December, 1882; for 5 years.

Claim.—The combination and arrangement of the internally toothed hub wheel *c*, sliding windlass rod E mounted in suitable bearings upon the axle B and having a pinion F and ratchet tooth I, sleeves K and O carrying the spring pawl M, and strap P.

No. 15,976. Improvements on Sole and Upper Protectors. (*Perfectionnements aux protecteurs des semelles et des empriègues.*)

Joseph G. Whittier, Attica, Ind., U. S., 18th December, 1882; for 5 years.

Claim.—A metallic casting constructed to conform to the configuration of the toe of the sole and upper of a boot or shoe, protecting both, and provided with a series of projections intermediate of the two edges and formed with downwardly extended spurs, adapting it to be secured between the sole and the upper.

No. 15,977. Improvements on Rubber Buckets for Chain Pumps. (*Perfectionnements aux godets en caoutchouc pour les pompes à chaîne.*)

Edward W. Grant, Ypsilanti, Mich., U. S., 18th December, 1882; for 5 years.

Claim.—1st. The combination of the elastic body A having bevels *c c* and an intermediate groove *a*, with the clamping device adapted for expanding the bucket. 2nd. The combination of the elastic body A having bevels *c c* and an intermediate groove *a*, with the parts B *c h* and *f*. 3rd. The combination of two elastic frusta of cones, whose bases are of equal diameter, having flanges of equal diameter, and an annular groove *a*, with a link clamping device. 4th. A rubber chain bucket consisting of the following elements in combination: a double bevelled annularly grooved portion A having flanges *b b*, the parts B *f*, the screw stem on the part B, the nut *h* and the washers *g*.

No. 15,978. Improvements in Berths for Steamers. (*Perfectionnements aux lits de bord.*)

Gustave Leve, New York, N. Y., U. S., 18th December, 1882; for 5 years.

Claim.—1st. Any vessel carrying passengers compartments or cup-boards, for holding berth frames, bedding, etc., in part constituted of a portion of the fixed partition or walls of the vessel, the fronts of said cupboards being adapted to be drawn out from the said fixed portions and when in that position serving as the end of the berth frames, the other end being supported on the inside of the fixed cup-board. 2nd. Any vessel cupboards or recesses formed in or on the fixed partitions or sides of the vessel, and having their fronts attached thereto by pivoted bars or links D hinged centrally of the extended berth.

No. 15,979. Improvements on Hame Attachments. (*Perfectionnements dans la pose des attelles.*)

Thomas R. Pangle and Richard G. Holloway, New Madrid, Mo., U. S., 18th December, 1882; for 5 years.

Claim.—The combination, with the hame A, of the attachment consisting of the plate B cast at its outer, or forward end with flanged loops *c d* and the pin *h*, said plate extending back beyond the hame and curved, or inclined inwardly.

No. 15,980. Improvements on Shears. (*Perfectionnements aux cisailles.*)

Andrew J. Lytle, Hillsborough, Ohio, U. S., 18th December, 1882; for 5 years.

Claim.—1st. In a shear having a penetrating blade adapted to work into and cut against one side of a slot, the combination, with such blade, of an opposite jaw to form one side of the slot, and a detachable bed-blade fixed along side said jaw and set with its cutting edge above the level of said jaw, to form an opposite and higher side for said slot. 2nd. A shear blade formed of sheet metal longitudinally bent into angle-section and adapted to shear across the thin edge of the metal. 3rd. In a shear having a detachable blade formed of sheet metal bent longitudinally into angle section, the combination, with such blade, of an attaching surface arranged to bear against the inner surface of such blade and also against the under surface of the horizontal part of such blade, whereby the horizontal support of the blade, by means of the angle tends to relieve the screws, or rivets from downward strain. 4th. The combination of the cutting or penetrating jaw or blade B and the jaw *c* having a longitudinal slot I into which the blade B enters, one side of the slot being elevated above the other side, said elevated side being adapted to come in contact with the cutting blade B. 5th. In a pair of shears, the jaw *a* provided with longitudinal channel *a₁* and the blade B entering said channel and retained therein by set screw *b* located at one side of the jaw. 6th. The blade B provided with a fin *b₁*, in combination with the jaw *a* having channel *a₁*, and opening *d* adapted to receive said fin, and one or more set screws *b₁* passing through one side of the jaw and adapted to impinge against the fin *b₁*.

No. 15,981. Improvements on Candy Whistles and Moulds Therefor. (*Perfectionnements aux sifflets en sucre et aux moules pour cet objet.*)

George H. Mills, Philadelphia, Penn., U. S., 18th December, 1882; for 5 years.

Claim.—1st. A mould for candy whistles having a core with a detachable plug at its inner end. 2nd. A candy whistle mould core having its inner end bifurcated, or keffed, and provided with a plug which only partly fills the bifurcation, leaving a slot for the passage of the candy in moulding. 3rd. The combination, with the candy whistle mould core having its inner end bifurcated and one of its tines grooved, of a detachable sliding plug G having a stem *g*. 4th. In a candy whistle having two longitudinal air-passages communicating with an internal air chamber, said passages being divided by a diaphragm *h* of substantially even thickness throughout. 5th. In a candy whistle mould having a vent *h* inclined on its lower or inner side, in combination with a core having its adjacent side correspondingly bevelled, whereby the rear edge of the vent of the whistle formed in such mould is lower than its front edge.

No. 15,982. Improvements on Punches for Marking Cattle. (*Perfectionnements aux poinçons pour marquer le bétail.*)

Auguste Tignière, Wichita, Ks., U. S., 18th December, 1882; for 5 years.

Claim.—The combination of a female die D of pyramidal form with a sharp shear edge, and a male die D² having shear edges, with intermediate concavity.

No. 15,983. Improvements on Spark-Arresters and Extinguishers. (*Perfectionnements aux arrête-flammèches et extincteurs.*)

Thomas G. Leslie, Hay, Ont., 18th December, 1882; for 5 years.

Claim.—In combination with smoke stack A the elbow, or bent pipe B, arrester C having gauge sides D and tapering, or funnel-shaped bottom *h* to which is attached the water cup E, for the purpose of arresting and extinguishing the sparks.

No. 15,984. Improvements on Friction Clutches. (*Perfectionnements aux embrayages à friction.*)

Ralph R. Osgood, Troy, N. Y., U. S., 18th December, 1882; for 5 years.

Claim.—1st. A rocking lever connected with the friction band, said lever being mounted in an arm keyed to the revolving shaft and provided with a crank inclined as explained, a clutch shipper mounted upon the revolving shaft and movable in the direction of the length thereof and a connecting rod having multiple joints, the several parts being combined. 2nd. The clutch collar movable in the direction of the axis of the shaft, a jointed connecting rod hinged at its base to the clutch collar and, at the opposite end, swivelled upon the crank of the rocking lever, the crank movable parallel with the face of the drum, the several parts being combined. 3rd. In combination with the crank which controls the rocking-lever, the thimble mounted thereon and journalled in the forked section of the coupling rod, the base section of said rod being hinged to the clutch collar. 4th. The combination, with the clutch-collar made movable backward and forward upon the shaft, of a travelling wheel mounted in said collar and bearing upon the shaft. 5th. In combination with the drum head, the wooden segments or blocks forming bearing surfaces for the band, the same being held in place by and bearing against the ledges formed in or on the drum head. 6th. The wooden blocks, or segments forming the bearing surface for the band, the same being held in place by the ledges formed in, or on the drum head, and grooved for the reception of an angular band.

No. 15,985. Improvements in Saw Clamps and Bench Irons. (*Perfectionnements aux pannes et aux montonnets.*)

Thomas Crispin, Detroit, Mich., U. S., 18th December, 1882; for 5 years.

Claim.—1st. The adjustable bar H in combination with the slotted standard C. 2nd. The combination of the shanks BB with base A, standards c c.

No. 15,986. Improvements on Electric Logs. (*Perfectionnements aux locks électriques.*)

Robert M. Lowne, East Ead Finchley, Eng., 18th December, 1882; for 5 years.

Claim.—1st. A hermetically close rotator *a* containing the apparatus for making and breaking contact and provided with an air chamber *as*. 2nd. In combination with a hermetically closed case, or rotator *a*, an enclosed suspender or rolling weight *b* which is the revolution of the rotator gives motion by a projection or carrier *c* to a train of wheels *e1 e2 e3 e4 e5* operating the contact maker and breaker. 3rd. In making and breaking contact by means of a fly wheel *d* operated by a spring *e* and a train of wheels *e1 e2 e3 e4 e5* set in motion by a suspended, or rolling weight *b*, all enclosed within the hollow rotator. 4th. Establishing electrical connection between the rotator and the contact *op* pole of the battery, by means of a platinum centre, or contact *op* *ps* carried by the rotator, and a platinum point *ms* carried by a piece *ms* spring *m2* connected to the conductor *m* of the cable. 5th. Effecting electrical connection between the rotator and the zinc pole of the battery by means of the rotator case *a*, the surrounding water and the swivel *o*, which latter is in connection with the conductor *a* of the cable. 6th. The combination of hermetically closed rotator case *a* containing the contact making and breaking mechanism, the disk *i*, wheels *j*, plate *k* and frame *kl*. 7th. The combination of hermetically closed rotator case *a*, enclosed suspended or rolling weight *b*, train of wheels *e1 e2 e3 e4 e5*, fly wheel *d*, contacts *op ps*, platinum centre or contact piece *ms*, platinum point *ms* and spring *m2*.

No. 15,987. Improvements on Fertilizer Distributors for Grain Drills. (*Perfectionnements aux distributeurs des engrais pour les semailles en ligne.*)

Jacob S. Baker, Hanover Junction, Penn., U. S., 18th December, 1882; for 5 years.

Claim.—1st. The combination of the rollers D with scrapers I having their edge in close contact with the rollers, to prevent the fertilizer from sticking and clogging on the rollers and the valve F. 2nd. The combination, with the valve F, of the connecting rods F₁, springs *f* arranged upon said rods, lever F₂, cam G and oscillating crank shaft G carrying said cam. 3rd. The combination of the plane rollers D and scrapers I having their bevelled edge in close contact with the rollers, to prevent the fertilizer from sticking and clogging on the rollers, in combination with the valve F, the connecting rods F₁, springs *f* arranged upon said rods, lever F₂, cam G and oscillating crank shaft G carrying said cam.

No. 15,988. Improvements on Machines for Cutting and Fishing Ships' Anchors. (*Perfectionnements aux machines à couper et traverser les ancres des navires.*)

John N. Purdy, St. John, N. B., 18th December, 1882; for 10 years.

Claim.—The combination of the small windlass and turn-table, with the cathead.

No. 15,989. Improvement in Nozzles for Sprinklers. (*Perfectionnement des bécasses d'arrosoirs.*)

Fernando B. Smith, Wilmot, Ohio, U. S., 18th December, 1882; for 5 years.

Claim.—The combination of a discharge tube A, spraying device and a wire, the spraying device being fastened to the wire in such a manner that it will always spring back to the centre of the tube when left free to move.

No. 15,990. Improvement in Car-Couplings. (*Perfectionnement des accouplages de chars.*)

The Atwood Railway Wheel Company, (assignee of Isaac S. McEichen.) New York, N. Y., U. S., 18th December, 1882; for 5 years.

Claim.—1st. A draw-bar attachment for car-couplers composed of two horizontal beams H attached to the car by suitable means, and being cut away to receive two cross-bars B and C placed on the top of these beams and at right angles to them having between them the springs D, and the draw-bar G consisting of two parts *a* and *a1* secured to each other by means of a pin K, one part *a* passing through the cross-bar B and the other part *a1* passing through the cross-bar C, and being secured on the outside by a pin. 2nd. The coupler A having its draw-bar G composed of two parts *a* and *a1*, each part passing through the adjacent cross-bar and secured to each other by means of the pin K, for the purpose of giving freedom of movement to the coupler A.

No. 15,991. Improvements in Automatic Cash Carriers. (*Perfectionnements aux machines à transmettre la monnaie.*)

William S. Lamson, Lowell, Mass., U. S., 18th December, 1882; (Extension of Patent No. 15,138.)

No. 15,992. Improvements in Automatic Cash Carriers. (*Perfectionnements aux machines à transmettre la monnaie.*)

William S. Lamson, Lowell, Mass., U. S., 19th December, 1882; (Extension of Patent No. 15,138.)

No. 15,993. Improvements in Compounds for Sewer Pipes, Sidewalks, &c. (*Perfectionnements dans les agglomérés pour les tuyaux d'égouts, trottoirs, etc.*)

Daniel H. Dorsett, Clinton, Iowa, U. S., 21st December, 1882; (Extension of Patent No. 14,128.)

No. 15,994. Improvements in Compounds for Sewer Pipes, Sidewalks, &c. (*Perfectionnements dans les agglomérés pour les tuyaux d'égouts, trottoirs, etc.*)

Daniel H. Dorsett, Clinton, Iowa, U. S., 21st December, 1882; (Extension of Patent No. 14,128.)

No. 15,995. Improvements in Stoppers for Tooth Powder Bottles. (*Perfectionnements aux bouchons des bouteilles pour la poudre dentifrice.*)

Robert H. T. Nesbitt, Leavenworth, Kas., U. S., 21st December, 1882; for 5 years.

Claim.—The cork, or stopper, having in its upper end a horizontal tray, substantially the shape of and adapted for the insertion of a tooth brush.

No. 15,996. Improvement on Nail Cutting Machines. (*Perfectionnement des machines à découper le clou.*)

John Coyne, Pittsburg, Penn., U. S., 21st December, 1882; for 15 years.

Claim.—1st. The arrangement of a diagonally arched gripping lever, with a heading lever pivoted centrally below the gripping dies, so as to operate within the diagonal arch of the gripping lever, for the purpose of securing rigidity and certainty of action of the heading lever and greater compactness of construction. 2nd. The single toggle arm H seated by ball and socket joints in and between the extremity of the short arm of the cutting lever, and the extremity of the heading lever at an angle to the axis of the latter, so that, when the short arm of the former is raised, it communicates a rapidly decreasing movement to the heading-lever, by bringing the toggle arm in line with the axis of the heading-lever. 3rd. The combination of a heading-lever having a short transverse arm, a toggle for communicating a forward movement to said lever, a lug on the transverse arm of the lever and a spring, bearing on said lug for retracting the lever. 4th. The combination, with the arm of the gripping lever and cam for operating the same, of the divided bearing composed of the cam friction plates adjustable to and from each other, to vary the length of time of contact between the cam and gripping lever. 5th. The combination of the rear arm of the gripping lever and the cam 38 on the main shaft, with an ellipsoidal cam yoke constructed for the purpose of communicating the peculiar required intermittent motion to the lever. 6th. The combination of a moving cutter having spring gauge pivoted in its rear, an adjusting screw to the cutter, and a stop device to limit the forward movement of the gauge, the arrangement of the stop device back of the gauge so as to permit of the location of the adjusting-screw centrally to the cutter. 7th. The arrangement in a cut-nail machine, of a rock shaft pivoted below the bed, for communicating power to a self-feeding device, and operated by power from the main shaft through the medium of shafting and gearing. 8th. The combination, with a cut-nail machine, of the bracket 73 for sustaining and connecting a rail separating device. 9th. In combination with a cut-nail machine, the bracket 75 for sustaining the agitator of the nail-separating device.

No. 15,997. Improvements on Switch Stands. (*Perfectionnements aux bâtis des aiguilles de chemin de fer.*)

Dwight Tracy, Ridgewood, N. J., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination of a switch-moving rod and a switch provided with interlocking lugs or catches, having inclined engaging faces and one of which is adapted to yield to enable the lug, or catch upon the rod to pass the lug or catch upon the stand. 2nd. The combination of a switch-moving rod and a switch stand provided with

interlocking lugs or catches, having inclined engaging faces and one of which is adapted to yield, to enable the lug or catch upon the rod to pass the lug or catch upon the stand, and a spring for maintaining said lugs, or catches in engagement with each other. 3rd. The combination of a switch-moving rod and a switch stand provided with interlocking lugs, or catches, having inclined engaging faces, a spindle adapted to yield longitudinally, a crank upon said spindle for actuating said moving rod, and a spring for returning said spindle and crank. 4th. The combination of the rod B and stand C, provided with inclined catches *c, d*, the spindle D, the slotted crank D', the crank pin *b* rigidly fixed to said rod and engaging with said slotted crank, and the spring G arranged with said stand and between the shoulders *j* and *k*. 5th. The combination of a switch-moving rod and a switch stand provided with interlocking lugs, or catches, a spindle, a slotted crank and a crank pin fixed to the said rod and fitting the slot in said crank, whereby provision is afforded for moving the rod laterally to disengage the lug or catch from the lugs or catches upon said stand, and for moving it longitudinally for shifting the switch. 6th. The combination of a switch-moving rod and a switch stand provided with interlocking lugs, or catches, a spindle and slotted crank, a crank pin fixed to said moving rod and fitting said slotted crank, and a locking bolt projecting on the sides of said rod for precluding lateral movement thereof. 7th. The combination, with a switch-moving rod and a switch stand provided with interlocking lugs, or catches, a spindle and a slotted crank for operating said rod, and a locking bolt projecting on the side of said rod and precluding lateral movement thereof, of a handle adapted to be moved horizontally to turn said spindle, and raised or lowered to actuate said locking bolt. 8th. The combination of the switch stand, or column C, the spindle D, the handle E fulcrumed at *e*, the locking bolt F having a ring-shaped upper portion F' surrounding said stand or column, and the link *g* connecting said handle and said ring-shaped portion F'.

