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### INVENTIONS PATENTED.

NOTE.—Patents are granted for 15 years. The term of years for which the fee has been paid, is given after the date of the patent.

#### No. 32,660. Rope Grip or Selvage Strop.

(*Estrope.*)

Arthur K. Evans, Toronto, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. A device wherein a piece of rope, or marling, or chain may be passed through a suitably-shaped plate, and straining piece in which it is attached in such a manner as not to draw out when a strain is put on the straining piece, the loops of marling or chain, which encircle the rope to be gripped, tightening up in a uniform manner and firmly binding the plate to the rope, substantially as described and for the purpose specified. 2nd. A rope grip consisting of pieces of suitably-shaped metal, or other rigid material, through which a piece of marling, or rope, or chain is passed and secured thereto, and forming a series of loops encircling the rope to be gripped in such a manner that, when a strain is put on the straining piece, the loops tighten up in a uniform manner and firmly grip the rope to be strained, pressing it against a rigid plate, substantially as described and for the purposes specified. 3rd. A grip formed by a series of running loops of marling, or tarred rope, or chain passed over the material to be gripped and through suitably-shaped pieces of metal, or other rigid material, the loops being designed to tighten up in a uniform manner when a strain is put on one of the pieces forming a straining piece, substantially as specified. 4th. The combination with rope A, of plate B having hooked projections *b*, and holes *d*, the straining piece D provided with ring E, and holes *e*, and the rope, or marling, or chain C secured to said plate B, and straining piece D, substantially as described and for the purpose specified. 5th. The combination, with the rope A, of the pieces G and H having holes *m*, T-shaped projections and notched so as to form shouldered *k*, the rope, or marling, or chain C secured to said pieces G and H, and the straining piece D having holes *e*, and ring E, substantially as described and for the purpose specified.

#### No. 32,661. Rotary Plough. (*Charrue rotative.*)

Joseph Drader, London, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. A rotary harrow formed by a series of curved blades arranged a short distance apart upon a spindle passing through their centre, the said blades being set in such relation to each other that no two adjacent blades shall be longitudinally parallel, substantially as and for the purpose specified. 2nd. The combination, with a series of blades supported on a spindle, of ferrules fitted onto the spindle, one between each pair of blades, each ferrule having tents designed to fit into holes or recesses formed in the surfaces of the blades, in such a manner that the adjacent blades separated by the ferrule shall be held at the proper angle to each other, so that their ends shall be substantially upon the line of an Archimælean screw, substantially as and for the purpose specified. 3rd. The combination, with a series of curved blades arranged as described, of a series of scrapers forked and supported at one end by the ferrule separating the blades, and at their other ends adjustably connected to a horizontal bar suitably supported, as described, substantially as and for the purpose specified. 4th. A frame and the spindles B and their blades combined with the pair of concave-disc plows independently supported in proximity to each other between said spindles, in such a manner that their outer edges may be angled, substantially as and for the purpose specified. 5th. The discs L independently journalled in proximity to each other and supported by the posts N carried by the disc O, in combination with the toothed quadrants R, and handle S, arranged substantially as and for the purpose specified. 6th. The disc O journalled in the bracket Q, and the posts N connected to the disc O and arranged to support the discs L, substantially as and for the purpose specified. 7th. The plate U arranged to extend over and rest upon the brace F, and fixed to the bracket V, in combination with the lever X pivoted to the tongue D, and having a toothed quad-

rant formed on it to engage with the rack formed on the bracket V, substantially as and for the purpose specified. 8th. The spindle B having a cylindrical block Y formed upon or connected to it, in combination with a pivoted frame Z having a hole in it around which an annular rib *e* is formed to fit into an annular recess *d* made in the block Y, substantially as and for the purpose specified. 9th. The blocks Y formed upon or connected to the inner ends of the spindles B, and having their ends shaped so that they will butt against, and engage with each other with the least possible friction, in combination with the frames Z forming journal-boxes for the blocks Y, and provided with pins *f*, to fit into oblong holes *g* made in the bracket G, substantially as and for the purpose specified.

#### No. 32,662. Ink-Stand. (*Encrier.*)

John Larkin, Bradford, Penn., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. An ink-stand, the reservoir of which is composed wholly of rubber, the bottom and sides of the reservoir being formed of the thick rubber and the top of thin collapsible rubber, substantially as shown. 2nd. The combination, with an ink-stand, the reservoir of which is composed wholly of rubber, the bottom and sides of the reservoir being formed of thick rubber, and the top of thin collapsible rubber, of an endwise moving tube, which extends down through the top into the body, and provided with a cone or funnel at its outer end, whereby the top is depressed by a pressure upon the cone and the ink forced therein automatically, substantially as shown and described.

#### No. 32,663. Rotary Heel Motor for Boots and Shoes. (*Tourne-talon de chaussure.*)

William A. Elliott, Footscray, near Melbourne, Victoria, 2nd November, 1889; 5 years.

*Claim.*—The construction of a rotary boot heel motor formed of inner and outer rabbetted plates, and fastened in the manner substantially above described and for the purposes specified.

#### No. 32,664. Sheath for Book Covers.

(*Enveloppe pour couvertures de livres.*)

Charles H. Caryl, Kalamazoo, Mich., U.S., 2nd November, 1889; 5 years.

*Claim.*—A two-part sheath for a book-cover, each part being constructed with a pocket in one end to receive and sheathe a corner of one of the covers, the other ends of the parts being adapted to fold over and sheathe the corners of the other cover, in adjusting said parts to the cover, one part overlapping and adhering to the other part centrally and transversely to the book-covers, substantially as set forth.

#### No. 32,665. Disk Harrow. (*Herse à disque.*)

Jay S. Corbin, Prescott, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. In a harrow, two opposing disk-gangs, a tongue, and draft bars or arms of unequal length extending to the gangs. 2nd. In a harrow, opposing disk-gangs, a tongue, a lever mounted on the tongue in advance of the gangs, and rods of unequal length connecting the gangs and lever. 3rd. In a harrow, opposing disk-gangs, a tongue, draft-bars or arms of unequal length connecting the gangs to the tongue, and the rods of unequal length connecting the gangs to the lever. 4th. In a disk-harrow, a frame consisting of a tongue, two draft-bars or arms of unequal length, and a cross-beam, substantially as set forth. 5th. In a disk-harrow, opposing disk-gangs, a lever mounted upon the frame in advance of the gangs, and rods of unequal length hinged to the lever above the frame and extending rearwardly to the gangs. 6th. In a disk-harrow, opposing disk-gangs hinged to the frame at points below their axles, and rods pivoted to the lever above the frame and extending to the gangs, as and for the purposes specified. 7th. The combination, in a harrow-gang, of a series of disks, cylindrical hollow spools between the disks and supporting collars, as and for the purposes set forth. 8th. The combination in a harrow-gang, of a series of disks, cylindrical hollow spools between the disks, and a clamp-rod. 9th. The combination, in a harrow

gang, of a series of disks, cylindrical hollow spools, a clamp-rod, and supporting collars arranged to hold the parts concentric with each other. 10th. In a disk-harrow, having one gang placed rearwardly of the other, the rearward having more disks than the forward gang to counteract side draft. 11th. In a disk-harrow, a tongue composed of two pieces extending directly to the gangs and joined at their forward ends, as and for the purpose set forth. 12th. A harrow-disk of spheroidal or equivalent shape, as set forth. 13th. A harrow-disk having a diametral section  $a$ ,  $b$ ,  $c$ , Fig. 11, or its equivalent, as set forth.

**No. 32,666. Machinery for Manufacturing Peat Fuel.** (*Machinerie pour la fabrication de la tourbe combustible.*)

David Aikman, Montreal, Que., 2nd November, 1889; 5 years.