No. 15,998. Improvements on Railway Switches. (*Perfectionnements aux aiguilles de chemin de fer.*)

Dwight Tracy, Ridgewood, N. J., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination of a movable switch rail forming one rail of the turn-out, a stationary frog-rail forming a portion of the opposite side of the main track and a laterally yielding outer frog-rail, and a guard-rail placed upon opposite sides of said stationary frog-rail and connected positively together so as to move simultaneously. 2nd. The combination of a movable switch-rail forming one rail of the turn-out an outer frog-rail constructed and secured so as to form a laterally yielding spring and forming the other rail of the turn-out, and a continuation of the main rail, a stationary frog-rail upon the inner side of said outer frog-rail, and a guard-rail connected with said outer frog-rail. 3rd. The combination of a movable switch rail forming one rail of the turn-out, a stationary frog-rail forming a portion of the opposite side of the main track and an outer frog-rail, and a guard-rail arranged on opposite side of said stationary frog-rail, both constructed and secured so as to form laterally yielding springs and connected positively together, so as to move simultaneously. 4th. The combination of a laterally yielding outer frog-rail forming one rail of the turn-out, and one rail of the main line and a continuation of the main line adjacent to said turn-out rail, which is deeper than said outer frog-rail and over the flange of which said outer frog-rail may be moved. 5th. The combination, with a fixed rail end, of wing rails secured to the sleepers at their ends, suitably spaced and secured together at their middle parts and adapted to be sprung either way, so that one of said wing rails shall be immediately adjacent to said rail point.

No. 15,999. Improvements on Life Boats.

(*Perfectionnements aux bateaux de sauvetage.*)

William Lockerby, Newton, Mass., U. S., 21st December, 1882; for 5 years.

Claim.—In a collapsible life boat, the oblong permanently inflated section A provided with bulk heads *b, b*, in combination with the extension section consisting of the rigid bottom *c* and a flexible water proof strip secured to the lower edge of section A.

No. 16,000. Improvements on Railway Switch Fastenings. (*Perfectionnements aux arrêes-aiguilles de chemin de fer.*)

Thomas Rowlands, Prescott, Ont., 21st December, 1882; for 5 years.

Claim.—1st. The combination, with the switch stand and switch mechanism having a switch lever 8 provided with post 18, of the rocking shaft 16 having a crank end and provided with locking arms 17 17, lift bar 15, latch bar 14, hold fast block 13, notched bar 11, moving end-wise therein and connecting with bar 10 tying the rails 11 of the switch for locking the bar 11 by the downward throwing of the arms 17 17 on to the top of the post on the switch lever. 2nd. In combination with the switch rails and a switch mechanism operated by a lever 8, the safety attaching tie bar 10, notched bar 11, hold fast block 13 and latch bar 14 for locking the rails after adjustment of the switch mechanism. 3rd. In combination with the rock shaft 16 having locking arms 17 17, the switch lever 8 having post 18 engaging with said arms, for locking the latch bar.

No. 16,001. Improvement in Car-Couplings.

(*Perfectionnements aux accouplages des chars.*)

Edward L. Litton, Gaffney, S. C., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The draw-head A provided with a shaft B, and bar E having hook F and link G, in combination with the arm C, the rod D and the springs *e, e*. 2nd. The combination of the shaft B extending to the sides of the car and provided with handles, the link bar E provided with hook F and spiral spring. 3rd. The pivoted link G and spring *e*, in combination with link bar E and its hook F.

No. 16,002. Improvements on Vehicle Tops.

(*Perfectionnements aux couvertures des voitures.*)

Silas H. Raymond, South Bend, Ind., U. S., 21st December, 1882; for 5 years.

Claim.—The combined nut-lock and fastening for rotatively uniting parts of vehicles, consisting of the screw stud 1 attached to one of the parts and having a flat portion, or depression 8, an elastic washer 4 placed thereon and resting against a suitable bearing surface, a metal washer resting on the elastic washer, the other part to be fastened, a metal washer 6 having a flat portion or straight edge 7 in its eye and radial projections 9 on its face, and nut 11 having radial recesses 10.

No. 16,003. Improvements on Ale Condensers.

(*Perfectionnements aux condenseurs à bière.*)

James W. Evenden, Rome, N. Y., U. S., 21st December, 1882; for 5 years.

Claim.—The combination of the barrel for holding the ale, a connecting pipe, or tube, a three way cock and the cask, or vessel, into which the ale is drawn to be condensed.

No. 16,004. Improvements on Car Trucks.

(*Perfectionnements aux trains des chars.*)

James W. Chisholm, Brooklyn, N. Y., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The king-bolt 18 connecting the truck frame to the car body bolster 12, in combination with the suspension links a connecting the axle boxes 3 3 with the truck frame. 2nd. In a car truck, in combination, axle-box suspension links adapted to allow the axles and wheels to move transversely in the truck frame, double inclined bearing plates and supporting rollers, whereby the car body is raised as the truck swivels thereunder and a central king-bolt, or rigid swivelling connection.

No. 16,005. Improvements on Toilet Apparatus for Ships.

(*Perfectionnements aux lavabos des navires.*)

Darius Wellington, Boston, Mass., U. S., 21st December, 1882; for 5 years.

Claim.—1st. A wash bowl supported on a ball and socket joint and adapted to maintain a level position at all times independent of the ship's movement. 2nd. The combination, with a wash bowl having an outlet coupling supported in a ball and socket joint, of a weight, or counterpoise connected with said coupling. 3rd. The combination, with a wash bowl having an outlet coupling supported in a ball and socket joint, of a nut secured to said coupling and having weighted arms adapted to form a support for a waste jar, whereby the bowl and jar will be maintained constantly in a level position independent of the ship's movement and without liability of spilling their contents. 4th. The combination of a bracket waste pipe and stretch trap supported thereby, a self-levelling bowl having an outlet coupling supported in said bracket by a universal joint and communicating with the waste pipes, and a counterpoise connected to the lower portion of the bowl and extending below said bracket. 5th. The combination, with a self-levelling bowl, of a waste pipe or pipes connected therewith, and adapted to convey its contents away from a cabin or stateroom. 6th. A water tank hinged to a suitable support and adapted to be turned down to form a table. 7th. The combination, with a self-levelling bowl, of a water tank hinged to a suitable support above said bowl and adapted to be turned down over the same to form a table. 8th. The combination, with a suitable frame supporting a water tank and a self-levelling wash bowl, of a sliding mirror. 9th. The combination of a self-levelling wash bowl, a hinged water tank located above the same and adapted to be turned down to form a table, and a vertically sliding mirror provided with means whereby it may be adjusted and held at any desired height. 10th. The combination of a self-levelling bowl provided with a counterpoise, a waste jar supported on said counterpoise, a flat rectangular water tank hinged to a support above the wash bowl and adapted to be turned down to form a table and a vertically sliding mirror arranged in a frame at the rear of the tank.

No. 16,006. Improvements in Cocker Machines.

(*Perfectionnements aux machines à iraire.*)

Thomas M. Bales, Dublin, Ind., and Jacob A. Jackson, Des Moines, Iowa, U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination, with the inclined frame A, of the inclined angular rotating shafts I K, the lower one being placed to cause the endless belt to incline upwardly and outwardly, the endless belt L consisting of hinged plates extending lengthwise of the rotating shafts and having their surfaces covered by perforated plates of a size corresponding thereto, and the metal lined pivoted side F inclined towards the belt and forming, in connection therewith, an inclined trough, governed by spring pressure. 2nd. The combination, with the inclined rotating shafts I and K and the sectional hinged endless belt, of the metal side H secured to the ends of the frame and the top of the center-board D, to form trough H and space A. 3rd. The combination, with the endless belt, metal side H, trough H and center-board D, of the inclined strip E and the pivoted inclined side F.

No. 16,007. Improvements on Inlaid Work, and Process for Producing the same.

(*Perfectionnements aux ouvrages en marqueterie, et procédé pour cet objet.*)

William C. Edge, Newark, N. J., U. S., 21st December, 1882; for 5 years.

Claim.—1st. the method of producing inlaid work which consists in intimately connecting two or more slices of metal in them, embossing them so as to bring parts of the lowermost slice into the plane of the uppermost slice, and in then cutting down the embossed parts to show the metal of the lower slice, or slices, in that of the upper. 2nd. Inlaid work, composed of an upper perforated slice *a* of metal and of one or more lower slices, each of which extends beneath the slice *a* and projects also into the perforation of said slice *a*.

No. 16,008. Improvements in Gas Motor Engines. (*Perfectionnements aux machines à gaz.*)

Thomas Ashbury, Herbert Sumner, William Lees and Richard W. B. Sanderson, Manchester, Eng., 21st December, 1882; for 5 years.

Claim.—1st. the combination of two or more gas motor engines with cranks equidistant, or at any convenient angle in the circle of traverse. 2nd. The arrangement of one side shaft for driving the valve gearing and governors to each pair of cylinders. 3rd. The arrangement of duplicating gas motor engines directly opposite, or side by side, each other, in one bed common to both ensuring thereby perfect freedom from oscillation by balancing reciprocating parts.

No. 16,009. Improvements on Apparatus Connected with increasing the Illuminating Power of Coal Gas. (*Perfectionnements aux appareils se rattachant à l'augmentation de la puissance d'éclairage du gaz de houille.*)

Frederick Weston, Brixton, Eng., 21 December, 1882; for 5 years.

Claim.—1st. the arrangement of carburetting chamber with its lined passages. 2nd. The arrangement of screw-cap, spindle, spring and valve for replenishing the reservoir and putting the apparatus in or out of action. 3rd. The construction and arrangement within one vessel, or apparatus, of appliances for replenishing the reservoir and for setting the apparatus in or out of action and of the other parts therewith.

No. 16,010. Improvements on Churn Dashes. (*Perfectionnements aux battes-beurre.*)

Hiram C. Robinson, DeSoto, Ill., U. S., 21st December, 1882; for 5 years.

Claim.—The disk *C* having bevelled slots or openings *c* and secured upon the lower end of the driver shaft, in combination with the rotary sleeve *B* having spiral flanges *B*.

No. 16,011. Improvements on Awning Frames. (*Perfectionnements aux châssis des tentes.*)

Egbert C. Cook, Chicago, Ill., U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination of the front rod *D* made in sections, the screw coupling *D* for coupling the ends of the said sections, the brace rods *C* and the T-couplings *E E* for coupling the brace rod to the front rod. 2nd. The combination of the wall plates *B B* having hooks *B* thereon, the brace rods *C C* having thereon the thimbles *C* with their eyes *a*, the front rod *D* made in sections, the screw-coupler *D* and the T-couplings *E E*.

No. 16,012. Improvement in Bags for Fertilizers. (*Perfectionnement dans les sacs à engrais.*)

Charles Richardson, Ephraim J. Walton and Francis N. Buck, assignees of Charles E. Baek, Wilmington, Del., U. S., 21st December, 1882; for 5 years.

Claim.—A textile or fibrous sack, or enclosing integument, for inclosing phosphates, guanos and fertilizers, the threads, fibres or substance of which is coated, saturated or impregnated with a soluble silicate.

No. 16,013. Improvements in Steam Boilers. (*Perfectionnements aux chaudières à vapeur.*)

Dan W. Kellogg and William A. Kirby, Auburn, N. Y., U. S., 21st December, 1882; for 15 years.

Claim.—1st. In a vertical cylindrical steam boiler, the combination of a feed water pipe, a closed feed water heating drum and a water heating coil, the said drum being connected on one side with one end of, and surrounded by a water-heating coil, the other end of which communicates with the upper portion of the annular water leg. 2nd. The combination of the external vertical feed water pipe, a closed water heating pipe arranged in the upper part of a vertical steam boiler having a double shell the whole length thereof, and a water heating drum communicating with the feed pipe and water heating pipe and surrounded by the latter, the said water heating drum being provided with an inverted conical bottom. 3rd. The combination, in an annular steam boiler, of the water heating drum, a water heating coil surrounding the drum both arranged in the upper portion of the boiler and hanger straps attached at both ends and suspended from the upper edge of the boiler. 4th. The combination, in a vertical cylindrical boiler, of a water heating coil communicating with the annular water leg of the boiler, and a super heating steam pipe arranged in a horizontal coil, above the water pipes, to be protected thereby and connected with the steam-space of the boiler. 5th. The combination, in a vertical cylindrical boiler provided with an annular water leg and steam chamber above, of a super heating steam pipe arranged in a horizontal coil in the upper part of the boiler, and a safety valve arranged outside of the boiler-casing with a base as a union or joint between the said super heating pipe and a steam-pipe leading to engine. 6th. The combination, with a vertical cylindrical boiler provided with an annular hot air chamber between its outer casing and the water

jacket, or leg thereof, of vertical division plates in the annular hot air chamber, to divide the said chamber in two communicating sections, and a crown plate arranged diagonally across the upper end of boiler, to cause the products of combustion to pass through the annular air chamber. 7th. In a vertical cylindrical boiler, the combination of a fire-chamber, a water heating drum and coil in the upper part of said chamber, and a super heating coil communicating with said boiler, the latter having also a double shell to form a water-leg, and an open-ended cylindrical division-plate extended from the upper to lower portion of the water leg and suspended in such manner that the water may freely circulate around it. 8th. The combination, in a vertical cylindrical boiler, of a double inner shell, an external casing having air descending and ascending flues and a conical ash pan secured to its lower end, kept apart from the lower edge of the shell by bolts in such manner as to leave a space between them for cinders to pass. 9th. The combination, in a vertical cylindrical boiler provided with a double shell to form a water leg, of a water-pipe coil connected with both shells and a hollow tube plug, closed at the outer end and open at its inner end, connected to the water pipe by an elbow joint and provided with an opening to connect the water-leg with the water coil. 10th. The combination, with a cylindrical steam boiler, of the pump feed water pipe, water coil, water leg, siphon pipe, pump supply pipe and three way cock connecting the siphon-pipe, supply-pipes and pump.

No. 16,014. Improvements in Grain Thrashing and Separating Machines. (*Perfectionnements aux machines à battre et séparer les grains.*)

Edward Huber and Frederick Strobel, Marion, Ohio, U. S., 21st December, 1882; for 5 years.

Claim.—1st. The combination, in a grain separator, of the concave of the thrashing cylinder, the pivotted arms *C*, a transverse shaft *D*, the eccentrics *B* on this shaft, the guides *F* on the frame, a ratchet wheel *G* on said shaft, and a pawl *H*. 2nd. The combination, with the grain chute *R*, of the jointed supporting links *S*, the cross bar *T* and the suspension links *U*, whereby the chute can be inclined to the right or left and given an endwise shaking motion. 3rd. The combination of the bottom *L*, the comb *A* hinged to the main frame above the extension of bottom *L*, and the riddle *T* having its tail end arranged above the jointed end of the comb. 4th. The combination, with the shoe *A*, of the supporting braces *B* pivotted at their convergent ends, and the suspension springs *C* having their flat blades in planes radiating from the pivot of said braces.

No. 16,015. Improvements on Camp Cooking Stoves. (*Perfectionnements aux poêles de cuisine de camp.*)

George M. Beecher, (Assignee of Wilmot H. Cole,) Brockville, Ont., 21st December, 1882; for 5 years.

Claim.—1st. The combination, in a portable stove, of bottomless sections hinged to fold rectangularly together and a rectangular oven section removably connected therewith when in use, and receiving the folding sections when packed for transportation. 2nd. The rectangular bottomless combustion chamber section *A* provided with draft aperture *C*, flue openings *F*, pot holes *B* and an end door *D*, the pot hole section *G* hinged thereto having flue openings *H*, the section *I* hinged to section *G* and heating the bottom of the oven and provided with flue openings *I* and the oven section *K* having flue casing *O*, the oven section being detachable, whereby the other sections can be packed therein.

No. 16,016. Improvements in the Method of Separating Sugar from Molasses and Syrups. (*Perfectionnements dans la méthode de séparer le sucre des melasses et sirops.*)

Carl Scheibler, Berlin, Prussia, 21st December, 1882; for 15 years.

Claim.—1st. The method of producing monosaccharate of strontia in molasses and syrups by introducing into same, while at a temperature below the boiling point, hydrate of strontia, by cooling the liquor and by stirring it in order to effect the formation of the saccharate of strontia at a low temperature and the separation thereof from the liquor. 2nd. In combination with the method of producing monosaccharate of strontia in molasses and syrups by introducing into the same, while at a temperature below the boiling point, hydrate of strontia, by cooling the liquor and by stirring it, the addition to the liquor of saccharate of strontia previously obtained, in order to promote the separation of the saccharate of strontia formed in the liquor. 3rd. In combination with the process of producing monosaccharate of strontia in molasses and syrups, the treatment of the mother lye resulting from such process by adding thereto an additional quantity of hydrate of strontia and boiling in order to produce caesic saccharate of strontia.

No. 16,017. Improvements on Machinery for Manufacturing Spring Horse Shoes. (*Perfectionnements aux machines pour faire les fers à cheval élastiques.*)

Frederick A. Roe, New York, N. Y., U. S., 21st December, 1882; (Extension of Patent No. 15,725.)

No. 16,018. Improvements on Machinery for Manufacturing Spring Horse Shoes. (*Perfectionnements aux machines pour faire les fers à cheval élastiques.*)

Frederick A. Roe, New York, N. Y., U. S., 22nd December, 1882; (Extension of Patent No. 15,725.)

No. 16,019. Improvements in Sewer Traps.*(Perfectionnements aux soupapes d'égouts.)*

Robert Bain, Thomas West, Robert McClain and John Ritchie, Toronto, Ont., Assignees of Horace A. Palmer, Rochester, N. Y., U.S.A. 23rd December, 1882: (Extension of Patent No. 8256.)

No. 16,020. Improvements on Overall.*(Perfectionnements aux pardessus.)*

William Carter, Toronto, Ont., 23rd December, 1882: (Reissue of Patent No. 12,171.)

Claim.—In overalls, a piece of material secured to the fork of the garment by stitching carried around each button hole, so as to form a cross seam between each hole as well as a seam near the front edge of the fly, and another seam behind each button hole.

No. 16,021. Improvements on Stop Motions for Looms.*(Perfectionnements aux mécanismes casse-mèche des métiers à tisser.)*

Frederick O. Tucker, Hartford, Conn., U. S., 23rd December, 1882: (Extension of Patent No. 15,328.)

No. 16,022. Improvements on Stop Motions for Looms.*(Perfectionnements aux mécanismes casse-mèche des métiers à tisser.)*

Frederick O. Tucker, Hartford, Conn., U. S., 26th December, 1882: (Extension of Patent No. 15,328.)

No. 16,023. Improvements on Indexes.*(Perfectionnements aux index.)*

John H. Wagstaff, St. John, N.B., 26th December, 1882: (Extension of Patent No. 14,750.)

No. 16,024. Improvements on Indexes.*(Perfectionnements aux index.)*

John H. Wagstaff, St. John, N.B., 27th December, 1882: (Extension of Patent No. 14,750.)

No. 16,025. Improvements on Foot Rests.*(Perfectionnements aux appui-pieds.)*

Frank Gourdeau, Ottawa, Ont., 27th December, 1882: for 5 years.

Claim.—1st. The combination of the part B, having the slots F, 2nd. The upper part A, provided with a notch to serve as a boot jack, 3rd. The parts B and C, pivoted together to serve as an adjustable seat.

No. 16,026. Improvements on Friction Clutches.*(Perfectionnements aux embrayages à friction.)*

Dennis Frisbie, New Haven, Conn., U. S., 27th December, 1882: for 5 years.

Claim.—1st. An annular channel of dove tailed, or reversed V-shaped section, in combination with corresponding reversed V-shaped friction pieces traversed therein, and attached to the other part, and with abutting surfaces, or pieces to allow of inducing the friction by pressing the reversed V-shaped and abutting pieces together. 2nd. The two independent lengths of shafting A B, a long hub A₁ A₂, and bushing C, in combination with each other, and with the wheels A₃ D mounted on the respective shafts, and friction piece I, and means for operating them arranged to serve as a friction clutch, with the shafts held in line at the centre. 3rd. The friction pieces I carried on one wheel and engaging frictionally with the other, in combination with the compound lever H E, toggle links F and operating sleeve G, 4th. The bolt I and adjusting nut J thereon, in combination with the friction piece I and with the compound lever H E, toggle link F and sleeve G, to allow of adjustment to accommodate the toggle action. 5th. The pinching K and threaded shoe K₁, in combination with each other, and with the lever H and its operating means.

No. 16,027. Improvements on Stiffeners for Boots and Shoes.*(Perfectionnements aux contreforts des chaussures.)*

Cléophas Rochette, St. Sauveur, Que., 27th December, 1882: for 15 years.

Claim.—1st. A stiffener for boots and shoes composed of a number of layers of leather, or other suitable material, the layers having an aggregate thickness, equal to the thickest part of the stiffener and being of different sizes, the smallest placed innermost and concentrically, and the stiffener so formed and cemented, subjected to suitable pressure for consolidation. 2nd. The method of producing stiffeners for boots and shoes by forming them of a number of different sized layers of leather, or other suitable material, the smallest being placed innermost and concentrically, and the stiffener so formed and cemented, subjected to pressure between two surfaces, of which one is comparatively hard and rigid such as iron, and the other soft and yielding, such as wood, and a sheet of cloth placed interveningly between the surface of the plates and the stiffeners to be pressed, to facilitate the removal of the latter after pressing. 3rd. The method of pressing stiffeners for boots and shoes, between a surface or plate of hard material, such as iron, and a surface or plate of yielding material such as wood, which will yield to the varying thickness of the stiffener, and distribute the pressure more equally over the same. 4th. The method of pressing stiffeners, between a yielding, and a non yielding surface, or plate, and having a sheet of cloth, or other suitable fabric, interveningly placed between the said surfaces and the stiffeners to be

pressed for the purpose of facilitating the separating of the stiffeners from the said surfaces after pressing. 5th. The combination of the plates I and W, formed with a pile, the stiffeners formed of four, or more layers L L₁ L₂, ready for pressing and placed between two pieces of cloth C, between each pair of plates I and W.

No. 16,028. Improvements on Magnetic Ore Separators.*(Perfectionnements aux séparateurs des minerais magnétiques.)*

Joseph LaBrèche-Viger, Montreal, Que., 27th December, 1882: for 15 years.

Claim.—1st. An endless apron composed of a smooth surfaced non-conducting material mounted upon upright rollers, in such a position as to prevent a surface, slightly inclined from the vertical, moving over series of magnets, or electro-magnets, disposed in one or more rows, inclined downwards in the direction of the movement of the apron, the whole mounted in a suitable frame work. 2nd. The combination of the frame work F₁ F₂ supported and held in an inclined position by the feet E₁, the non-conducting plate M secured in the frame and holding a series of magnets, or electro-magnets *m* in inclined rows clamped in it, the endless non-conducting apron A mounted upon rollers R₁ R₂, journaled in the frame, parallel to the plate and level with the poles of the magnets, the apron moving horizontally in the direction of the downward incline of the rows of magnets, and the necessary tension of the apron being obtained by a tension roller T, at the back, held in the brackets B, radially adjustable, to form a regulator of the apron, the motion being imparted to one of the rollers by means of a cord C or equivalent, the hopper H at the top of the frame, over the highest magnets, provided with feed apron *b*, receiving motion from the shaft S by means of the cord C, on the pulley P₂ from the pulley P, the hopper provided with a regulating slide *h*, pocket *h*₂ and tubes or spouts *t*, to deposit the ore on the highest magnets in each row.

No. 16,029. Improvements on Carriage Tops.*(Perfectionnements aux soufflets des voitures.)*

William Hodge, Uxbridge, Ont., 28th December, 1882: (Extension of Patent No. 14,185.)

No. 16,030. Improvements on Machines for Raising or Depressing Carriage Tops.*(Perfectionnements aux machines à abaisser ou relever les soufflets des voitures.)*

William Hodge, Uxbridge, Ont., 28th December, 1882: (Extension of Patent No. 14,870.)

No. 16,031. Improvements on Lamps.*(Perfectionnements aux lampes.)*

Frederick Siemens, Dresden, Germany, 28th December, 1882: (Extension of Patent No. 12,348.)

No. 16,032. Improvements on Lamps.*(Perfectionnements aux lampes.)*

Frederick Siemens, Dresden, Germany, 28th December, 1882: (Extension of Patent No. 12,348.)

No. 16,033. Improvements in Car-Couplers.*(Perfectionnements aux accouplages des chars.)*

Charlie B. Mark, Flint, Mich., U.S., 28th December, 1882: (Extension of Patent No. 15,391.)

No. 16,034. Improvements on Car-Couplers.*(Perfectionnements aux accouplages des chars.)*

Charlie B. Mark, Flint, Mich., U.S., 28th December, 1882: (Extension of Patent No. 15,391.)

No. 16,035. Improvements in Contrivances for Varying the Gauge of the Wheels of Rolling Stock.*(Perfectionnements aux moyens de changer l'écartement des roues de matériel roulant.)*

David Anderson, Fairview, Stowell, Victoria, 28th December, 1882: for 15 years.

Claim.—1st. Constructing axles of railway rolling stock with an extensible sleeve or sleeves, to admit of the alteration of the gauge of their wheels. 2nd. Constructing such axles with a solid collar in the centre, and with a hinged clamp on either side, having recesses for receiving and holding the flanges on the inner ends of the axle sleeves. 3rd. The combination of the sole plate E₁ the rollers E₂, platforms E and F₁ having recesses F₂ and F₃ (or their equivalent in the shape of rails) with a right and left handed screw G, turning collar G₂ and thrust bearing G₃.

No. 16,036. Improvements on Carriages.*(Perfectionnements aux voitures.)*

Francis X. Roy, Montreal, Que., 30th December, 1882: for 5 years.

Claim.—1st. The combination, in a carriage having the king bolt *o*, of the compound brace Q, having an aperture through which the king bolt *o* moves. 2nd. The combination, in a carriage top, of the standard A having slides X, joint F, standard B, brace J having sliding joint G, with screw K and swivels E and H.

No. 16,037. Improvements on Globe Valves.
(*Perfectionnements aux soupapes à boule.*)

Peter G. Van Wie, Cleveland, Ohio, U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination of the straight parallel sided valve C having the annular flange or projection N and the conical point, with the straight parallel sided valve seat F bevelled to receive the flange N. 2nd. The combination of a straight parallel sided valve C having annular flange N, and the conical point with the recessed cap H. 3rd. The combination of a removable valve seat F bevelled to receive the flange N, with the body A having partition B, and valve C having flange N.

No. 16,038. Improvements on Wire Covering Machines.
(*Perfectionnements aux machines à couvrir le fil de fer.*)

James M. Rice and Merritt H. Rice, Dubuque, Iowa, U. S., 30th December, 1882; for 5 years.

Claim.—1st. The guide B provided with the groove *c*, and passage *d* leading into said groove. 2nd. The guide B provided with the groove *c*, and passage *d* leading into the said groove, and the tension device. 3rd. The guide provided with the screw-threaded portion B, in combination with the shaft C provided with screw-threaded device H, and means for operating the shaft C. 4th. The guide proper B, provided with the groove *c*, and a passage *d* leading into said groove, and with a passage *a* to admit the shaft C, in combination with the shaft C and shafts or arbors D D', and means for operating the arbors. 5th. The combination of the travelling guide B, the shaft C with screw H, belt slipper lever I, the revolving arbors D D', and means for operating the arbors. 6th. The guide B having a screw-threaded passage *a a* in its portion B, and provided with a groove *c*, a passage *d* and a tension device H, in combination with the shaft C, male screw H and the shaft or arbors D D'. 7th. The guide proper B, provided with the grooves *c* and passage *d*, and with a passage *a* and an opening *b*.

No. 16,039. Improvements on Saw Frames.
(*Perfectionnements aux montures des scies.*)

Charles H. Bennett, Bloomsburgh, Penn., U. S., 30th December, 1882; for 5 years.

Claim.—1st. In combination with the saw and frame, the externally inclined clamps *a h*, of which one has an inside stud *i* passing through the other clamp and through the saw, and the triangular yokes on the inner ends of adjustable screws. 2nd. The bow A, of gas pipe and the saw blade B, in combination with means for holding the ends of the saw blade in the bow.

No. 16,040. Improvements on Feed Water Alarms for Steam Boilers.
(*Perfectionnements aux indicateurs du niveau de l'eau des chaudières à vapeur.*)

George W. Getchell, Brewer, Me., U. S., 30th December, 1882; for 5 years.

Claim.—1st. In combination with a steam boiler, a float *d*, chain *e*, arm *f*, upon shaft *g*, and latch or crank *h*, together with an alarm apparatus adapted and arranged to operate by the motion of the crank *h*, as the water rises or falls. 2nd. The combination, with a steam boiler, of a float *d*, revolving shaft *g*, and connecting mechanism, whereby the rise and fall of the said float operates to release one or the other of the said shafts, as the water is high or low, and sound the alarm. 3rd. In combination with a steam boiler, the connected cylinder *c*, weighted float *d* attached to the arm *f*, the shaft *g* and latch *h*, arranged to engage levers *i* upon revolving shafts *j*, *k*, and to release one or the other, as the water level in the boiler varies, allowing them to revolve and operate an alarm signal.

No. 16,041. Improvements in Metal Lasts.
(*Perfectionnements aux formes métalliques.*)

James Markie, London, Eng., 30th December, 1882; for 5 years.

Claim.—Metal lasts described and represented in the drawing.

No. 16,042. Improvements on Permanent Ways of Railways.
(*Perfectionnements aux voies permanentes des chemins de fer.*)

William Seaton, London, Eng., 30th December, 1882; for 5 years.

Claim.—The form of the solid bridge rail, or saddle rail, with notched ends for the reception of metal key, or keys, in combination, with (for the purpose of steadying, securing and fastening the rails) horizontal longitudinal plates or fastenings with curved ends, and flange-headed bolts secured or counter sunk into the bottom of the sleepers, into which a twin nut-headed screw bolt enters, after first passing through the longitudinal plates, or fastenings, the rails and the sleepers, by which means all the parts can be screwed tightly together, and the rails so jointed together obtain the solidity of a continuous rail.

No. 16,043. Improvements on Car Couplings.
(*Perfectionnements aux accouplages de chars.*)

George W. Eltzroth and Isaac Raypholtz, Marion, Ind., U. S., 13th December, 1882; for 5 years.

Claim.—1st. The combination of the draw-head having perforation D, longitudinal slot F in its top, and intermediate groove G, the upright standard having bearing N at its top, and an elevated front extension at its bottom, provided with bearing R, the right angular flat spring arranged in rear of the link recess and having circularly notched end L, and the coupling pin having an front mid-way flange or shoulder S. 2nd. The rest or bracket T, having end V, central cross-bar X, provided with flattened portions B', an end Z formed by a circular coil.

No. 16,044. Improvements on Anti-Cribbing Attachments for Horses.
(*Perfectionnements aux moyens d'empêcher les chevaux de ronger.*)

Owen P. Deeds, Cunven, Penn., U. S., 30th December, 1882; for 5 years.

Claim.—1st. A curved plate having means for attaching it to the teeth of the horse. 2nd. A longitudinal curved plate adapted to rest against the upper front teeth of an animal, and provided with end perforations, for receiving fastening devices to attach the plate to the teeth.

No. 16,045. Process and Apparatus for Improving the Fire Test of Oils.
(*Procédé et appareil pour améliorer l'épreuve du feu des huiles.*)

Henry C. Smith, Cleveland, Ohio, U. S., 30th December, 1882; for 5 years.

Claim.—1st. Passing the oil in a thin layer over a body of heated water, and simultaneously passing a current of air over the layer of oil, whereby the lighter gases and vapours are eliminated from the oil. 2nd. The combination and arrangement of a closed tank A, a coil of steam pipes *a a a*, a coil of air pipes *b* in said tank, partitions *c c* and false perforated bottom *d*, the said tank being provided with an inlet *e*, a vapour outlet *f*, the air pipe connecting with the interior of the tank above the outlet *a*.

No. 16,046. Improvements on Bed Bottoms.
(*Perfectionnements aux sommiers des lits.*)

Wheeler Bartram, Madison, Ohio, U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination of a series of metallic spring straps provided with slots for adjusting the same to the frame or bedstead, with a series of spiral springs attached to the flexible metallic supports running crosswise of the same. 2nd. The combination, with spiral springs extending from end to end of the frame, of the transverse flexible metallic support *a* and slotted metallic spring straps *d*, adjustably attached to the frame by means of pins *c*.

No. 16,047. Improvement on Railway Brakes.
(*Perfectionnement des freins de chemins de fer.*)

Nathan Webb, Sacramento, Cal., U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination of the spring C and the fulcrum *b*, and the brake beam A. 2nd. The combination, with the spring C and the chain rod J, of the stop *g* and the retaining pin *f*.

No. 16,048. Improvements on Rotary Gang Ploughs.
(*Perfectionnements aux charrues rotatoires à plusieurs socs.*)

Isaac N. Kyle, Troy, Ohio, U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination, with a diagonal series of concavo-convex disks, having continuous cutting edges, of a front series of flat cutting disks arranged to operate in the line of draft, but equidistant between the cutting points of the concavo-convex disks, whereby the earth is first cut, and then subdivided and turned over. 2nd. The combination, with a diagonal series of concavo-convex disks, having continuous cutting edges, of a front diagonal series of flat cutting disks, arranged to operate in the line of draft, but equidistant between the cutting points of the rear concavo-convex disks.

No. 16,049. Improvements on Reaping Machines.
(*Perfectionnements aux moissonneuses.*)

Thomas I. Williams, Mariposa, Ont., 30th December, 1882; for 5 years.

Claim.—The combination of the stock A and finger B.