*Claim.*—1st. In an apparatus for manufacturing peat fuel, the combination, with a floating scow provided with excavating, elevating and stick removing mechanism, of troughs or receptacles for the semi-liquid peat pipes, for admitting live steam through heated rollers or their equivalents for reducing the pulp to thin films or flakes and drying same, a press having a series of moulds and plungers for forming the blocks, and means for maintaining such moulding devices at a high temperature, all substantially in the manner and for the purpose described. 2nd. The combination of a receiving hopper for the semi-liquid pulp-steam jets, for heating same therein, a screw or its equivalent for conveying such heated pulp, heated rollers or surfaces for working same into dried sheets, films or flakes, scrapers for removing and discharging the dried peat, and a heated press for condensing same into wholly or partially carbonized blocks, substantially as specified. 3rd. The combination, with a trough or receptacle, and a conveyor for the semi-liquid pulp, of a pair or series of hollow rollers having steam inlet and outlet pipes, means for revolving same, and a scraping device for clearing the rollers, substantially as specified. 4th. A press for moulding peat into blocks for fuel, consisting essentially of a revolving table or cylinder adapted to receive and retain a high degree of heat, and having a series of pockets or openings to receive the dried peat, and upper and lower plungers for compressing the blocks therein, and mechanism for maintaining the moulds until the blocks are completely condensed and carbonized, substantially as described. 5th. The combination, with the revolving table or cylinder  $q^2$  having pockets or openings, and plungers for moulding the blocks, of the heated receiver  $r^1$ , and mechanism for feeding the peat therefrom into the moulds, substantially as described. 6th. The combination, with the press and receiver  $r^1$  adapted to be heated, and in which the air is prevented from circulating, as described, of the central shaft  $m^1$  having arms  $n^1$ , substantially as described. 7th. In a peat press, the combination, with the revolving table or cylinder  $q^2$  having recess  $s^1$ , and openings  $a^1$ , of the operating plungers  $K^1$  and  $r^1$ , and means for operating same, substantially as and for the purpose specified. 8th. The combination, with the table having openings  $a^1$ , of the plungers having grooves  $a^2$  for allowing air to escape, substantially as described.

**No. 32,667. Stapling Implement.** (*Outil pour river les crampons.*)

Benjamin W. Buxton (assignee of Osro P. Johnson and Henry F. White), Detroit, Mich., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. A stapling implement, consisting of a clinching jaw and a driving jaw jointly connected, said driving jaw provided with a driving arm, a sliding head engaged upon said arm and forming a seat for a staple, substantially as set forth. 2nd. A stapling implement, consisting of a clinching jaw and a driving jaw jointly connected, said driving jaw provided with a driving arm, and a sliding head engaged upon said arm, and a spring bearing upon said head, substantially as set forth. 3rd. A stapling implement, consisting of jaws  $A$ ,  $A^1$  jointly connected, one of said jaws provided with a driving arm, and the other jaw with a clinching die, a sliding head supported upon said driving arm, a spring bearing on said head, the movement of said head toward said die limited at a point above the said arm, substantially as set forth. 4th. A stapling implement, consisting of jaws  $A$ ,  $A^1$  jointly connected, one of said jaws provided with a driving arm, and a sliding head supported upon said arm, said head provided with a flange at its upper end, and the other jaw provided with a clinching die, substantially as set forth. 5th. A stapling implement, consisting of jaws  $A$ ,  $A^1$  jointly connected, one of said jaws provided with a driving arm, said head flanged at its sides to embrace the lateral edges of said arm, and flanged at its upper end to limit the movement of the head in one direction, and a spring bearing on said head, substantially as set forth. 6th. A stapling implement, consisting of jaws  $A$ ,  $A^1$  jointly connected, one of said jaws provided with a clinching die and the other jaw with a driving arm, having side flanges, a sliding head supported upon said arm, said head flanged at the sides to embrace the side flanges of said arm, and also flanged at its upper end to limit the movement of the head in one direction, a spring connected to one of the jaws and bearing on said head, substantially as set forth. 7th. A stapling implement, consisting of jaws  $A$ ,  $A^1$ , having a jointed connection, one of said jaws provided with a clinching die, and the other jaw with a driving arm, a sliding head engaged upon said arm a spring bearing on the end of said head, a part of said head bent over to form a flange to limit the movement of said head in one direction, and a guide notch for the end of the spring, substantially as set forth.

**No. 32,668. Implement for Fluting Boot or Shoe Uppers.** (*Outil pour tuyauter les empeignes des chaussures.*)

Ambrose Eastman, in trust (assignee of Charles T. Wood), Boston, Mass., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with a base piece, provided with a series of teeth, of the frame  $b^2$  and the swinging arm  $a^2$  secured to

said frame, and provided with a gear  $A^6$ , adapted to mesh with the teeth of the base piece, substantially as shown and described. 2nd. The combination, with the base piece, having tapering teeth arranged in a curve thereon, of the frame  $b^2$ , the arm  $a^2$  pivoted at one end to a swivel in the frame, the toothed gear  $A^6$  mounted on said arm, the arm  $j^6$  and its stud having a rubber roll projecting under the front edge of the base piece, substantially as shown and described.

**No. 32,669. Scallop Turner.**

(*Découpoir d'oreille de chaussure.*)

John Foster & Co. (assignees of William D. Hall), Beloit, Wis., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. In a machine for turning and stretching out laterally the scallops or edges of boot flies, shoe uppers and other turned work or articles, the laterally expansible spreader, comprising a support, a relatively fixed member and a relatively movable member working transversely across the face of said fixed member, substantially as set forth. 2nd. In a machine for turning and stretching out laterally, scallops or for beading purposes, as described, the combination of the laterally expansible spreader, comprising a support, a fixed member, and a relatively movable member pivoted to the face of the fixed member, between the ends thereof, to vibrate transversely across the same, with an operating mechanism connected with said vibratory member, substantially as set forth. 3rd. The combination, with the frame and an expansible spreader mounted thereon, and consisting in a fixed member and a laterally-vibrating member pivoted to the face thereof, of an operating mechanism and stops in the path of the movable member to limit the length of its stroke in either direction, substantially as set forth. 4th. In a machine of the character described, a laterally-expansible spreader, comprising the stationary member and a laterally movable member pivoted together face to face, rounded at their upper ends and made of an increased thickness on the opposite or working edges  $k$ ,  $k'$ , and of diminishing thickness in reverse directions relatively to each other, toward their opposite edges, substantially as set forth. 5th. The combination, with the table having a standard on its upper side, of a laterally-expansible spreader comprising a stationary member secured to said standard, a laterally-vibrating member pivoted between its ends to the stationary member, and extending at its lower end down and to the table, a spring for returning the said member to its normal position, stops in the path of the movable member for limiting its movement in either direction, a horizontally-swinging lever engaging with one end, the lower end of the movable member to impart a lateral movement thereto against the action of the spring, a vertical bell-crank lever engaging the other end of the horizontal lever, a treadle and a rod connecting the treadle and the bell-crank lever, substantially as set forth.

**No. 32,670. Attachment for Double Line Sewing Machines for Piping or Cording or the like.** (*Disposition aux machines à coudre à double couture, pour tuyauter ou cordonner ou autre chose.*)

Chappell, Allen & Co. (assignees of Thomas R. Rossiter), London and Bristol, Eng., 2nd November, 1889; 5 years.

*Claim.*—1st. An attachment for piping, cording or the like, in double line sewing machines, the said attachment being furnished with two guides, as described. 2nd. An attachment for piping, cording or the like, in double line sewing machines, the said attachment being furnished with two guides, one or both of which can be moved into and out of position, substantially as and for the purposes described. 3rd. An attachment for the purpose described, consisting of the main part B, having two guides  $b^1$ ,  $b^2$ , slot  $b^3$  and fixing screw  $d$ , substantially as hereinbefore described and illustrated in Figs. 1, 2 and 3 of the accompanying drawings. 4th. An attachment for the purpose described, consisting of the main part B, the bar guides  $b^1$ ,  $b^2$ , and guide-carrying spring  $e$ , capable of being moved into and out of position, substantially as hereinbefore described and illustrated in Fig. 4 and 5 of the accompanying drawings.

**No. 32,671. Carriage Top.** (*Couverture de voiture.*)

Thomas & Merrell (assignees of Fredus R. Merrell), Versailles, Ohio, U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with a carriage top, of two curtains hung on rollers turning on bearings in the same horizontal plane and in line with each other, one of which curtains has a projecting edge adapted to lap on the other, substantially as described. 2nd. The combination, with a carriage top, of two curtains, one of which has a projecting edge adapted to lap on the other, and one of its upper corners cut away to clear the hanger on which it is suspended, substantially as described. 3rd. The combination, with a canopy top, and the curtain rollers therefor, of the irons D, E, F, each carrying a hanger for the rollers, and the rear iron D carrying two hangers, one of said hangers being attached outside of the centre of the hanger for the side curtain roller, substantially as described.