No. 16,050. Improvements on Cleaning Ash Pans of Locomotive Engines.
(*Perfectionnements dans le nettoyage des cendriers des machines locomotives.*)

Alden D. Kilborn and William F. Smith, Tucson, Arizona, U. S., 30th December, 1882; for 5 years.

Claim.—A distributor for cleaning locomotive ash pans with water, consisting of the hollow cross bar C provided with a front row of straight ejecting pipes, or nozzles D, made of unequal length, to throw the water in a series of streams which strikes the bottom, one in advance of another, whereby the cinders are more uniformly acted upon, and the pan more thoroughly cleaned.

No. 16,051. Improvements on Electric Air Lamps.
(*Perfectionnements aux lampes électriques atmosphériques.*)

Elihu Thomson, New Britain, Conn., U. S., 30th December, 1882; for 5 years.

Claim.—1st. The combination, in an electric lamp, of an upper carbon rod, a wheel rotated by a downward motion of said rod, a frame supporting said wheel and movable in position with it, an electro-magnet in the main or principal circuit acting upon said frame to separate carbons, a wheel or wheels, the shaft of which is stationary, an electric magnet in a derived circuit around the carbons and a locking detent controlled by said magnet and acting to prevent the rotation of the stationary wheel or wheels. 2nd. The combination, with

the feeding train of an electric light regulator, of a detent device engaging with the periphery of the wheel of the train, and an electro-magnet controlling said detent, the circuit of which is through the periphery of the wheel and the detent. 3rd. In an electric light regulator, a derived circuit electro-magnet, a detent controlled thereby, and a releasing wheel which is in the derived circuit with the electro-magnet and with whose periphery the detent engages. 4th. In an electric light regulator, the combination, with the lighting mechanism acting upon the carbon carrier and the locking device, of the feeding train of intermediate devices acting upon said locking device, to release the train when the lifting mechanism is lowered. 5th. The combination, with the swinging frame carrying the feeding gear and serving to separate the carbons to form the arc of a projecting part acting upon the detent of said feeding gear. 6th. The projection F¹ of the frame F, in combination with the detent device, whereby the electrodes are allowed to run together by the release of a detent when the current through the lamp ceases from any cause. 7th. In combination with a shunt circuit around the lifting electro-magnet, circuit closing devices adapted to be brought into action by the descent of the carbon carrier when the carbons are consumed. 8th. The combination, with the descending carbon rod R of contact points D and B, one of which is carried by the rod and which are adapted to form a cut out of the direct magnet coil C whereby, when the carbon points are nearly consumed, they drop together and remain in contact.

No. 16,052. Improvements on Machines for Raising or Depressing Buggy Tops. (*Perfectionnements aux machines à lever ou abaisser les soufflets des voitures.*)

William Hodge, Uxbridge, Ont., 30th December, 1882; (Extension of Patent No. 14,870.)

No. 16,053. Improvements on Snow Ploughs. (*Perfectionnements aux charrues à neige.*)

Horace Resley, Cumberland, Md., U.S., 30th December, 1882; for 5 years.

Claim.—1st. The combination, with the deflection D, of the scoop A having its sides CC connected to the forward part of its wings *aa* by the braces *ce* arranged on opposite sides of the deflector. 2nd. The combination of the scoop A, the truck B having the rounded bar *az* upon its bumper, and which serves as a rest for the scoop, the slotted braces *gg* secured to the under side of the bumper, the rollers *ff* and their axle arranged under the forward end of the scoop. 3rd. The combination of the truck B having bar *a²*, the scoop A adapted to rock thereon, the cords *d d*, the windlass E having pin *e*, and the loop *d¹* placed upon one of the cords and adapted to be engaged with the said pin.



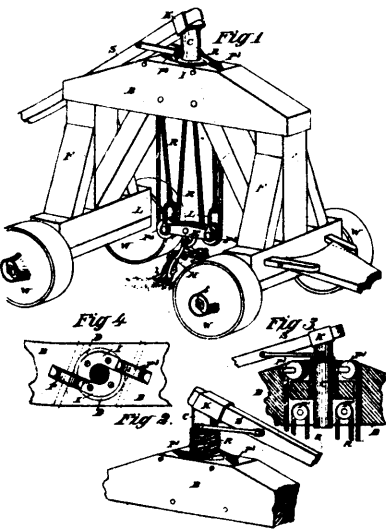
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

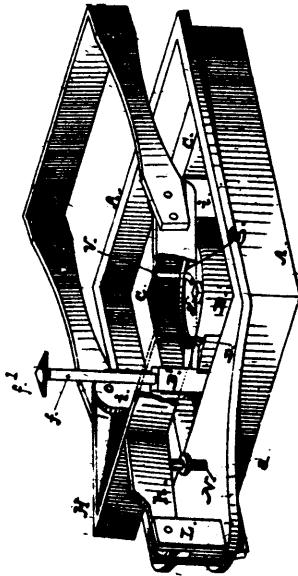
Vol. XI.

JANUARY, 1883.

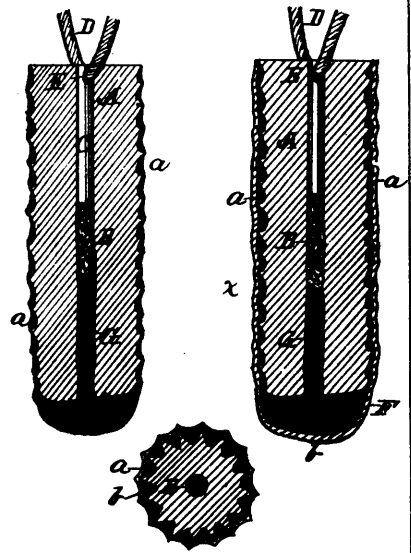
No. 1.



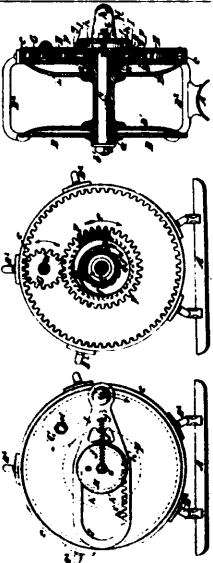
15871 Gaty's Improvements on Stump Extractors.



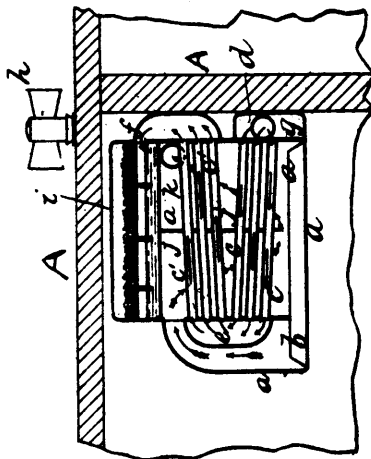
15872 Williams' Improvement in Apparatus for Soldering Cans.



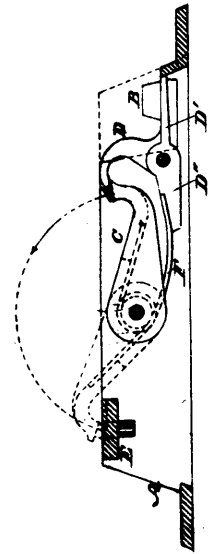
15873 Davis' Improvements in Fire Kindlers.



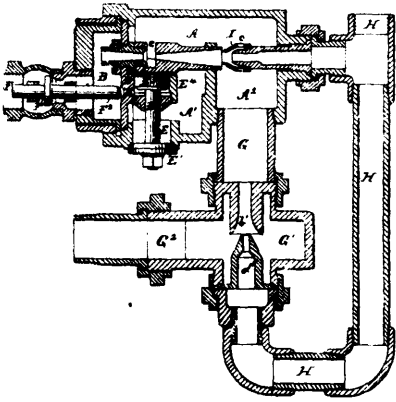
15874 Mills' Improvements on Fishing Reels.



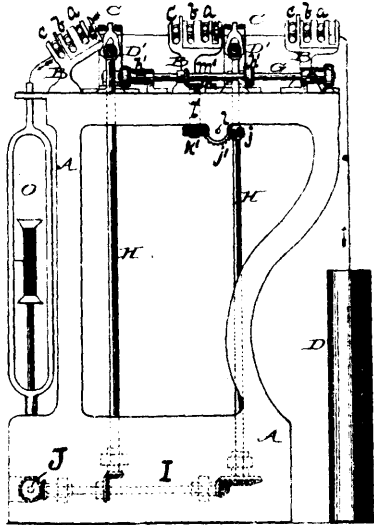
15876 Rowan's Improvements in Warming and Ventilating and Apparatus therefor.



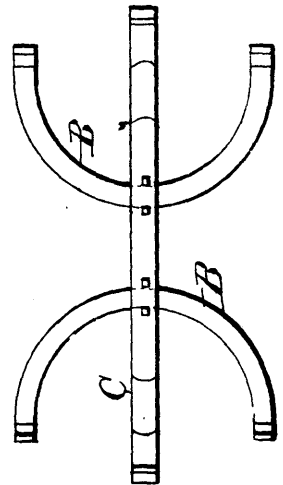
15877 Brooke's Improvements on Door, Shutter or Sash Fasteners and Alarms.



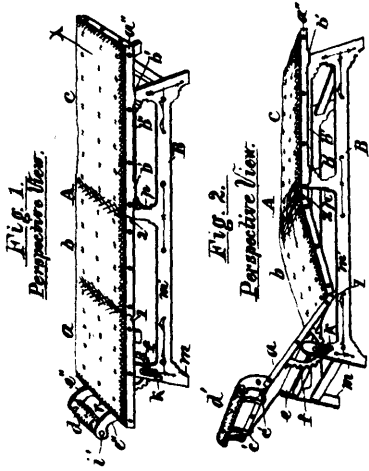
15878 Williams' Improvements on Steam Injectors.



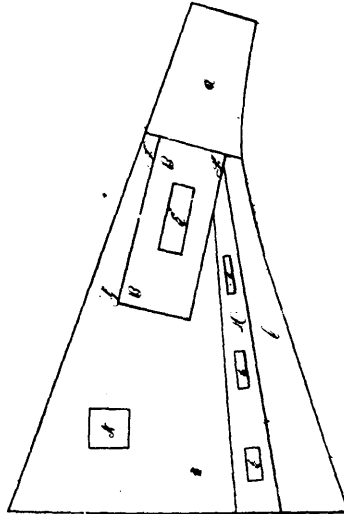
15879 Kelley's Improvements on Machines for the Manufacture of Roving.



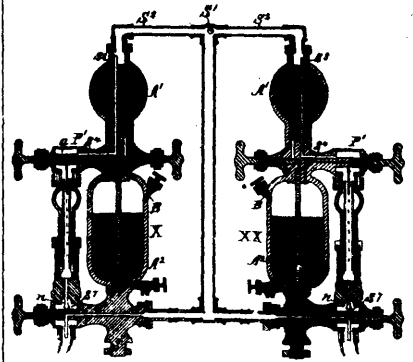
15880 Saladee's Improvements on Vehicle Springs.



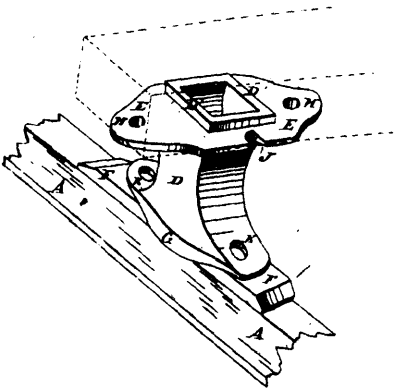
15881 McDonald's Improvements in Invalid Lounges.



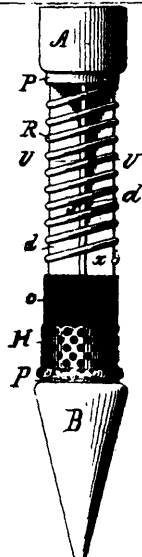
15882 Clinton's Improvement in Plough Shares.



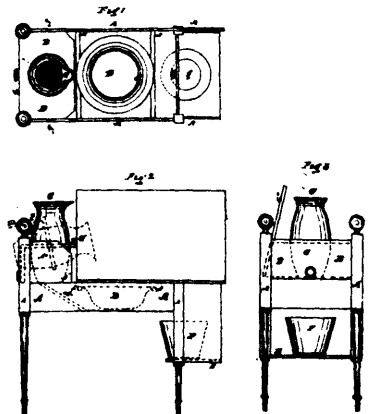
15883 Holland's Improvements in Lubricating Devices.



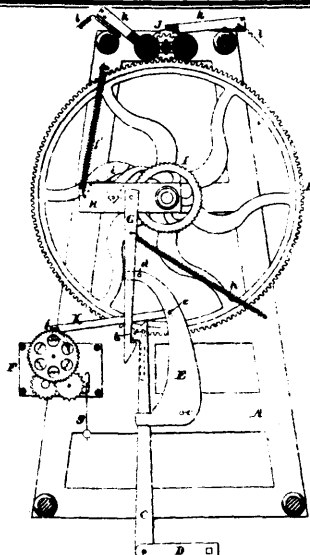
15884 Brown's Improvement on Sleigh Knees.



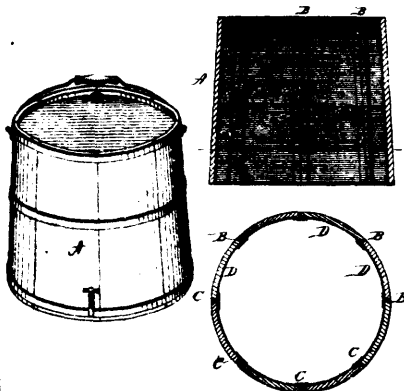
15885 Olmsted's Improvements on Drive Well Points and Strainers.



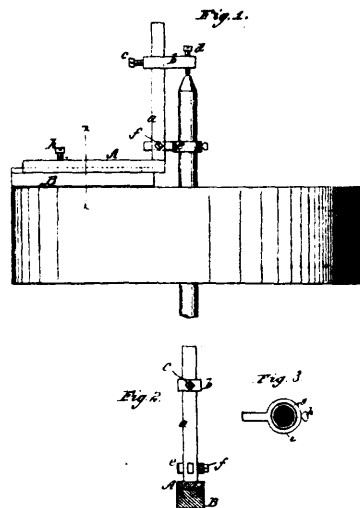
15886 Farewell's Improvements on Wash Stands.



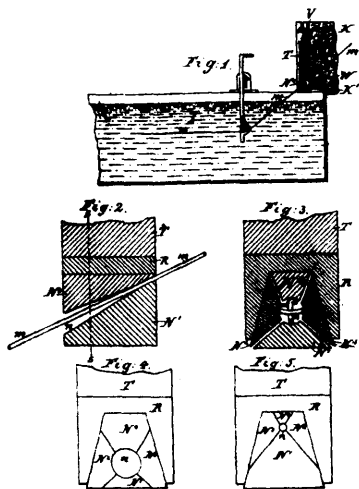
15900 Johnson's Improvements on Magneto-Electric Railway Signals.



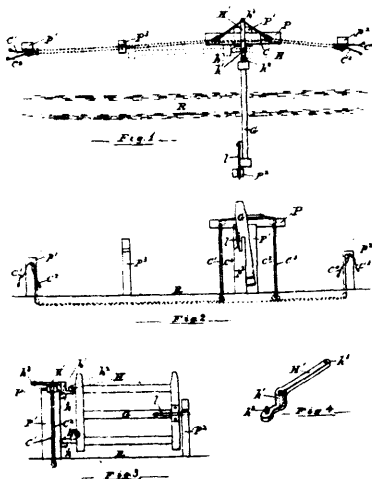
15901 Wright's Improvements on Impervious Packages.



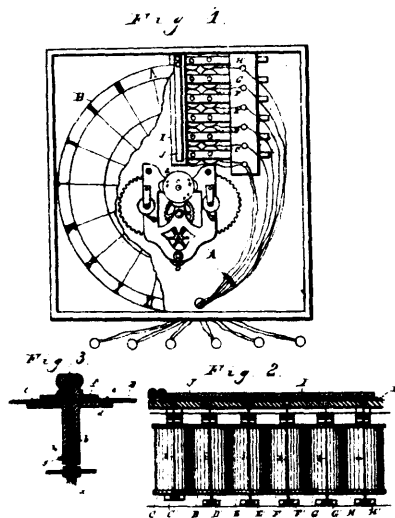
15902 Davis' Improvements in Guides for Paint Staffs.



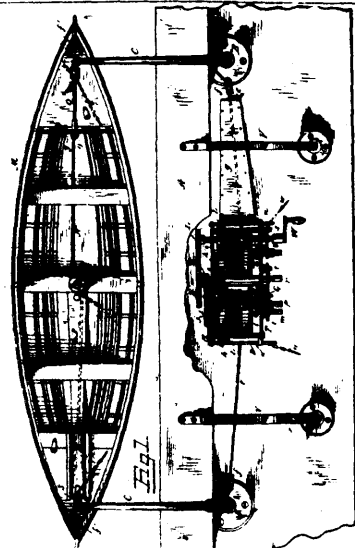
15903 Roberts' Improvements in Means of Finishing Zinc Coated Wire.



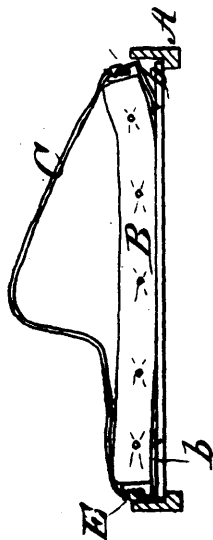
15904 Chambers' Improvements on Gate Attachments.



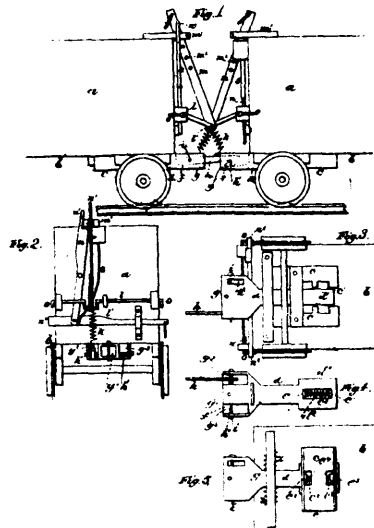
15905 Ransom's Improvements on Electro-Magnetic Watchmen's Registers.



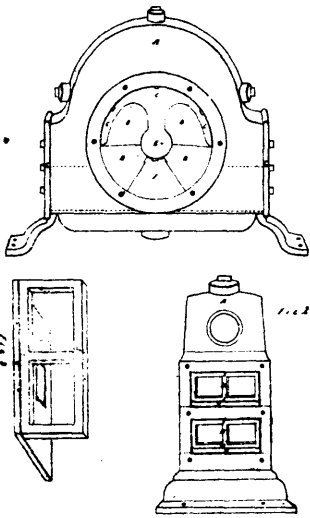
15906 Bourke's Improvements on Boat Lowering Apparatus.



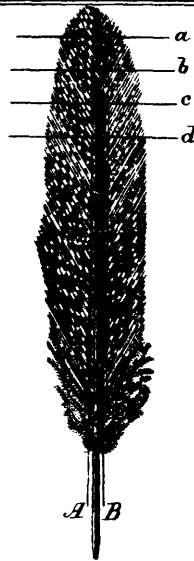
15907 Cox's Improvements on Bed Clothes Fasteners.



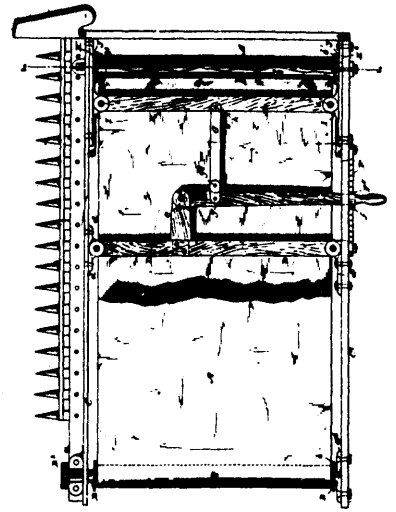
15908 Clark's Improvements on Car-Couplers.



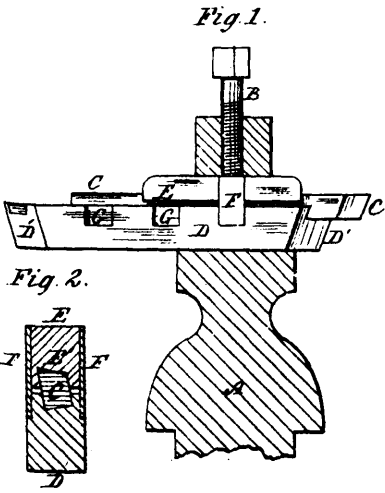
15909 Holman's Improvements in Force Pumps.



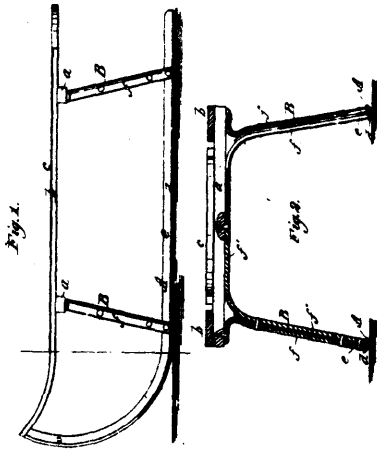
15910 Berger's Process for Manufacturing Feather Pillows, Bolsters, &c.



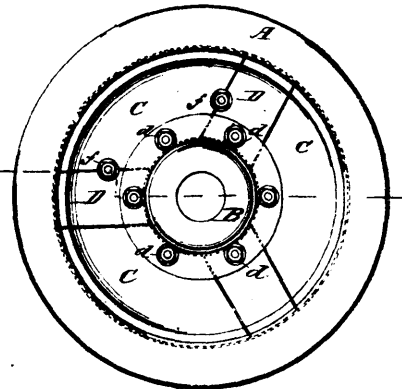
15912 Davis' Improvements on Grain Carriers.



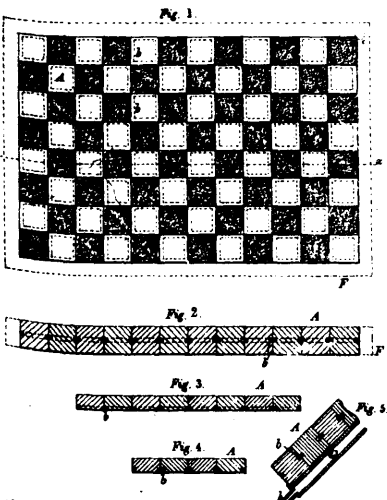
15913 Woodbridge's Improvements on Metal Working Tools.



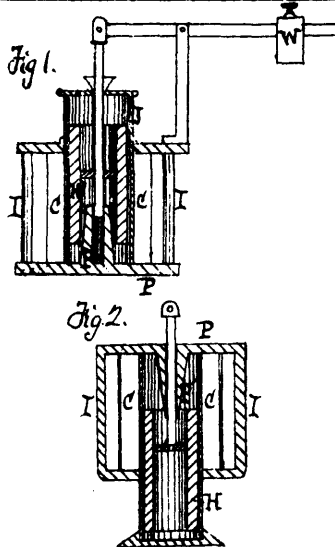
15914 Amsden's Improvements on Sleds and Sleighs.



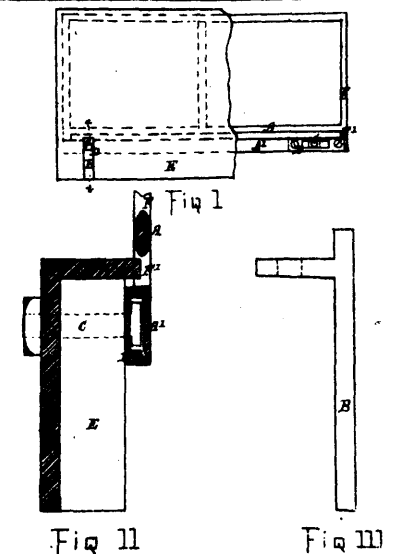
15915 Canfield's Improvements on Car Wheels.



15916 Rider's Method of Uniting Wood for Floor Coverings.



15917 Thomson's Improvements on Electro-Magnetic Devices.



15918 McKinnon's Improvements in Vehicle Daabes.

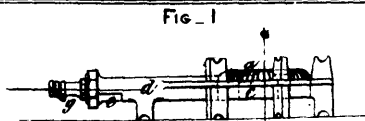


Fig. 1

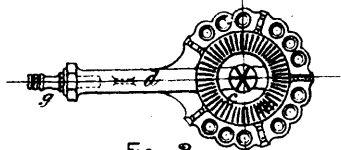


FIG. 2

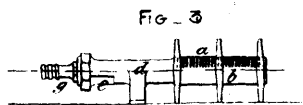


FIG. 3

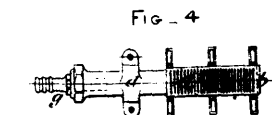
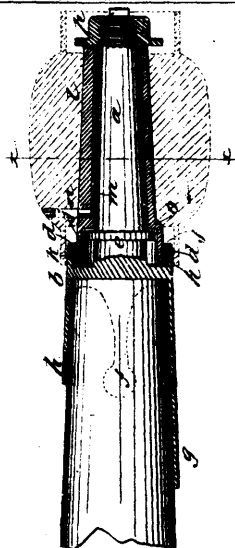
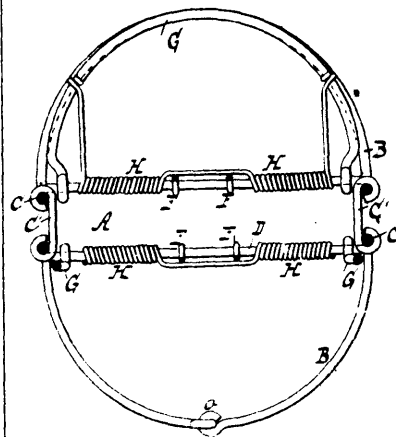


FIG. 4

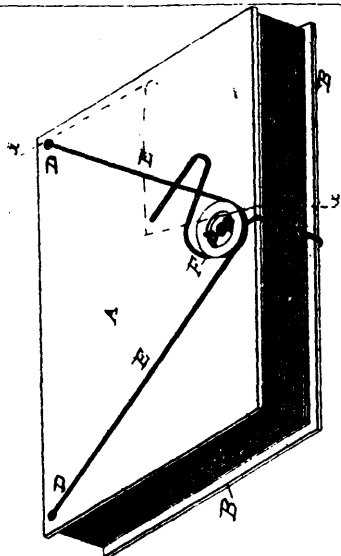
15819 Fletcher's Improvements on Gas Burners for Heating Purposes.



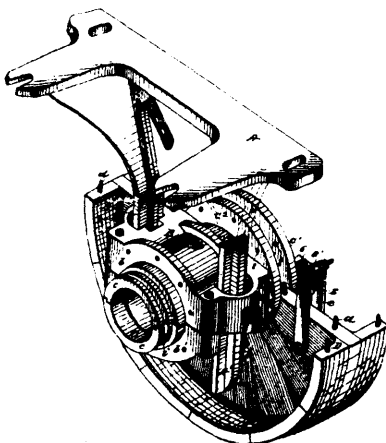
15820 Smith's Improvements on Thimble Skeins and Axle Boxes.



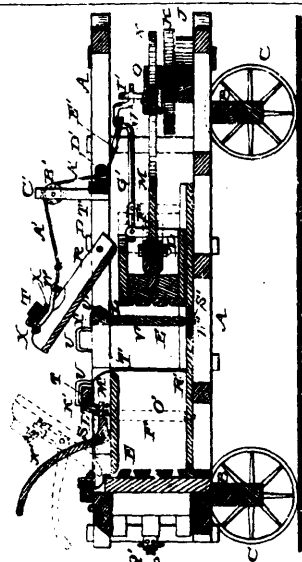
15921 Greig's Improvements on Animal Traps.



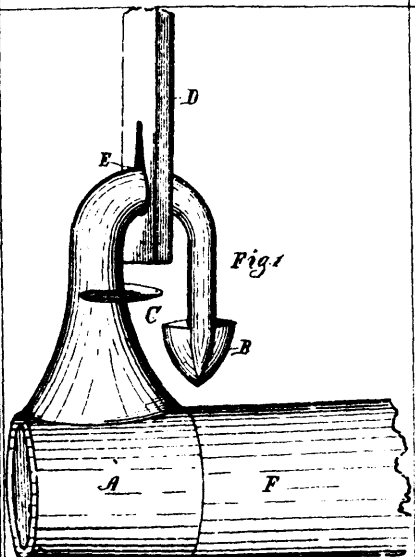
15922 Colton's Improvements on Scrap Books.



15923 Crowell's Improvements on Dead Pulley Rigs.



15924 Kappe's Improvements on Hay Presses.



15925 Higinbotham's Improvements in Whiffetree Hooks.

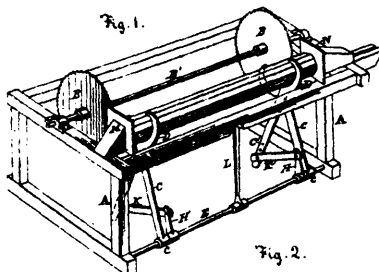


Fig. 1.

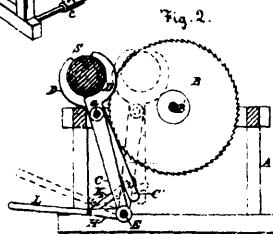
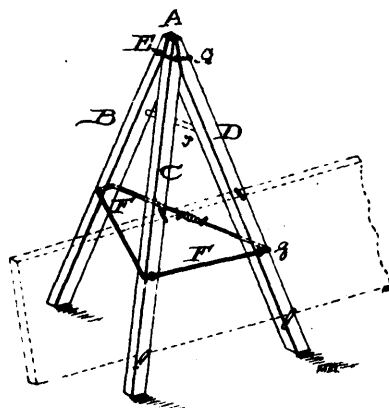
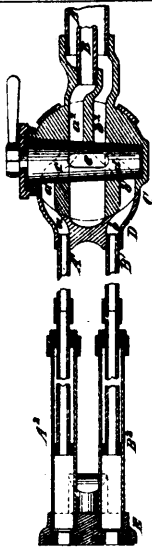


Fig. 2.

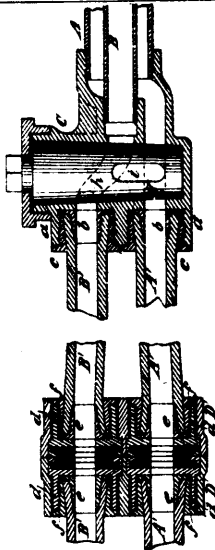
15926 Nichols & Taylor's Improvements on Lath Trimming Machines.



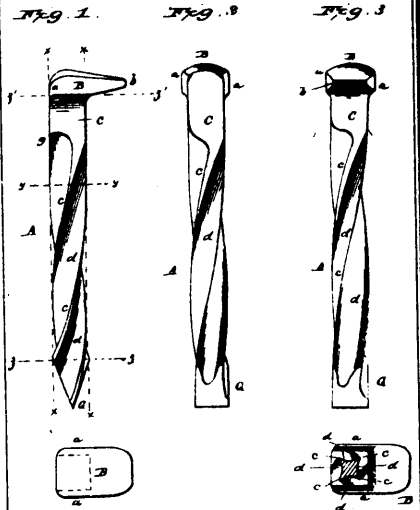
15927 Gibbs' Improvements on Movable Fence Posts.



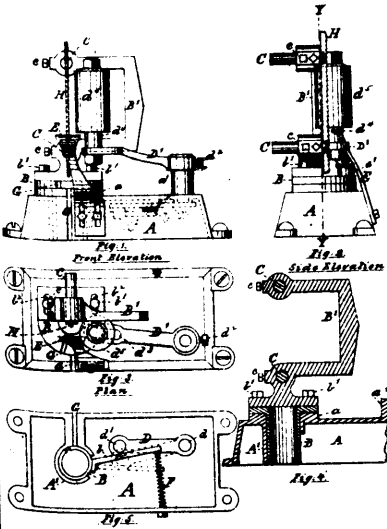
15928 Walsh's Improvements on Means for Conveying Heating or Motive Agents through a Train of Cars.



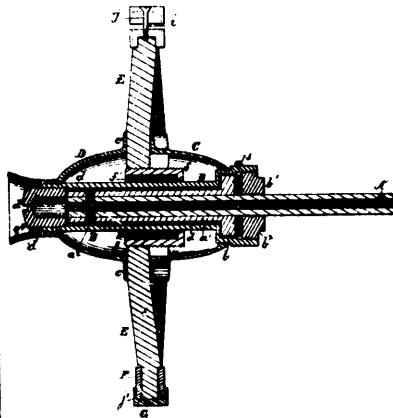
15929 Walsh's Improvements in Apparatus for Heating Cars.



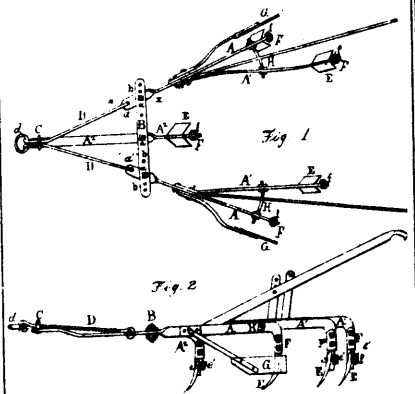
15930 Bailey's Improvements on Spikes.



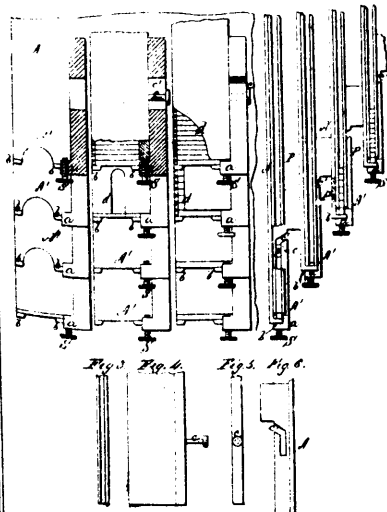
15931 Chandler's Improvements in Saw Guides



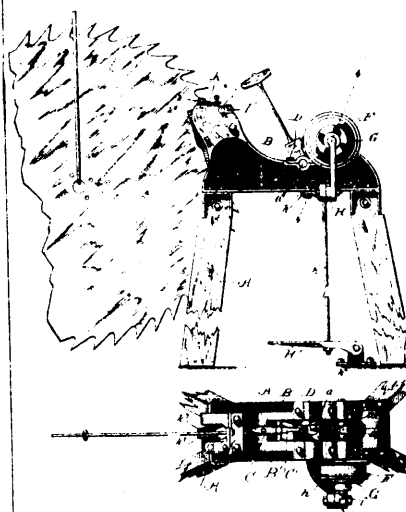
15932 Shelley's Improvement on Vehicle Wheels and Axles.