**No. 32,672. Axle Cutter.** (*Découpoir d'essieu.*)

Frank E. Beardsley and Warren R. Sullivan, Traverse, Mich., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. In an axle cutter, the combination, with a suitable frame work adapted to be fastened to the axle, of the tool head having the cutting knives located thereon, a shaft for revolving the same, and a movable sleeve embracing said shaft and adapted, when moved longitudinally, to carry the shaft with it, substantially as described. 2nd. In an axle cutter, the combination, with a suitable frame work adapted to be fastened to the axle, and the shaft  $E$  carrying the tool head  $E^1$ , of the feeding mechanism, consisting of the sleeve  $G$ , screw-threaded on its interior to fit the threaded exterior of the shaft jour-

nal, and adapted, when moved longitudinally, to simultaneously move the shaft in the same direction, the pinion J for revolving the sleeve G, and means for revolving the pinion J when desired, substantially as described. 3rd. In an axle cutter, the combination, with the face plate C, of an adjusting plate D, adjustably fastened to the face plate and carrying the operative mechanism, substantially as described. 4th. In an axle cutter, the face plate G having the opening, through which the operating shaft passes, considerably larger than the shaft, substantially as described.

### No. 32,673. Joint. (*Joint.*)

The E. & C. Gurney Co. (assignee of Charles Levey), Toronto, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. A joint formed of a pipe of lead, or similar compressible material, placed between the part to be jointed together, substantially as and for the purpose specified. 2nd. A pipe C, made of lead or other compressible material, fitted into a groove or grooves a made in the section A, substantially as and for the purpose specified. 3rd. A pipe D, made of lead or other similar compressible material fitted into a groove or grooves b made in the section A, substantially as and for the purpose specified. 4th. The pipes C, D, made of lead or similar compressed material fitted into grooves a and b made in the sections A, substantially as and for the purpose specified.

### No. 32,674. Horse Detacher.

(*Dételage instantané.*)

James McMorries, Thorp's Springs, Tex., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with the body and the axle of the crank-shaft journalled on the under side of the body, the sliding rods mounted on the front side of the axle, the ring connected to said rods to draw them together when it is raised, the pulley mounted on the under side of the body, the link connected to the ring, the strap passing over the said pulley, and connected to the link and the crank-shaft, as set forth. 2nd. The combination of the sliding rods, springs to normally hold said rods projected, the crossed levers pivoted together and having their lower ends pivoted to the sliding rods, the ring mounted loosely on the upper ends of said cross levers, and mechanism for raising and lowering said ring, as set forth. 3rd. In a horse detacher, the combination, with the thill clips having the registering eyes E, E, of the sliding spring-actuated rods F, F, engaging normally in the said eyes, the levers I, I, pivoted together and attached at their lower ends to the said rods, the ring K sliding on the upper arms of the levers, the link M attached to the ring, the pulley P mounted on a suitable bearing on the vehicle, the transverse shaft N having the crank O, the band L passing over the pulley P, and connected at its ends respectively to the crank O and the link M, the arm R attached to the end of the shaft N, and the vertical operating rod S, connected at the lower end to the extremity of the said arm, substantially as and for the purpose specified.

### No. 32,675. Machine for Compressing Air or other Gas. (*Machine à comprimer l'air ou autres gaz.*)

Edward F. Clarke, Walsall, Eng., 2nd November, 1889; 5 years.

*Claim.*—1st. The improved method of compressing air or other gas, by means of steam acting upon a column of water interposed between the steam and the air, or other gas to be compressed, substantially as described. 2nd. An apparatus for the compression of air or other gas, compressing steam and water cylinders or chambers, means for alternately admitting steam into the same, and injecting water therein, air vessels connected therewith, and a receiver for the compressed air, substantially as specified. 3rd. The combination, with the steam and water cylinders or chambers and the air vessels, of the steam chest communicating with the boiler, or other source of steam supply, and the main slide valve arranged to be worked by a separate steam cylinder or engine, or by other suitable means, substantially as set forth. 4th. An air or gas compressor having the air vessels B, B', of less capacity than the steam space of the cylinders or chambers, whereby a small quantity of water will be discharged with the air, the loss of water being compensated for by the injection of water into the said cylinders or chambers, substantially as described. 5th. The combination, with the steam and water cylinders and air vessels, of an air receiver or other suitable source of supply having a valve through which the water from the said receiver will be admitted into the steam cylinders or chambers, to condense the steam and to compensate for the loss of water ejected at each operation with the compressed air, substantially as described. 6th. The combination, with the steam and water cylinders or chambers, and the slide valves for controlling the admission of steam and water thereto, of valves automatically actuated, substantially as set forth.

### No. 32,676. Road Cart. (*Désobligeante.*)

Nelson H. Hill, Armada, Mich., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. In a road cart, the combination, with the shafts, of a spring J terminating in depending ends J', in connection with the crate bars C, the said ends J' adapted to enter an orifice at the end of said crate bars and secured therein, substantially as and for the purposes described. 2nd. In a road cart, the combination, with the shafts, of a spring J provided with depending ends J', and crate bars C of metallic piping, said ends J' and said crate bars adjustably secured to each other, substantially as and for the purposes described. 3rd. In a road cart, the combination of the axle, the shafts, the clips G' secured to the axle and projecting rearward therefrom, the spring G supported in said clips at the rear of the axle, the bolster F, the pivotal seat support E, the seat D, and the crate or body C adjustably suspended at its forward end and from the shafts, substantially as described.

### No. 32,677. Foresight for Rifles and other Firearms. (*Mire pour les carabines et autres armes à feu.*)

John Cochran and John R. Bond, Tottenham, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. A foresight consisting of a bead A supported by a thin plate B, substantially as and for the purpose specified. 2nd. A foresight consisting of a bead A connected to the thin plate B, which is supported by the posts C, substantially as and for the purpose specified. 3rd. A foresight consisting of a bead A connected to the thin plate B, which is supported by the posts C, connected to the cross-head D, which is fitted into the dove-tailed groove formed in the sight block F, substantially as and for the purpose specified. 4th. A foresight consisting of a bead A connected to the thin plate B, which is supported by the posts C, connected to the cross-head D, which is fitted into the dove-tailed groove formed in the sight-block F, and provided with a pointer H, and acted upon by the spring G, substantially as and for the purpose specified.

### No. 32,678. Vehicle Spring. (*Ressort de voiture.*)

William E. Powers, Hastings, Mich., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with the spring composed of the member C, and the arm c, of the re-enforcing spring composed of the member D, the arm d connected at its outer end with arm c, and the arm E, the latter adapted to normally stand at an angle to the support to which the spring is secured, substantially as and for the purpose described. 2nd. The combination, with the member C having the spring-arm c, of the member D having the arm d, which is connected with the arm c, and having the arm E, which stands at an angle to the support to which the spring is secured, substantially as set forth. 3rd. The herein-described spring composed of the parallel members C and D, the arms c and d at the outer ends of the members C and D respectively, extending in the same direction and connected together, and the arms A and E at the inner ends of the said members, the arm E extending in an opposite direction to the arm A and projecting up at an angle, substantially as described for the purpose specified.

### No. 32,679. Edge Turner for Sheet Metal Roofing. (*Ourlieuse pour les feuilles métalliques à toitures.*)

Walter K. Patrick, Urbana, Ohio, U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. In a roofing machine, the combination, with a frame, of a set of initial rollers, one of which has peripheral configurations K, O, P, and the other of which peripheral configurations M, L, Q, R, to bend the edges of an inserted metallic strip into the plurality of obtuse angles and set of intermediate rollers, one of which has peripheral configurations H, Y, Z, and the other of which has peripheral configurations H, b and c, to bend said plurality of angles into sharper angles, and a final set of rollers, one of which has peripheral configurations h, j, k, and the other of which has peripheral configurations i, l, m, to bend said plurality of sharper angles into right angles, and mechanism to rotate said rollers. 2nd. In a roofing machine, the combination, with a main frame, of a set of initial rollers mounted therein and having peripheral surfaces K, O, P and M, L, Q, R respectively, a set of intermediate rollers mounted therein, and having peripheral surfaces W, Y, a, Z and X, b, c respectively, a set of final rollers having peripheral surfaces h, j, k and i, l, m respectively, means to rotate the said rollers, and guiding and pressing rollers mounted on the frame respectively before and after the initial and final rollers, substantially as shown and described. 3rd. In a roofing tool, a pair of initial rollers having surfaces K, O, P and M, L, Q, R respectively, for the purpose of forming two obtuse angles at each edge of a metallic strip drawn between said rollers. 4th. In a roofing tool, a pair of intermediate rollers having surfaces W, Y, a, Z and X, b, c respectively, for the purpose of further bending the previously bent edges of a metallic strip drawn between them, and whereby two angles are formed at one edge and three at the other. 5th. In a roofing tool, a pair of final rollers having surfaces h, j, k and i, l, m respectively, for the purpose of forming two right-angle bends at one edge, and three right-angle bends at the other edge of a previously bent metallic strip. 6th. In a roofing tool, the combination, with a frame, of two conical compressor rollers, one located at each side of the machine and adapted to press the edges of a right angle bent strip of metal into temporary acute angles.