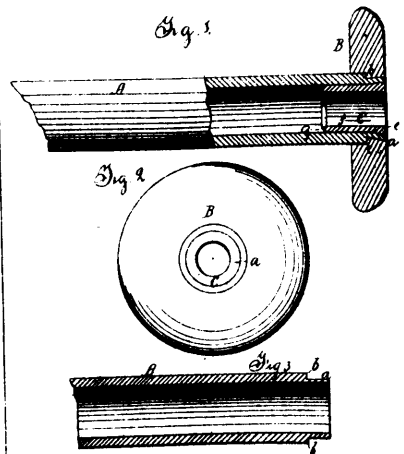
15933 Deal's Improvements on Cultivators.



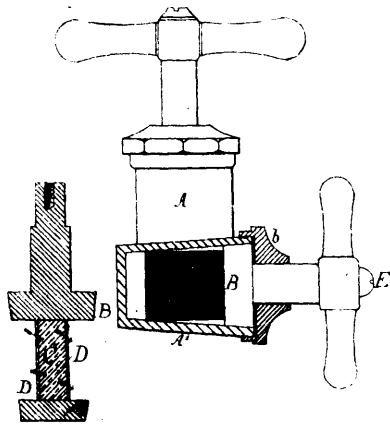
15934 Johnson's Improvements on Type and Space Holders.



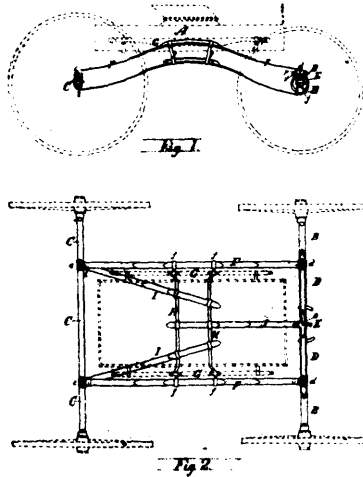
15935 Covell's Improvements in Saw Swages.



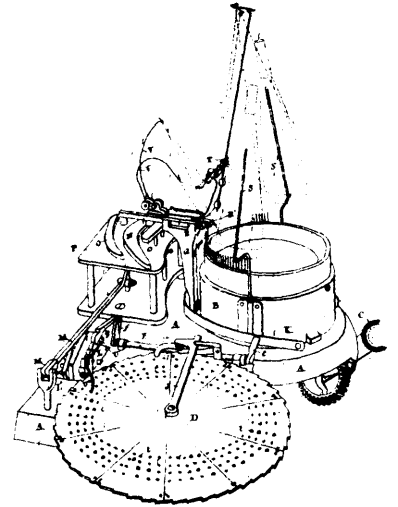
15937 Hambleton's Improvements in Bobbins.



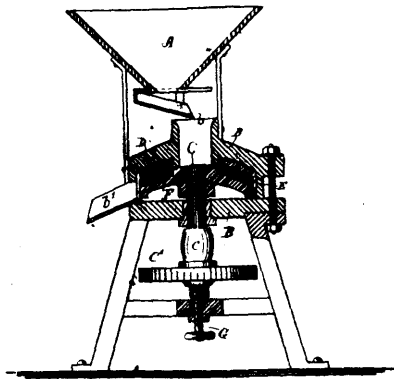
15941 Horsnell & Murphy's Improvements in Filtering Apparatus.



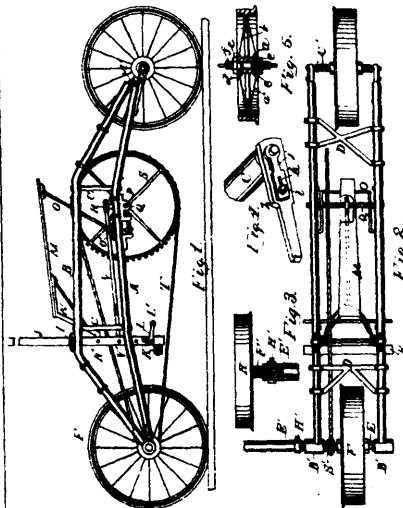
15948 Wright's Improvements on Side Spring Waggon.



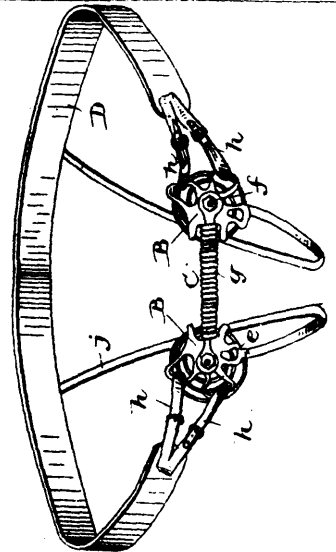
15949 Byfield's Improvements in Knitting Machines.



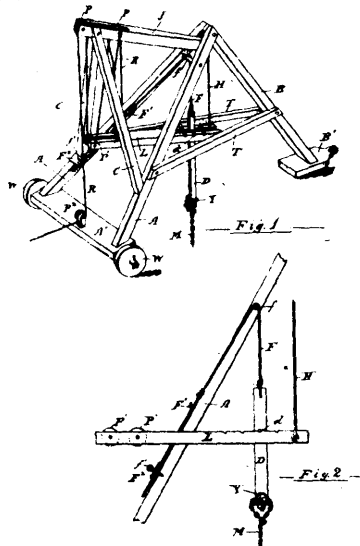
15950 Pratt's Improvements in Grinding Mills.



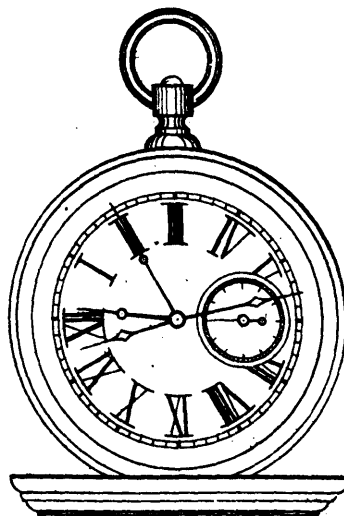
15953 Walz's Improvements in Hand Cars.



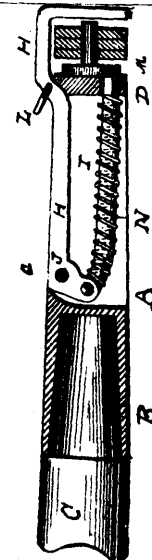
15964 Clueth's Improvements on Trusses.



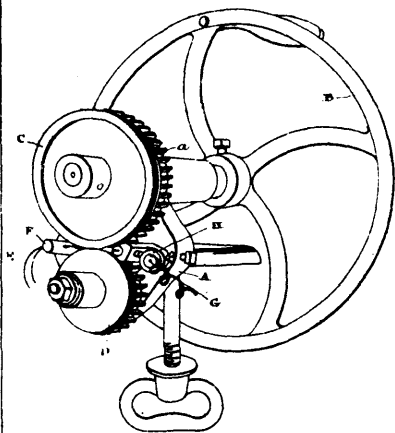
15955 Bruce's Improvements on Stump Extractors.



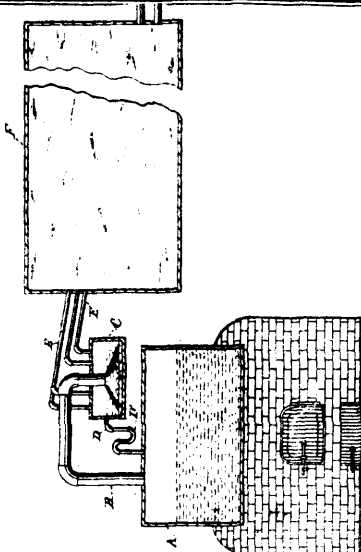
15956 Bell's Improvements on Watch Hands.



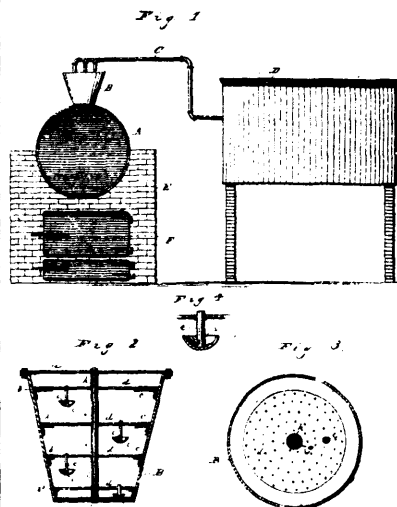
15957 Cummins' Improvements on Trace Detaching Devices.



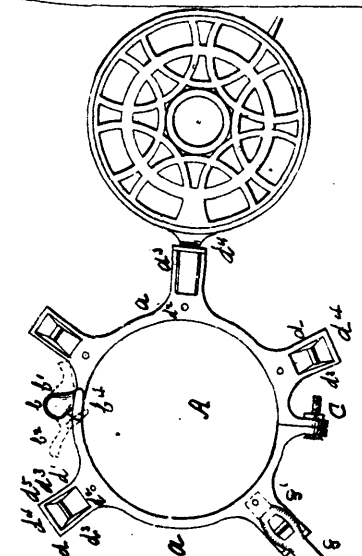
15958 Tye's Improvements on Wire Colling Machines.



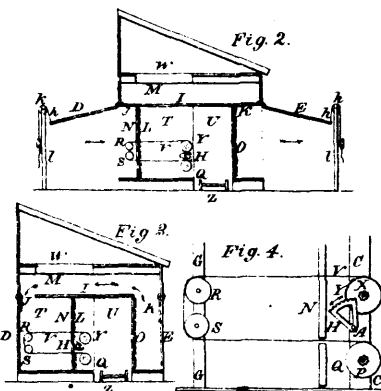
15959 Frasch's Process for the Distillation of Hydro-Carbon.



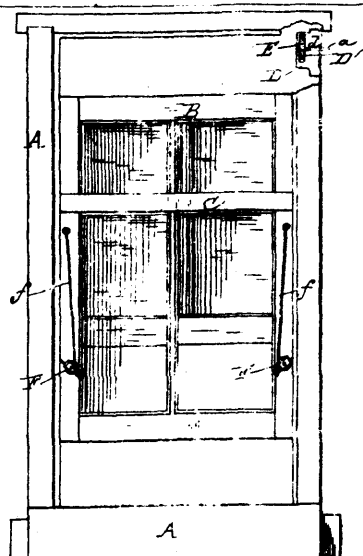
15960 Frasch's Improvements on Petroleum Stills.



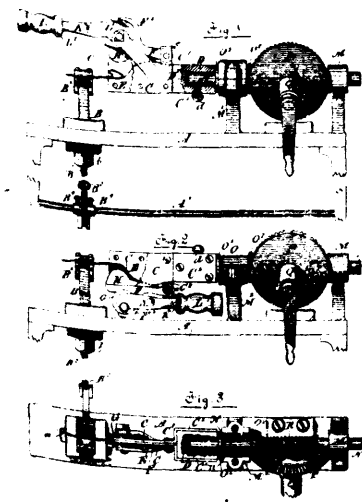
15961 Kurtis & Bray's Improvements in Stove Pipe Shelves.



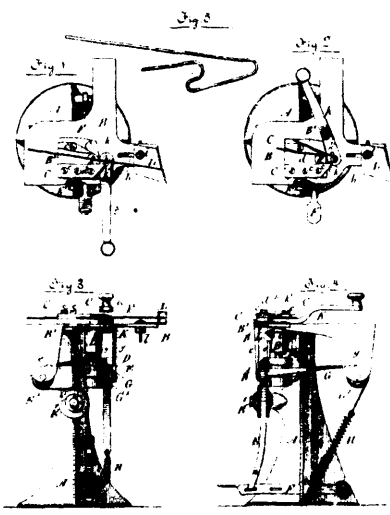
15962 Nichols & Thomson's Improvement in Fish Drying Houses and Apparatus.



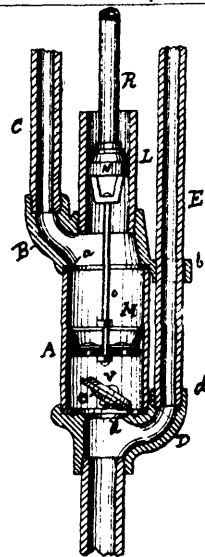
15963 Scheelky's Improvements on Sash Balances and Locks.



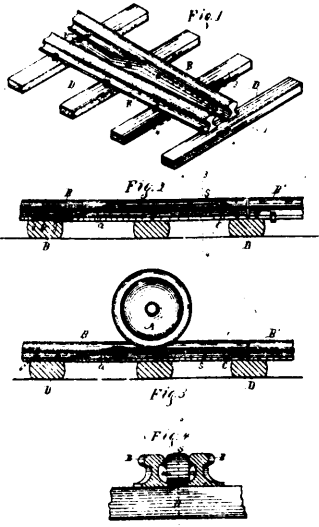
15964 Lenox's Improvements in Machines for Forming the Blanks of Wire Bale Ties.



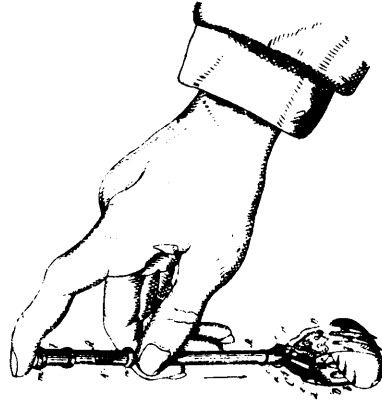
15965 Lenox's Improvements in Machines for Forming the Blank Hooks of Wire Bale Ties.



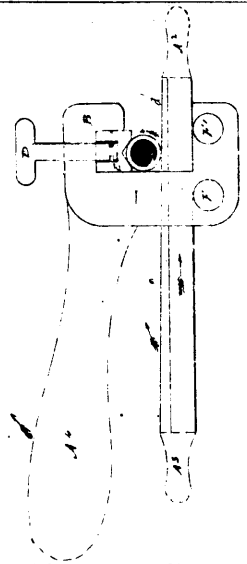
15967 Branson's Improvements on Double-Acting Pumps.



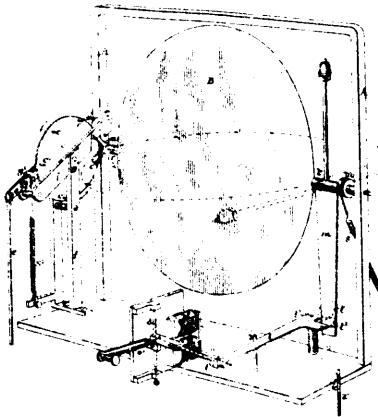
15968 Schan & Stronger's Railway Frog Protector.



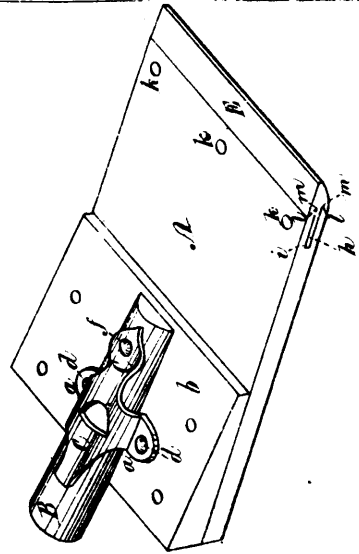
15969 Turner's Improvements on Culinary Forks.



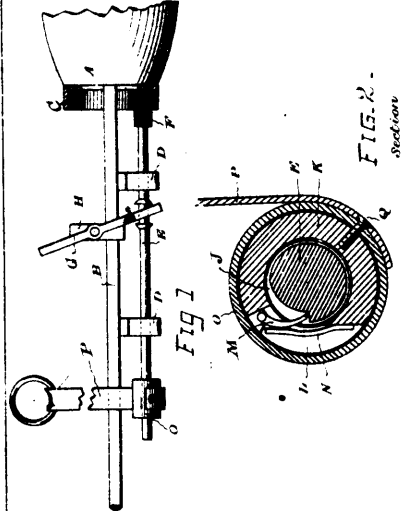
15972 Kinney's Improvements on Pipe and Nut Wrenches and Pipe Cutters.



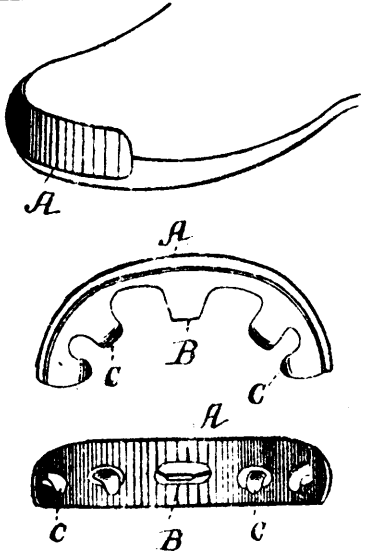
15973 Johnson's Improvements on Magneto-Electric Railway Signals.



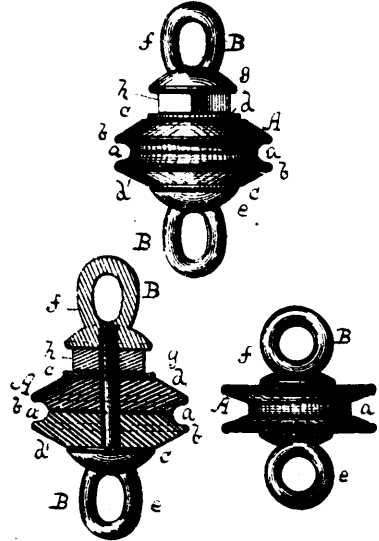
15974 Way's Improvements on Snow Shovels.



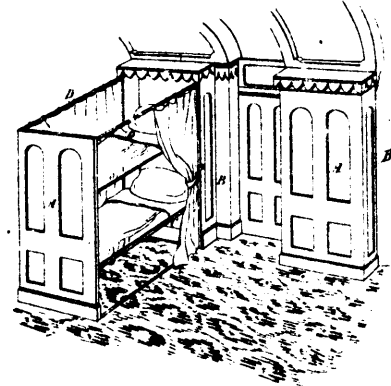
15975 Kirkland's Improvements on Vehicle Devices for Checking Horses.



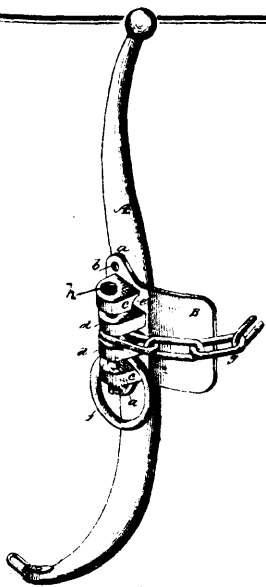
15976 Whittier's Improvements on Sole and Upper Protectors.



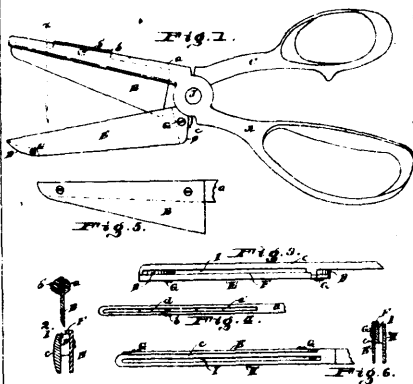
15977 Grant's Improvements on Rubber Buckets for Chain Pumps.



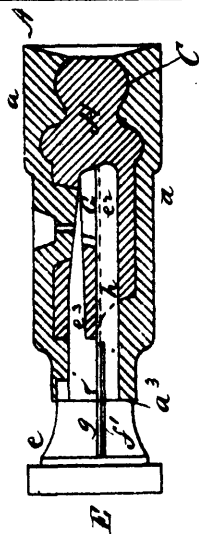
15978 Leve's Improvements in Berths for Steamers.



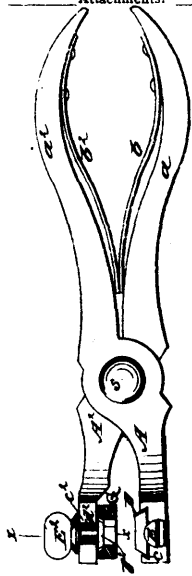
15979 Fangle & Hollaway's Improvements on Hame Attachments.



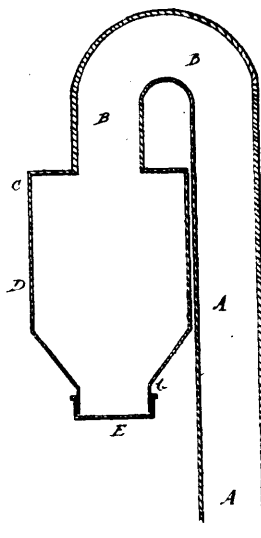
15980 Lytle's Improvements on Shears.



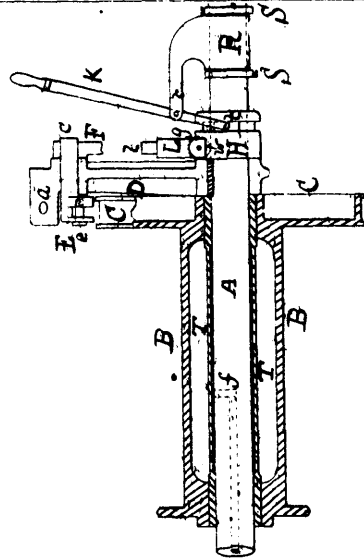
15981 Mills' Improvements on Candy Whistles and Moulds therefor.



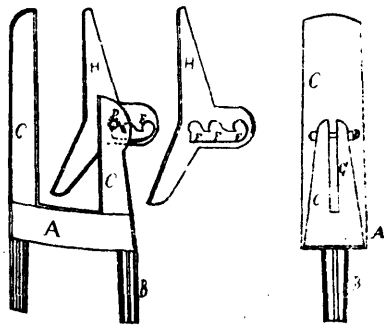
15982 Tignière's Improvements on Punches for Marking Cattle.



15983 Leslie's Improvements on Spark Arresters and Extinguishers.



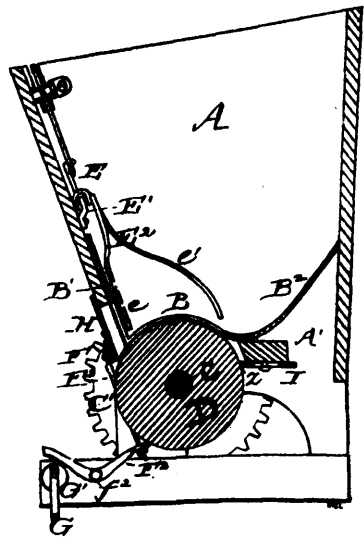
15984 Osgood's Improvements on Friction Clutches.



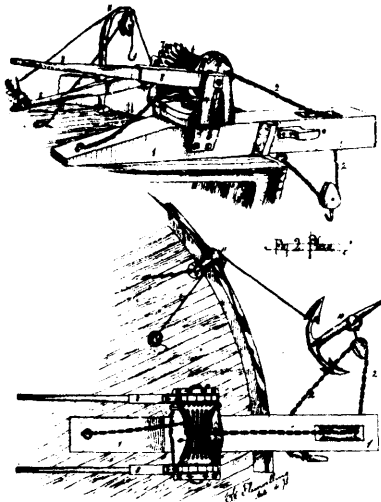
15985 Crispin's Improvements on Saw Clamps and Bench Irons.



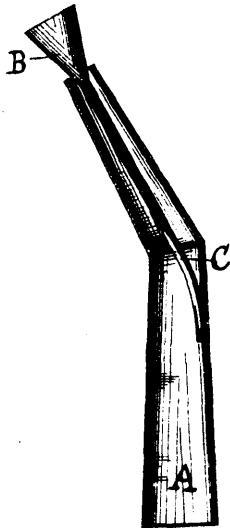
15986 Lowne's Improvements on Electric Locks.



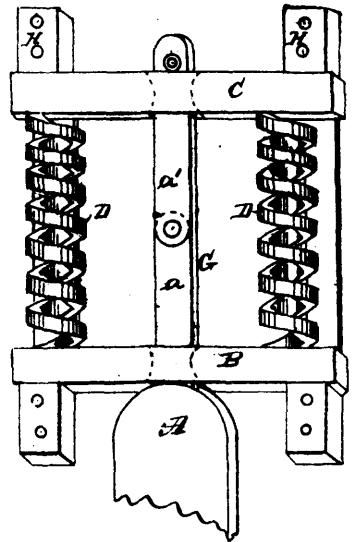
15987 Baker's Improvements on Fertilizer Distributors for Grain Drills.



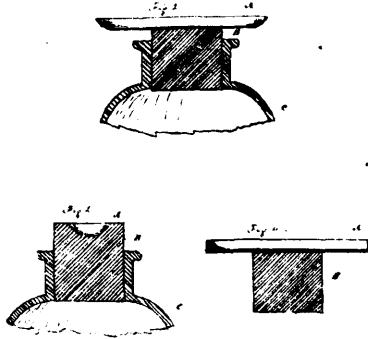
15988 Purdy's improvements on Machines for Cutting and Fishing Ships' Anchors.



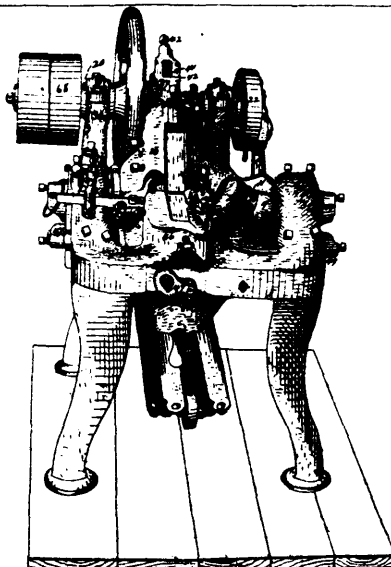
15989 Smith's Improvement in Nozzles for Sprinklers.



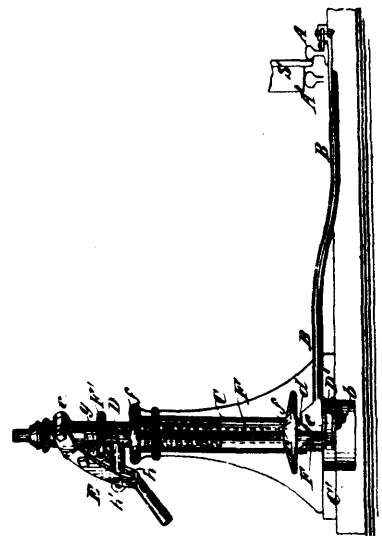
15990 McGtehan's Improvement in Car-Couplings.



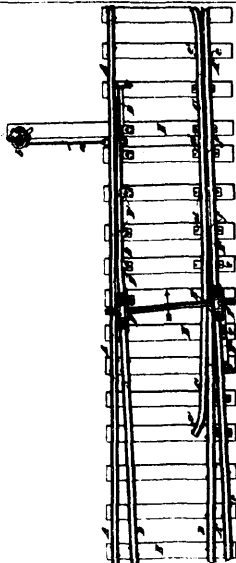
15995 Nesbitt's Improvements in Stoppers for Tooth Powder Bottles.



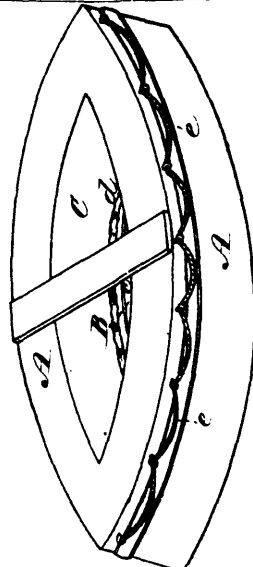
15996 Coyne's Improvement on Nail Cutting Machines.



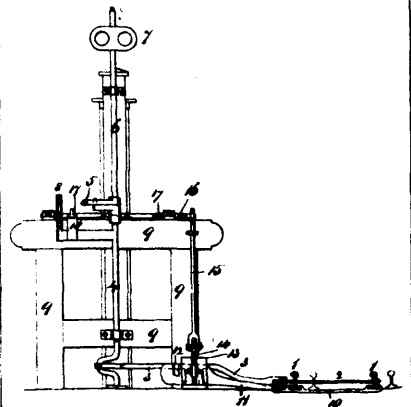
15997 Tracy's Improvements on Switch Stands.



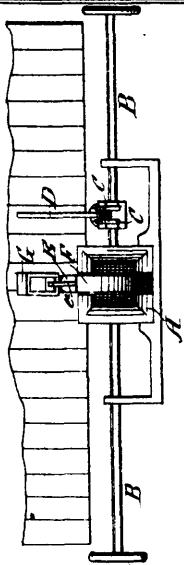
15998 Tracy's Improvements on Railway Switches.



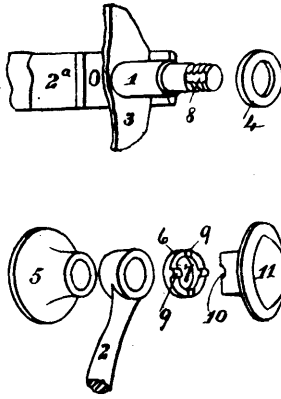
15999 Lockerby's Improvements on Life Boats.



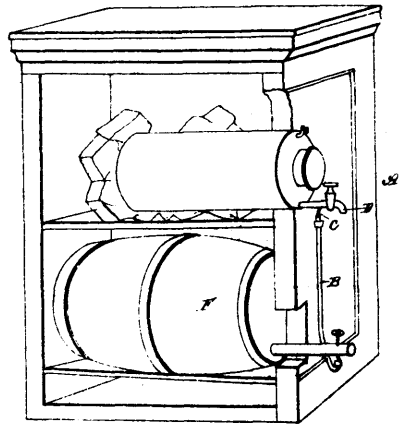
16000 Rowlands' Improvements on Railway Switch Fastenings.



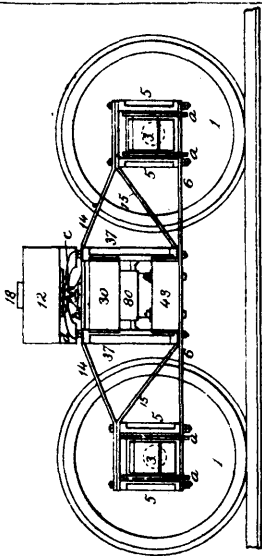
16001 Litton's Improvements on Car-Couplings.



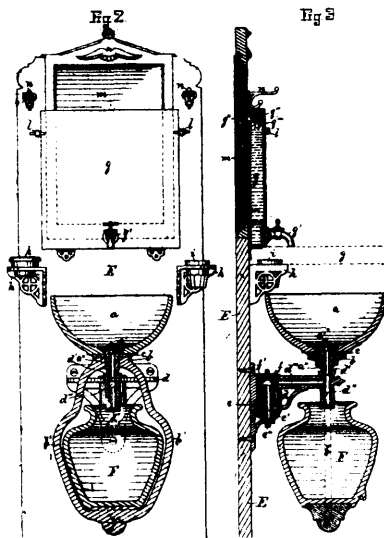
16002 Raymond's Improvements on Vehicle Tops.



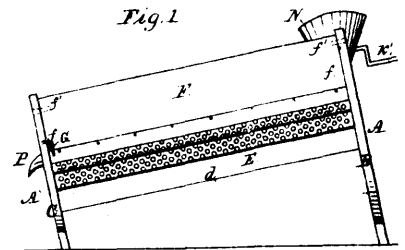
16003 Evenden's Improvements on Ale Condensers.



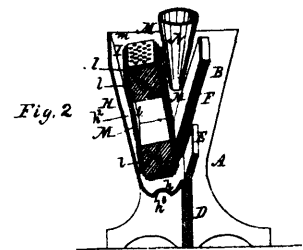
16004 Chisholm's Improvements on Car Trucks.



16005 Wellington's Improvements on Toilet Apparatus for Ships.



16006 Bales' Improvements in Cockle Machines.



16009 Weston's Improvements on Apparatus Connected with Increasing the Illuminating Power of Coal Gas.

Fig. 1.



Fig. 2.

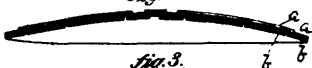


Fig. 3.

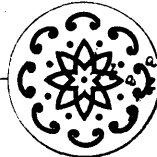
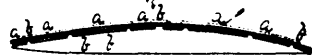


Fig. 4.



16007 Edge's Improvements on Inlaid Work, and Process for Producing the same.

FIG. 1.

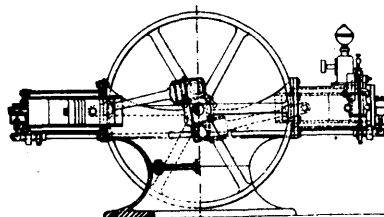
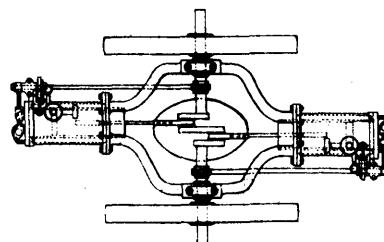
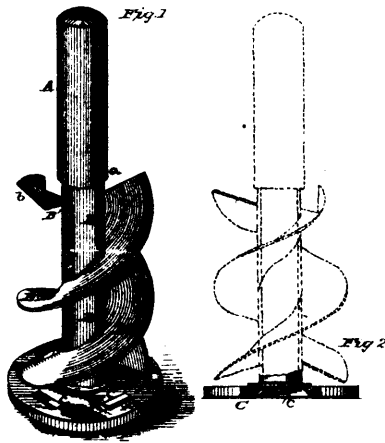


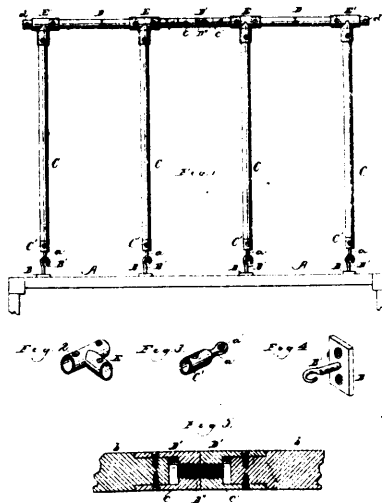
FIG. 2.