### No. 32,680. Field Mouse Trap.

(*Souricière de campagne.*)

Herman Rippke, Ober Jaschkittel, Prussia, 2nd November, 1889; 5 years.

*Claim.*—A field mouse trap in which by the action of a spiral spring placed in the mouse hole, a trigger plate b furnished with teeth is engaged between, and liberated from wire limbs 2, 3 and 4, 5, in the manner that, when a captured mouse attempts to escape from the trap it strikes against the trigger plate b thus disengaging the wire limbs, and allowing them to spring together and jam in the mouse, substantially as described.

### No. 32,681. Tube Cleaner. (*Nettoyeur de tube.*)

David K. Strachan, Goderich, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. In combination with horizontal or vertical pipes or tubes in hot water heaters, the scraper or tube cleaner comprised of two perforated plates connected with a rod extending beyond the front head, whereby the cleaner can be moved back and forth or upwards and downwards over the pipes or tubes, substantially as set forth. 2nd. The flue cleaner or scraper consisting of two



perforated plates or pieces secured together and having, at each series of openings, a washer, and provided with a handle, substantially as described. 3rd. The die cleaner C composed of two pieces of metal having registering pipe or tube openings, and ears, and rod having nut thereon, and the washers D between the pieces, substantially and for the purposes set forth.

**No. 32,682. Apparatus for the Manufacture of Peat Fuel.** (*Appareil de fabrication de la tourbe combustible.*)

Archibald A. Dickson, Côte St. Antoine, Que., 2nd November, 1889; 5 years.

*Claim.*—1st. In an apparatus for manufacturing peat fuel, the combination, with mechanism for depriving the peat of foreign substances and extra moisture, of a heated chamber, into which the peat is fed continuously, a carrier within said chamber, and a hot air blast arranged to pass through said heated chamber, substantially as and for the purpose specified. 2nd. A press for forming blocks of peat fuel consisting of an outer steam jacket, a cylinder or tube surrounded thereby, and a transverse passage through which the peat is fed to the interior of the cylinder, a plunger working therein and a yielding resistance block inserted therein at the beginning of operation, all substantially as herein described. 3rd. In apparatus for the manufacture of peat fuel, a drying chamber through which the peat is conveyed, and means for creating a suction through such chamber, for the purpose described. 4th. In an apparatus for the manufacture of peat fuel, a drying chamber, a hot air conductor communicating with said chamber, and a suction fan for exhausting such hot air, all combined and operating as and for the purposes described.

**No. 32,683. Sucking Cushion for the Period of Menstruation.** (*Sac cataménial.*)

Otto Hörig, Breslau, Germany, 2nd November, 1889; 5 years.

*Claim.*—1st. An absorption-pad for menstruations characterized by the sack-shaped covering or case A, made of india-rubber or other material and having at a slot or aperture which contains the absorption material, the said material being affixed by an elastic strap and clamps to the body, for the purpose set forth. 2nd. As an article for use in connection with an absorption-pad for menstruations, a case or covering A, adapted and constructed to be employed substantially as described.

**No. 32,684. Combined Nail Extractor and Box Opener.** (*Tire-clou ouvrant les caisses.*)

Richard W. Ripplet, (assignee of Dayton C. Hawkins), Terre Haute, Wis., U.S., 2nd November, 1889; 5 years.

*Claim.*—The combination of the lever A consisting of a handle *a*, a shank *e*, a hammer-head *f*, and a chisel blade *g*, said chisel-blade having upon its back side the incision or notch *b*, also the roughened surface *h* with the lever B, said lever B consisting of a handle *m*, a shank *d*, a hammer-head *e*, and a curved nail-claw *i*, and the pivot *c*, said pivot fastening the two levers A and B together, all as and for the purpose herein described and specified.

**No 32,685. Lasting Machine.**

(*Machine à enformer.*)

William S. King, Minneapolis, Minn., (assignee of Hiram A. Gray, Wilmington, Del.), U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. In a lasting-machine jaw, the combination of a stock or body, a series of yielding blades or fingers carried thereby, and a removable former secured to the stock and arranged to bear upon the blades or fingers, substantially as set forth. 2nd. In a lasting-machine jaw, the combination of a stock or body, a series of yielding fingers or blades carried by said stock or body, a former bearing upon the fingers, and a bar or support for said former capable of being opened away from the stock or body, to permit the removal of one former and the substitution of another. 3rd. In combination with a stock or body A, yielding blades or fingers B, bar D, and former E carried by said bar and arranged to rest upon the blades or fingers B. 4th. In combination with stock A and yielding fingers B, bar D provided with slot *a*, and former E seated in said slot and adapted to bear upon the fingers B. 5th. In a jaw for lasting machines, the combination of stock or body A provided with lug *d*, yielding fingers B, and bar D provided with former E and with swinging yoke F. 6th. The herein-described lasting-jaw, consisting of stock or body A having lug *d*, yielding fingers or blades B, springs C, bar D, former E, yoke F pivotally attached to bar D, and screw G carried by said yoke, said parts being combined and arranged to operate substantially as set forth.

**No. 32,686. Machine for Making Wood Chips or Shavings for Packing, Upholstering, etc.** (*Machine à faire les copeaux ou la paille de bois destinée à l'emballage, la literie, etc.*)

Louis Arbey, Paris, France, 2nd November, 1889; 5 years.

*Résumé.*—1o. La disposition d'ensemble sur une même soole A, des organes E, E', I, de transmission de commande du mouvement devant venir du porte-couteaux H et de l'avance du bois et d'un bâti K, pourvu sur sa face antérieure de glissières L, dans les quelles vient coulisser le porte-couteaux vertical H, et d'une autre glissière N perpendiculaire aux premières et dans laquelle avance le chariot M, porteur du bois à débiter en copeaux. 2o. En combinaison avec notre machine à faire les copeaux, le mouvement d'avance réglable du chariot M portant le bois au moyen d'une vis Q, tournant d'un mouve-

ment intermittent et établie dans le bâti fixe, et d'un écrou R que l'on peut, par une poignée excentrée P, embrayer ou désembrayer à volonté avec cette vis, la vitesse de rotation intermittente de la vis et par suite la vitesse de l'avance sa cadencée du bois étant réglable à volonté, en faisant varier la longueur du bras de levier S de l'excentrique I, ainsi qu'il a été ci-dessus décrit. 3o. En combinaison avec notre machine à faire les copeaux, le mode de guidage du bois entre l'une des parvis verticales fixes K, un plateau presseur U, soumis à l'action d'un levier U', à contrepoids U'', et des tasseaux à contrepoids V, V', comme il a été ci-dessus décrit, 4o. En combinaison avec notre machine à faire les copeaux, le réglage de l'angle d'inclinaison des couteaux, au moyen d'une articulation des porte-couteaux X avec vis de réglage, comme il a été décrit ci-dessus.

**No. 32,687. Hame Tug.** (*Mancelle.*)

Robert F. Russel, Abilene, Kan., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. In combination with the hame, provided with the staple and the tug-strap, the within described attachment or plate B, constructed with the loop *c* at one end, and the branches *e* at the other end formed integral, the screw *f* connecting these branches and provided with the roller, as and for the purpose set forth. 2nd. The attachment for hames, having a loop *c* at one end, and the opposite end bifurcated, the branches having a square opening *k* and bevelled perforation *m* on the face of one of the branches, the block *o*, having square end *p* and bevelled end *n*, and the screw for holding said block in position, as shown and described.

**No. 32,688. Die for Making Axes.**

(*Etampe pour faire les essieux.*)

James P. Kelly, Louisville, Ky., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. A two-part die for forming axes and the like, each part provided with a cavity corresponding with the general design of the tool to be made, and one part provided with anvils B, B', and the other with cavities C, C', substantially as and for the purposes set forth. 2nd. A two-part die for forming axes and the like, each part provided with a cavity, corresponding with the general design of the tool to be made, and provided also with recesses *c* to receive the excess of metal, substantially as hereinbefore set forth. 3rd. A two-part die for forming axes and the like, each part provided with a cavity corresponding with the general design of the tool to be made, and with recesses *c* to receive the excess of metal, and cavities *d* for the eye-pin, one part being also formed with anvils B, B', and the other part with corresponding cavities C, C', substantially as and for the purposes set forth. 4th. A two-part die for forming axes and the like, provided with a cavity corresponding with the general design of the tool to be made, and with recesses *c*, said cavity and recesses being entirely surrounded by the stock of the dies, substantially as shown, whereby a closed die is formed, as hereinbefore described.

**No. 32,689. Die for Making Axes.**

(*Etampe pour faire les essieux.*)

William C. Kelly, Louisville, Ky., U. S., 2nd November, 1889; 5 years.

*Claim.*—1st. A two-part die for making axes or hatchets, each part having in its working face a cavity corresponding with the general shape of the implement to be formed, and provided with raised portions *f*, such as shown and described. 2nd. A two-part die for making axes or hatchets, each part having in its working face a cavity corresponding with the general shape of the implement to be formed, and provided with the raised portions *f* and eye-pin recess *c*, such as shown and described.

**No. 32,690. Making Matting Hammers.**

(*Fabrication des bouchardes.*)

Joseph Paquette, Côte St. Louis, Qué., 2nd November, 1889; 5 years.

*Claim.*—As a new article of manufacture, a matting hammer made on a milling machine, with the cutter A, substantially as described and for the purposes set forth.

**No. 32,691. Method for Packing Antiseptic Textile Surgical Dressings.** (*Mode d'empagement des articles de pansement antiseptiques.*)

Edwin L. Wood, Minneapolis, Minn., U. S., 2nd November, 1889; 5 years.

*Claim.*—The method of packing antiseptic textile surgical dressings, which consists in placing the same within its retaining wrappings and case in multiple endwise reverse folds, substantially as described, whereby the amount thereof desired for use may be unfolded from one end, without removing the remainder from the case.

**No. 32,692. Press Copying Device.**

(*Appareil de presse à copier.*)

Hugo Thum, Grand Rapids, Mich., U. S., 2nd November, 1889; 5 years.

*Claim.*—1st. In combination, the base plate and a covering flap connected thereto, said flap being flexible and arranged to cover the plate and by reason of said flexibility to lie directly upon all parts of the paper underneath, whereby pressure may be applied to all parts uniformly, substantially as described. 2nd. A device for copying letters, consisting of a base plate and a flexible sheet, said sheet being movable in its relation to the base plate and adapted to be used in connection therewith, substantially as described. 3rd. In the described device for copying letters, consisting of a base plate and flexible sheet connected therewith and covering the upper surface, a flange extending downwardly from one end thereof, all substantially as described.

**No. 32,693. Adjustable Cuff Holder.***(Agrafe poignet de chemise.)*

Joseph N. Clouse, St. Louis, Mo., U.S., 2nd November, 1889; 5 years.

*Claim.*—A cuff-holder, formed of a single piece of wire, bent upon itself, having a centre portion corrugated to form adjustments, and the two contiguous ends of the wire bent at an acute angle and attached to a button by means of eyes, substantially as described and shown.

**No. 32,694. Water Tube Boiler.***(Chaudière tubulée.)*

John Wood, Jr., Conshohocken, Penn., U. S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination in the water section of a steam boiler, of the cylinders A, having convex heads *b*, provided with man-holes *d*, the tube-sheet *c*, having holes *g*<sup>1</sup> drilled therein in staggered form, the tubes B connecting said cylinders, having their ends expanded in said holes, and brace-rods H extending through the inner surface of said tubes and connected to said heads, substantially as described. 2nd. The combination, in a steam boiler, of the steam-drum E, the cylinders A, having convex outer heads *b*, formed with man-holes *d* in their centers, cover plates *e* for said convex heads, the tube sheets *c*, having holes *g*<sup>1</sup> arranged in staggered series therein, tubular necks D connecting said drum and cylinders, and a series of tubes B having their ends expanded in said holes, substantially as described. 3rd. The combination, with a steam drum E, having a convex head *E*<sup>1</sup>, provided with a man-hole, a removable cover-plate F therefor, and means for securing said plate to said head, of a steam boiler proper, consisting of the barrel *a*, convex heads *b*, having man-holes *d* formed in the centres thereof, the removable plates *e* for said man-holes, means for securing said plates to said heads, the tube-sheets *c* forming the inner heads of said barrel, and having holes *g*<sup>1</sup> arranged therein in staggered series, the tubes B having their ends expanded in said holes and connecting said sheets, the stay-rods H having cross-feet *m* extending through a suitable number of said tubes and rigidly secured to the inner sides of said convex heads, and necks D connecting said steam drum and boiler, substantially as described.

**No. 32,695. Cleat. (Taquet.)**

John W. Foran, St. Johns, N.F.L., 2nd November, 1889; 5 years.

*Claim.*—1st. In a cleat, the combination, with a base, having a longitudinal slot and a rigid arm at one end of the said slot, of an angular arm pivoted at the end of the slot, opposite the rigid arm, and provided with a downwardly-projecting lug on its horizontal member, and a centrally-pivoted and spring-pressed lever, having an inwardly-extending end engaging the lug of the horizontal member of the angular arm to hold the said arm in position, substantially as herein shown and described. 2nd. In a cleat, the combination, with a base, provided with a central slot and an end aperture aligning said slot, an arm integral with the base at one end of the slot, and a second aligning arm pivoted to the base near the opposite end of said slot, provided with a horizontal arm having a downwardly-projecting lug, of a lever pivoted beneath the base, engaging the lug of the pivoted arm, a second lever projecting through the base connected with the first lever, an angle-arm detachably secured to the projecting lever and a plate adjustable in said arm, as and for the purpose specified. 3rd. In a cleat, the combination, with a base provided with a central slot, an aperture at one end in alignment with said slot, a fixed arm adjacent to one end of the slot, and angular arm pivoted near the opposite end of the slot, having a downwardly-projecting lug adapted to enter the end aperture of the base, of a spring-actuated lever pivoted beneath the base, having an end extension engaging the lug of the pivotal arm, a second lever projecting outward from the base linked to the first lever, and means, substantially as shown and described, for tripping the said outwardly-extending lever, as and for the purpose specified.

**No. 32,696. Churn. (Baratte.)**

William H. Wells, Evershot, Eng., 2nd November, 1889; 5 years.

*Claim.*—A churn, composed of a frame, to which a revolving or oscillating motion can be imparted, and carrying two or more jars, having wide open mouths closed by readily removable lids, substantially as described.

**No. 32,697. Bottle Stopper.***(Bouchon de bouteille.)*

John H. Christman, Samuel S. Ruston and Jessie A. Redfield, Syracuse, N.Y., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with the bottle and its stopper, of a bail formed with a rigid cross-bar integral with the arms of the bail, a cam pivoted at right angles and at two points respectively at the end portions of said cross-bar, and a lever extending from one of the pivotal portions of the cam, down along one of the arms of the bail, and adapted to interlock with said arm at the side of the bottle, substantially as described and shown. 2nd. The combination, with the bottle and its stopper, of a bail pivoted to the bottle, a cam pivoted to said bail and connected to the stopper, and a lever attached to said cam and having its free end adapted to interlock with one of the arms of the bail, as set forth and shown. 3rd. The combination, with the bottle and its stopper, of a bail pivoted to the bottle, and a wire wound around the cross-bar of the bail, at opposite sides of the centre of its length, and bent intermediately into an offset, and connected thereby to the stopper, and one end of said wire extended along the side of one of the arms of the aforesaid bail, and terminated with a lateral bend adapted to interlock with said arm of the bail, substan-

tially as described and shown. 4th. The improved bottle-stopper attachment, consisting of the bottle formed with the sockets *a*, *a*, the bail *b* having its ends inserted in said sockets, a wire wound into coils *c*, *c*, embracing the cross-bar of the bail and bent intermediately into the shape of the offset *c*<sup>1</sup>, and having the extension *d* along the side of one of the arms of the bail, and terminating with the lateral bend *e*, adapted to interlock with said arm of the bail, and the stopper *h* hung on the aforesaid offset *c*<sup>1</sup> substantially as described and shown.

**No. 32,698. Combined Hat and Umbrella Stand and Folding Screen.***(Porte-manteau, porte parapluie et écran pliant combinés.)*

Frank J. Darlington and Albert Peardon, Toronto, Ont., 2nd November, 1889; 5 years.

*Claim.*—As a new article of furniture, a hat-stand A extending above the ornamented chamber B, designed to receive the folding screen C, and having an umbrella stand E located on one or both sides of the chamber B, substantially as and for the purposes specified.