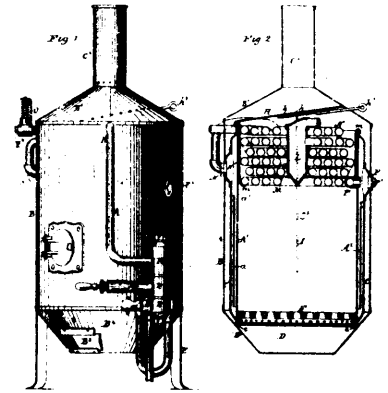
16008 Ashbury, Sumner, Lees & Sanderson's Improvements in Gas Motor Engines.



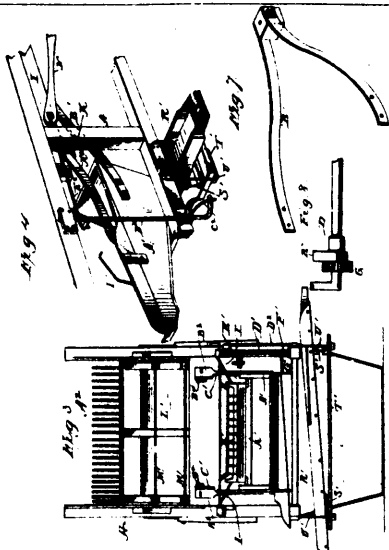
16010 Robnison's Improvements on Churn Dashers.



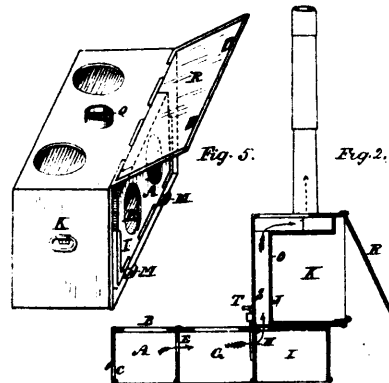
16011 Cook's Improvements on Awning Frames.



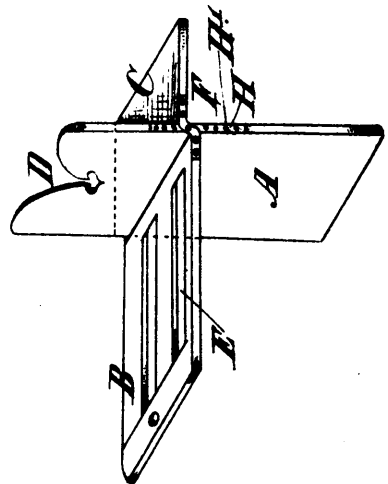
16013 Kellogg & Kirby's Improvements in Steam Boilers.



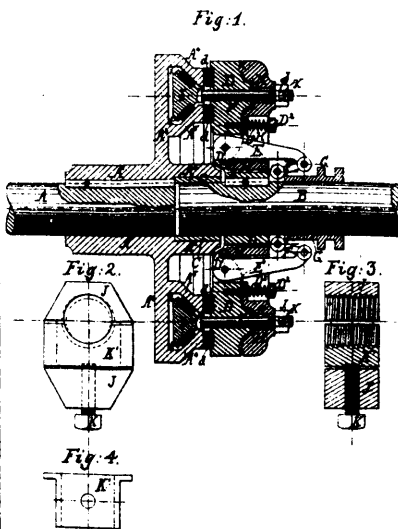
16014 Huber & Strobel's Improvements in Grain Threshing and Separating Machines.



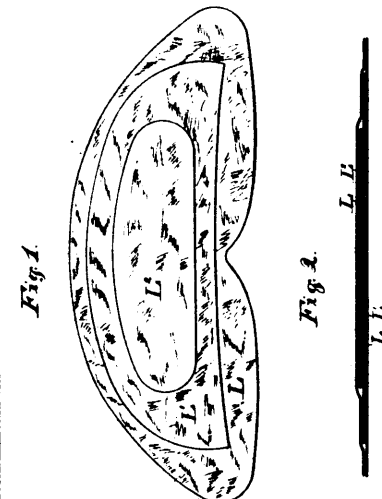
16015 Cole's Improvements on Camp Cooking Stoves.



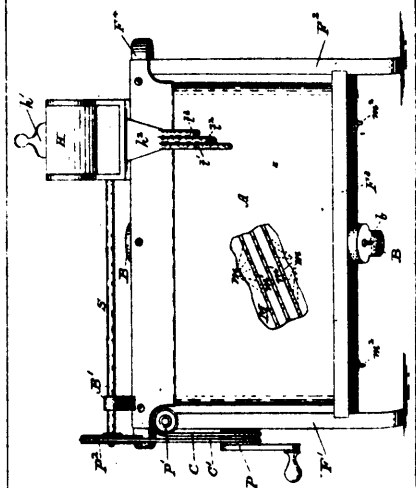
16025 Gourdeau's Improvements on Foot Rests.



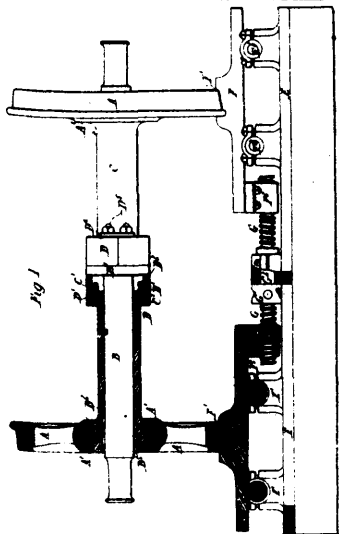
16026 Frisbie's Improvements on Friction Clutches.



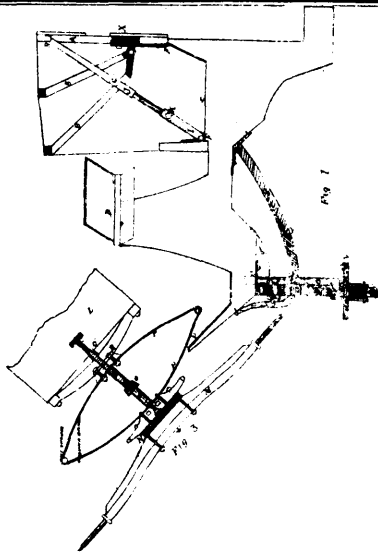
16027 Rochette's Improvements on Stiffeners for Boots and Shoes.



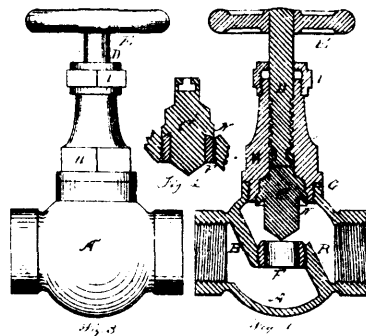
16028 LaBrèche-Viger's Improvements on Magnetic Ore Separators.



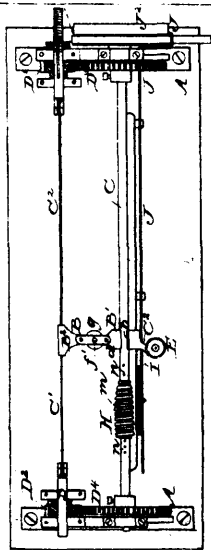
16035 Anderson's Improvements in Contrivances for Varying the Gauge of the Wheels of Rolling Stock.



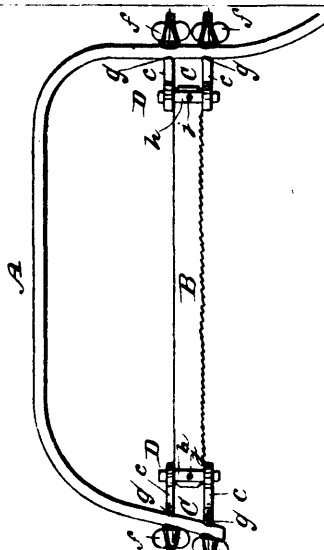
16036 Roy's Improvements on Carriages.



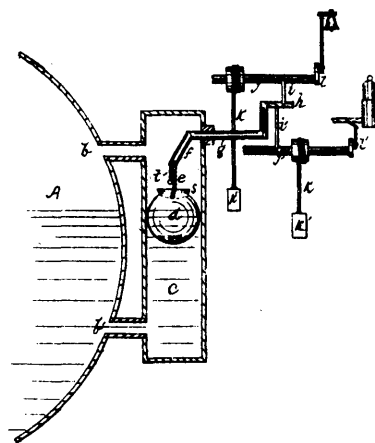
16037 Van Wie's Improvements on Globe Valves.



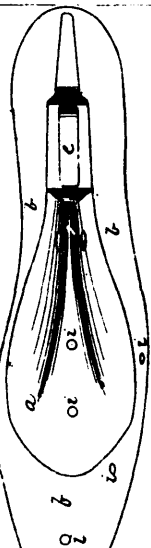
16038 Rice's Improvements on Wire Covering Machines.



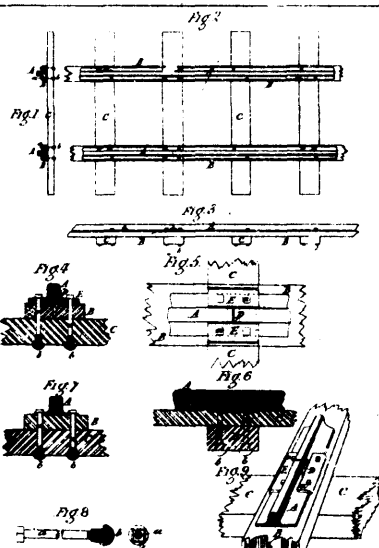
16039 Bennett's Improvements on Saw Frames.



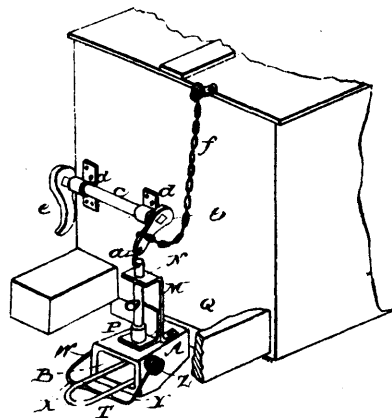
16040 Getchell's Improvements on Feed Water Alarms for Steam Boilers.



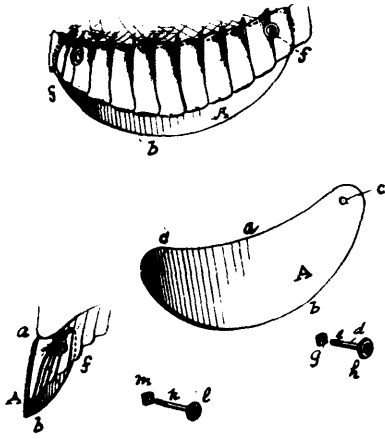
16041 Markie's Improvements in Metal Lasts.



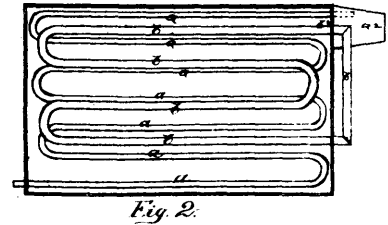
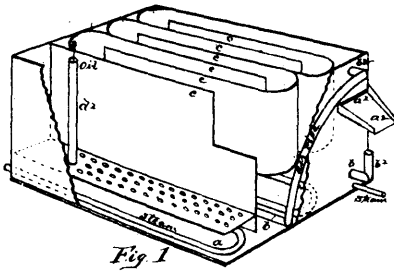
16042 Seaton's Improvements on Permanent Ways.



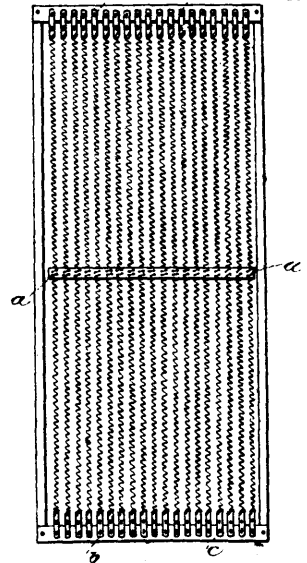
16043 Eltzroth & Raypholtz's Improvements on Car-Couplings.



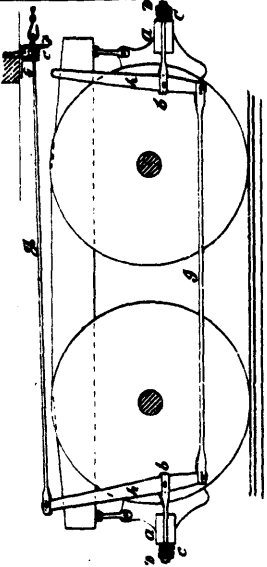
16044 Deeds' Improvements on Anti-Cribbing Attachments for Horses.



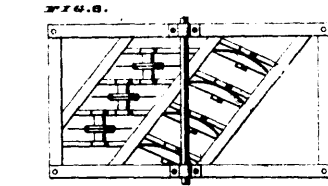
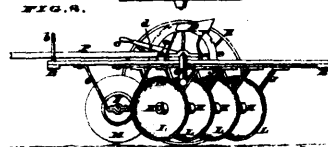
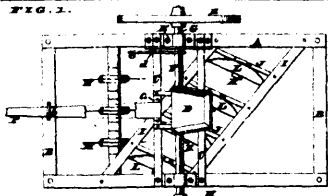
16045 Smith's Process and Apparatus for Improving the Fire Test of Oils.



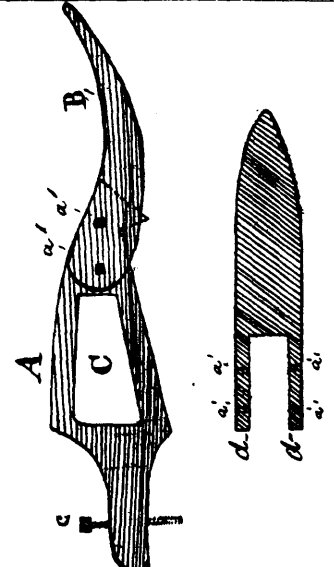
16046 Bartram's Improvements on Bed Bottoms.



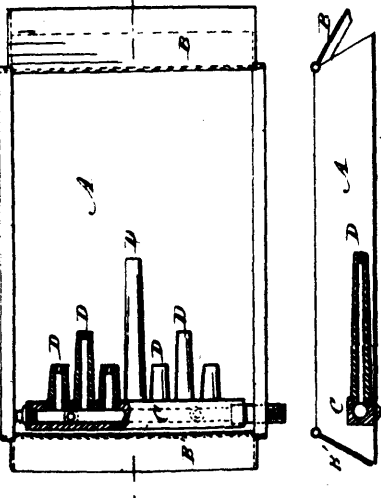
16047 Webb's Improvement on Railway Brakes.



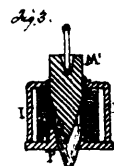
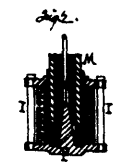
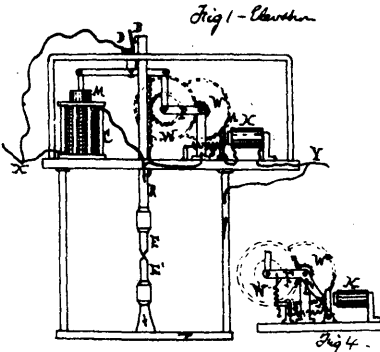
16048 Kyle's Improvements on Rotary Gang Machines.



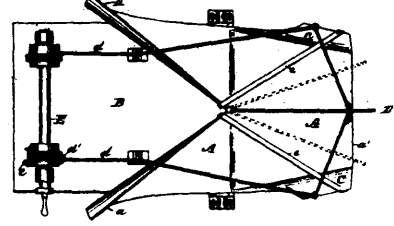
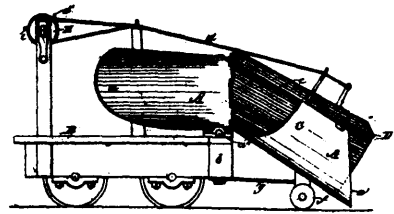
16049 Williams' Improvements on Reaping Machines.



16050 Kilborn & Smith's Improvements on Cleaning Ash Fans of Locomotive Engines.



16051 Thomson's Improvements on Electric Air Lamps.



16053 Resley's Improvement on Snow Ploughs.