**No. 32,699. Lasting and Sole Laying Machine. (Machine à enformer et à poser les semelles.)**

Aubrose Eastman, in trust, (assignee of Charles T. Wood), Boston, Mass., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. A lasting machine having toothed jaws and plates mounted on sliding blocks, to admit of their being moved toward and from the work, and a compressible frame, substantially as described, placed inside the upper on the inside, to co-act with said jaws and plates in gripping the upper and drawing it in over the edge of the insole, substantially as shown and described. 2nd. A lasting machine provided with horizontally movable cam-actuated sliding blocks, arranged to approach and recede from the heel and toe and sides of a shoe, in combination with a pair of serrated jaws and a pair of smooth jaws pivoted to the heel and toe blocks, said serrated and smooth jaws being adapted to operate independently of each other and with a serrated plate, and a smooth plate carried by each of the sliding side blocks, the said serrated plate and smooth plate being movable independently of each other, and the said smooth jaws and plates being adapted to impinge against the upper inside of the edge of the sole of the last, whereby the upper after it has been drawn over the edge of the sole of the last by the serrated jaws and plates will be held in position by the said smooth jaws and plates after the serrated jaws and plates have been disengaged therefrom, substantially as set forth. 3rd. The combination, in a lasting machine, with the cam-actuated sliding blocks D<sup>1</sup>, of toothed plates *a*<sup>1</sup> mounted on said blocks, the bevelled-top bolts *a*<sup>2</sup> and their levers, and actuating cams, for the purposes and substantially as set forth. 4th. The combination of the sliding block D<sup>1</sup>, the plates S<sup>1</sup> provided with apertures to receive the bolts *a*<sup>2</sup>, and having springs K<sup>2</sup> to retract said plates, and the plates V<sup>1</sup> rigidly secured to the sliding blocks thereon, substantially as shown and described. 5th. In a lasting machine, the combination, with the sliding blocks U, V, D<sup>1</sup>, of the plates *r*<sup>1</sup>, *j*<sup>1</sup> whereby, when the upper is drawn over the edge of the last, it is retained in position, substantially as shown and described. 6th. In a lasting machine, the combination, with the sliding blocks D<sup>1</sup>, of the upright bolts *a*<sup>2</sup> having bevelled tops and actuated in one direction by the lever *e*<sup>2</sup> and its actuating cam, and in the other direction by the spiral spring *c*<sup>2</sup>, of the toothed plates S<sup>1</sup>, having apertures to receive the bolts *a*<sup>2</sup>, substantially as shown and described. 7th. The combination, with the cam-actuated blocks D<sup>1</sup>, of the plate *r*<sup>1</sup> secured thereto, and the plates S<sup>1</sup> and mechanism for moving said plates S<sup>1</sup> toward and from the work, and a form placed inside the upper having yielding side pieces *r*<sup>2</sup>, substantially as shown and described. 8th. The combination, with the sliding blocks U, V, of the inner blocks T and their actuating cams, said blocks T being set in slots in the blocks U, V, having pins *f*<sup>1</sup> projecting into slots in the blocks U, V, said slots being provided with the springs *g*<sup>1</sup>, whereby, after the blocks U, V have been moved forward a sufficient distance, the further throw of the cam S<sup>1</sup> taken up by the inner blocks T, for the purposes and substantially as shown and described. 9th. The combination, with the sliding blocks U, V, of the serrated jaws *h*<sup>1</sup> and the plates *i*<sup>1</sup> pivoted thereto, substantially as shown and described. 10th. A lasting machine, provided with serrated jaws to operate upon the toe and heel of the upper, and correspondingly serrated blocks opposing said jaws inside the upper or top of the inner sole, each of said serrations being tapering, whereby the increasing fullness of the upper toward the edge thereof is gathered in evenly, and the upper at the edge of the lasting is left smooth, substantially as shown and described. 11th. The combination, with the cam-actuated sliding blocks U, V, of the serrated jaws *h*<sup>1</sup>, and the plates J<sup>1</sup> pivoted thereto, and the shears K<sup>1</sup> pivoted to the block V, substantially as shown and described. 12th. The combination, with the cam-actuated sliding blocks U, V, D<sup>1</sup>, and their actuating mechanism, and the lasting jaws and plates, of the yielding side pieces *r*<sup>2</sup>, and blocks S<sup>2</sup>, substantially as shown and described. 13th. In a lasting machine in which the shoe is placed between sliding blocks which carry the lasting jaws and plates, the combination therewith of the horizontally swinging arm *h*<sup>3</sup> pivoted to the frame of the machine, the vertically-moving lever *l*<sup>3</sup> pivoted to said arm *h*<sup>3</sup>, the uprights J<sup>3</sup> which slide in apertures in the arm *h*<sup>3</sup>, the rigid arm *n*<sup>3</sup>, the yielding side pieces *r*<sup>2</sup>, and blocks S<sup>2</sup>, whereby the side pieces and blocks may be placed accurately on the insole when in use, and when not in use may be raised and swung out of the way, substantially as shown and described. 14th. The combination, with the sliding blocks and their actuating cam, of the U-shaped strap H<sup>1</sup> which supports the jaok, the springs O<sup>2</sup>, and the wedges P<sup>2</sup>, whereby the shoe is forced upwardly as the upper is drawn over the last, thereby crowding the upper against the rigid plates *r*<sup>1</sup> and holding it secured in position, as set forth. 15th. The combination, with the sliding blocks D<sup>1</sup> carrying the folding plates R<sup>1</sup>, of the dogs *p*<sup>2</sup>

provided with the spring-actuated latches  $n^2$ , and the sole-laying pressure block  $N^2$ , having apertures to receive the said latches, substantially as set forth. 16th. The combination, with the sliding blocks  $D^1$  carrying the holding plates  $r^1$ , of the dogs  $P^2$ , the shafts  $I^1$ , the pawls  $r^2$ , the spring-actuated handles  $a^2$ , and the sole-laying pressing block  $n^2$ , substantially as set forth. 17th. In a lasting and sole-laying machine, the combination, with the sliding block  $D^1$ ,  $U$ ,  $V$ , of the plates or jaws  $J^1$  and  $r^1$ , the dogs  $p^2$ , the pressure block  $n^2$ , and the reciprocating head  $a^2$ , with which the said block is detachably connected, substantially as set forth. 18th. In a lasting and sole-laying machine, the combination, with the lasting mechanism, the sole-laying pressure block  $n^2$ , and the reciprocating head  $a^2$  by which said block is carried, of the sleeve  $m^2$  having the cam-projections  $k^1$ , the shipper lever  $p^1$ , and the bell-crank lever  $q^1$ , its upright  $p^2$  and stud  $n^1$ , which acts in a groove and slot in the face of the eccentric  $d^1$ , the eccentric  $d^1$  and its shaft, and the friction clutch  $k^1$ , whereby, as the cam projection moves under the lever  $J^1$ , the eccentric is unlocked and given one revolution, substantially as shown and described. 19th. The combination, with the lasting mechanism, of the serrated piece  $S$ , the vertically movable shaft  $L$  and mechanism for revolving the same, the gear  $r$ , and the treadle mechanism, whereby, as the treadle is depressed, the shaft is raised and the gear  $r$  thrown into contact with the piece  $s$ , for the purposes and substantially as described. 20th. The combination, with the blocks  $U$ ,  $V$ ,  $D^1$  and their jaws and plates  $J^1$ ,  $r^1$ , and the piece  $S$  for actuating said blocks, of the toothed lever  $a^2$  pivoted to a swivel set in the frame, whereby by the movement of the lever, the cam may be actuated and the blocks forced backward from the work freeing the same, substantially as shown and described. 21st. The combination, with the revolving table  $D$  provided with pins  $r^2$ , of the pivoted arm  $a^2$ , and the supporting arm  $D^2$ , having its horizontal portion bent upwardly, substantially as shown and described. 22nd. In a lasting and sole-laying machine, the combination, with a central standard having an annular groove or recess and an outwardly extending supporting rim secured to said standard, of a rotary table carrying on its upper side within its periphery a series of lasting devices, said table having a central sleeve received in said groove or recess in the said standard, a sole-laying apparatus also within the periphery of the said table, and operated from the same driving shaft or prime motor from which the said lasting devices are operated, and ball-bearings interposed between said rim and table outside of the said lasting devices and sole-laying apparatus, whereby the pressure of the sole-laying block will be properly resisted without straining the supporting bearings of the said rotary table, as set forth. 23rd. The combination, with the sliding blocks  $D^1$  carrying the holding plate  $r^1$ , and the sliding blocks  $U$  and  $V$  carrying the holding plates  $J^1$ , of the sole-laying pressure block  $n^2$  having the rib or projection  $a^2$ , to enter the channel in the bottom of the outsoles when the latter is being laid, substantially as set forth. 24th. The combination, with the serrated jaws and plates which act on the outside of the upper and their actuating mechanism, of the yielding frame located inside the upper, and consisting of the perforated side pieces  $r^2$  and the serrated side blocks  $S^2$  and their supports, substantially as shown and described. 25th. The combination, with the side pieces  $r^2$ , of the blocks  $S^2$ , the supporting springs  $c^2$ , and the pins  $d^2$  and their springs, substantially as shown and described.

**No. 32,700. Manufacture of Metal-Coated Tubing for Electric Wires.** (*Fabrication des tubes à couverture métallique pour les fils électriques.*)

Henry B. Cobb, Wilmington, Del., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The method of producing vulcanized gum tubing, which consists in incasing plastic gum tube, prepared for vulcanization in a flexible metal tube, introducing and retaining an expansible fluid in the bore of the tube, and coiling and immersing the whole in an open bath having a proper vulcanizing temperature, as set forth. 2nd. The method of producing vulcanized gum tubing, which consists in incasing plastic gum tube prepared for vulcanization in a flexible metal tube, introducing and retaining an expansible fluid in the bore of the tube, and coiling and immersing the whole in a bath of paraffine or similar oil, maintaining at a vulcanizing heat and contained in an unsealed vessel, as set forth. 3rd. The method of producing flexible vulcanized gum tubing with a continuous close coating of metal, which consists in forming a tube of plastic gum containing a vulcanizing substance in a usual manner, covering the tube while soft with a continuous casing of flexible metal, and immersing the whole in an open bath having a proper vulcanizing temperature, as set forth. 4th. The method of producing flexible vulcanized gum tubing with a continuous coating of metal, which consists in covering the formed plastic gum tube having mixed with its substance vulcanizing material, with a continuous casing of flexible metal, introducing and confining an expansible fluid in the bore, and immersing a coil of the tubing in an open bath having a vulcanizing temperature, as set forth. 5th. The method of coating the exterior surface of tubing formed of plastic material and thereby preparing it for vulcanization, which consists in moulding upon it a close-fitting metal shield and passing a fluid through the tubing while the shield is being formed thereon, substantially as described. 6th. The method of coating with metal the exterior surface of tubing formed of plastic material and thereby preparing it for vulcanization, which consists in melting the metal passing the tubing through a suitable die, forcing the metal into the die around the tubing and passing a suitable fluid through the tubing while the coating is being forced thereon, substantially as described. 7th. In a lead-press, the combination of a reciprocating lead-cylinder, a stationary hollow plunger in line with, and above the lead-cylinder, and a stationary mould above the plunger and communicating therewith, substantially as and for the purpose set forth. 8th. In a lead-press, the combination of a reciprocating lead-cylinder having a synclinal bottom, a stationary hollow plunger in line with, and above the lead-cylinder, and a stationary mould above the plunger and communicating therewith, substantially as and for the purpose set forth. 9th. In a lead-press, the combination of a reciprocating lead-cylinder  $G$ , a stationary hollow

plunger  $C$  in line with and above the lead-cylinder, a stationary chamber  $q^2$  above the hollow plunger and communicating therewith, tubes  $D$  and  $E$  leading horizontally into the sides of the said chamber, and coinciding at their bores near the centre thereof, the tubes  $D$  extending into the adjacent end of the tube  $E$ , and a bridge  $m^1$  in the chamber  $q^2$  over the openings in the plunger, substantially as described.

**No. 32,701. Roll Shutter List.**

(*Assemblage des lames de persiennes.*)

August Bockel, Erfurt, and Ernest Lochmann, Leipsic, Germany, 2nd November, 1889; 5 years.

*Claim.*—A slat for rolling shutters and similar use formed with a barrel head  $a$  along one edge, and an open channel  $b$  along the other edge, the said channel being adapted to hold and permit of movement, within it, of the head of a like slat fitted in it, substantially as described.

**No. 32,702. Bag Holder and Fastener.**

(*Accroche-sac et attache-sac.*)

Aloysius G. Blincoe, Loretto, Ky., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with the bag, of a suspension and fastening wire detachably secured to the mouth of the bag at one side thereof, and formed with eyes at its ends, substantially as set forth. 2nd. The combination, with a bag, of a suspending and fastening wire secured between its ends to the bag at its mouth, and having eyes at its ends, substantially as set forth. 3rd. The combination, with a bag of a U-shaped suspending and fastening wire secured between its ends to the bag at one side of its mouth, the ends of the wire being formed with eyes and projecting upward from the mouth of the bag, substantially as set forth.

**No. 32,703. Sash Fastener.** (*Arrête-croisée.*)

Lewis A. Brown, St. Louis, Mo. U.S. 2nd November, 1889; 5 years.

*Claim.*—The combination of the hook, the link, the staple and the sashes, said hook consisting of the base and the narrowed point and being secured to the sash, as described, said link having an extension and bolted, and provided with a handle, as described, and said staple consisting of a base and a raised cut bar, and being secured to the sash by means of the screw, substantially as described.

**No. 32,704. Truck Jack.** (*Cric de camion.*)

Beriah Riddell, Rugby, Tenn., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with a wheeled truck frame, having a windlass, of a hinged swinging jack, a head block sliding along and swinging with the hinged jack and provided with a foot piece and a hook for respectively engaging opposite ends of a barrel or other object, and a cord or cable connection between the windlass and head block, substantially as described. 2nd. A jack secured to a truck, and composed of the swinging jack frame 4, the head block 9, hook 10, foot 11 and the windlass end rope engaged with said head block, substantially as herein specified. 3rd. The combination with a truck frame, the jack 4 secured by the detachable hinge joint at the lower end, and a hinge brace at the upper end with windlass and cord attachment, whereby said jack may be attached or detached from the truck frame, substantially as specified.

**No. 32,705. Heating Apparatus.**

(*Appareil de chauffage.*)

Edmund R. Ware, Chicago, Ill., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, in a heater, of a dome-shaped combination chamber, having a substantially continuous inner surface, a fluid fuel supply pipe, an inlet for the admission of air to the combustion chamber, and an outlet for the waste products of combustion, said outlet being located below the plane of ignition of fuel, whereby the waste products of combustion are compelled to pass out below the plane of ignition of fuel, substantially as set forth. 2nd. The combination, in a heater, of combustion chamber, a boiler surrounding the combustion chamber, a heating chamber outside of the boiler, a fluid supply pipe, an air inlet and an outlet for the waste products of combustion, said outlet being located below the plane of ignition of fuel, substantially as set forth. 3rd. The combination, in a heater, of a boiler provided with an inner heating chamber, a heating chamber outside of the boiler, a passage for the products of combustion from the lower part of the inner chamber to the outer chamber, a fluid fuel supply opening into the inner chamber, an inlet for the admission of air to the inner chamber, and a final outlet for the waste products of combustion, said final outlet being located on a level, or thereabouts, with the point at which ignition of the fuel occurs, substantially as set forth. 4th. In a heater, the combination, with the boiler support and the fluid fuel supply, the dome-shaped boiler, provided with an internal combustion chamber, having a substantially continuous inner surface and arranged with its lower edge above the boiler support, of the enclosing casing, whereby there are formed two chambers below the boiler for the products of combustion from the combustion chamber, substantially as set forth.

**No. 32,706. Manufacture of Hook Nails or Spikes and Machinery therefor.**

(*Fabrication des clous barbelés et machinerie pour cet objet.*)

Wilhelm Boecker, Schalke, Germany, 2nd November, 1889; 5 years.

*Claim.*—1st. An improved manufacture of blanks for the production of hook nails or spikes, whereby bars of iron or of any other suitable metal are provided on one or on both sides, by means of roll-

ing, pressing, hammering, or by any other suitable operation, with bosses corresponding to the heads of the nails to be made, such bars being then divided by vertical cuts through the head, and by oblique cuts through the parts as herein described, with reference to Figs 2 to 8 of the drawings. 2nd. The formation into hook-nails of the blanks referred to in the preceding claim, when previously heated to red heat, by pressing the head of the blank and simultaneously straightening the point of the same, while the blank is situated in a matrix carried by a disc B receiving a step by a step rotary motion by suitable mechanism, which disc contains a certain number of the said matrices, having a tapering external form and situated in correspondingly tapered sockets in the disc B, the said matrices being composed of several pieces and actuated by a fixed cam disc, so as to open out and allow the finished nail to fall out when carried to as the lowest position, substantially as herein described with reference to Figs 9 to 14 of the drawings. 3rd. In machines for producing nails or spikes from the blanks referred to in the first claim, the use of longitudinally divided matrices, arranged to open out, and having tapering side surfaces fitting in correspondingly tapered sockets of a revolving disc, for the purpose of forming by pressure, by means of the said matrices and a die, the head of the blank, and simultaneously straightening the point of the nail while the matrix is closed, substantially as herein described with reference to the drawings.

**No. 32,707. Horse Shoe for Roughing Horses.** (*Fer pour les chevaux qui s'en-taillent.*)

Henry W. Hooper, Brighton, Eng., 2nd November, 1889; 5 years.

*Claim.*—The combination, with a horse shoe, with suitable holes therein for the reception of the roughs, of the particular form of rough hereinbefore described and illustrated by the annexed drawings.

**No. 32,708. Heating Drum.** (*Poêle sourd.*)

Borelli D. Ingalls, Osman Shoemaker and Francis Shoemaker, Chatham, Ont., 2nd November, 1889; 5 years.

*Claim.*—A heating drum, consisting of outer drum G, inner drum D, air tubes C, lower and upper heads F, F' and drum heads B, B', all arranged as and for the purpose hereinbefore set forth.

**No. 32,709. Feed Water Heater, Cleaner and Mineral Separator.** (*Nettoyeur et réchauffeur de l'eau d'alimentation et séparateur de minéral.*)

John D. Sullivan and William W. Sutcliffe, New Orleans, La., U. S., 2nd November, 1889; 5 years.

*Claim.*—1st. A feed water heater cleaner and mineral separator, such as described, the combination of a boiler with a filter placed therein and the filtration of the water within the boiler, said filtering chamber being adjusted within the boiler by means of stirrups, for the purpose set forth. 2nd. A feed-water heater cleaner and mineral separator, such as described, the combination of a boiler with a filter placed therein, the filtration of the water within the boiler by means of a filtering chamber placed therein, the perforated pipe running under a filtering plate and connecting with blow-off pipe F, for the purpose set forth. 3rd. A feed-water heater, cleaner and mineral separator, such as described, the combination of a boiler with a filter placed therein, the filtration of the water within the boiler, by means of a filtering chamber placed therein, the feed-water pipe leading under filtering plate and connecting with perforated pipe attached to blow-off pipe, for the purpose set forth. 4th. A feed-water heater, cleaner and mineral separator, such as described, the combination of a boiler with a filter placed therein, the filtration of the water with the boiler by means of a filtering chamber placed therein, the feed-water trough leading water, a sinuous course back to mud leg, for the purpose set forth. 5th. A feed-water heater, cleaner and mineral separator, such as described, the combination of a boiler with a filter placed therein, the filtration of the water within the boiler by means of a filtering chamber placed therein, the water trough with partitions and mineral chambers therein, for the purpose set forth.

**No. 32,710. Ore Concentrator.**

(*Concentrateur de minéral.*)

Thomas R. Garnier, San Jose, Cal., U. S., 2nd November, 1889; 5 years.

*Claim.*—1st. In an ore concentrator, the combination of the water reservoir, pulp receptacle, movable belt frame, belt rollers secured to the front and rear of said frame, endless belt travelling over said rollers, outer frame or support, and of the springs for holding the belt frame in position, substantially as and for the purpose set forth. 2nd. In an ore concentrator, the combination of the water reservoir, pulp receptacle, belt frame, belt rollers secured within said frame and at the front and rear thereof, endless belt travelling over said rollers at a gradual incline from the rear to the front roller, and of the front and rear inclined belt frame bottom, substantially as and for the purpose set forth. 3rd. In an ore concentrator, the combination of a water reservoir, pulp receptacle, endless travelling belt, movable belt frame, said frame being provided with belt rollers and having the front and rear inclined bottom, and of the herein described mechanism for imparting a rotary and longitudinal motion to the belt and belt frame, substantially as and for the purpose herein shown and described. 4th. In an ore concentrator, the combination of an inclined endless travelling belt with the double inclined floor, arranged to receive the separated portion of ore pulp from the two ends of the travelling belt and carrying the same in opposite directions. 5th. In an ore concentrator, the combination, with the belt frame mounted on yielding supports, of the belt rollers journal-

ed therein, of the double inclined bottom and of the endless belt running over the rollers at an incline, substantially as set forth. 6th. In an ore concentrator, the combination, with the movable belt frame mounted on yielding supports, of the reservoir, pulp receptacle, front and rear inclined bottom cross-bars secured to the bottom of said frame at the front and rear thereof, plates secured between said bars, the forward one of which is provided with a circular opening and the rear one with an elongated slot, outer frame or support, projecting pin or lug attached to the rear of the outer frame, engaging with the rear of said plates, crank-pin secured to the front of the outer frame by means of suitable hangers adapted to engage with the circular aperture formed in the front plate, gear-wheel secured to the lower end of the crank-pin engaging with the bevel wheel, and of the operating mechanism for imparting rotary motion to the crank, thereby causing a compound side and longitudinal motion to be imparted to the forward end of the movable frame, and a slight longitudinal rear movement, substantially as and for the purpose herein shown and described.

**No. 32,711. Appliance for Water Closet Cisterns.** (*Appareil pour les cisternes des lieux d'aisance.*)

Henry W. Garth and John H. Garth (assignees of John G. Smith), Montreal, Que., 2nd November, 1889; 5 years.

*Claim.*—As a new article of manufacture, a combined safe and support for closet cisterns.

**No. 32,712. Hammock or Camp Chair.**

(*Hamac ou chaise de camp.*)

George C. Bentz and Frank Riedle, Chicago, Ill. (assignees of Fay O. Farwell, Dubuque, Iowa), U. S., 2nd November, 1889; 5 years.

*Claim.*—In a hammock or camp chair, the combination, with a folding frame made of two converging sections pivoted at their centers, each centre being composed of two converging portions united at their apex, of a removable hammock suspended between such sections, substantially as and for the purposes set forth.

**No. 32,713. Wood Planing Machine.**

(*Machine à raboter le bois*)

MacGregor, Gourlay & Co. (assignees of Alexander G. Gourlay and Thomas C. Robertson), Galt, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. In a wood planing machine, the combination, with the driving mechanism of its feed rollers, of a tapered or cone-shaped pulley A, fixed to the shaft B, and the tapered or cone-shaped pulley C fixed to the shaft D, the two cone-shaped pulleys being connected together by the belt G, substantially as and for the purpose specified. 2nd. In connection with the feed roller driving mechanism of a wood planing machine, a tapered or cone-shaped pulley A fixed to the shaft B, and the tapered or cone-shaped pulley C fixed to the shaft D, the two cone-shaped pulleys being connected together by the belt G, in combination with the belt shifter H adjustably supported by the screw spindle T, arranged substantially as and for the purpose specified.

**No. 32,714. Clip for Grasping Plates, Saucers, Mirrors, and other objects of a Decorative or other nature and for Suspending the same on Walls and in like Positions.**

(*Câdre pour supporter ou suspendre les assiettes, soucoupes, miroirs et autres objets d'ornement.*)

Henry H. R. Chapman, Trowbridge, (assignee of Rudolph G. E. Lemprière, Bath), Eng., 2nd November, 1889; 5 years.

*Claim.*—The improved clip for grasping plates, plaques, mirrors and other articles, consisting of an india rubber band, or its equivalent, fitted with claws or hooks engaging when the band is stretched or in tension with the said articles at opposite points, and fitted also with rings, such as d and e, adjustably arranged on the band, the ring d for suspending the articles being passed below that part of the band which is contained within the locking ring e, substantially as hereinbefore described.

**No. 32,715. Machine for Repressing Brick.**

(*Machine à represser les briques.*)

Oliver Baird, Parkhill, and Jonas Cornell, Thetford, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. In a machine for the purpose described, the turn-table or carrier provided with the forms adapted to receive and carry the bricks, substantially as described. 2nd. The combination, with the stationary bed-plate, of the central post and turn-table supported thereon, and friction supports under the outer edge of the turn-table, a series of forms radially secured to the turn-table, and the locking dog, all combined to operate substantially as described. 3rd. In a machine for the purpose described, the combination, with the turn-table carrying the forms, of the press adapted to coincide with one of the forms and having the movable upper and lower die, and of a follower adapted to simultaneously coincide with one of the forms, substantially as described. 4th. In a machine for the purpose described, the combination of the turn-table carrying forms with the press adapted to coincide with one of the forms and carrying an upper and lower die, a follower adapted to simultaneously coincide with one of the forms, and a lubricating-well formed in said follower, substantially as described. 5th. In a machine for the purpose described, the combination, with the turn-table carrying forms, of the press adapted

to coincide with one of the forms, of the mechanism connecting the press, and the follower for simultaneous actuation to compress the brick in one form and expel it from another form, substantially as described. 6th. In a machine for the purpose described, the combination, with the turn-table carrying forms, of the follower adapted to coincide with one of the forms, and adapted to expel the brick therefrom, and the pallet swung on the lever mounted below said form, substantially as described. 7th. In a machine for the purpose described, the combination, with the turn-table carrying forms, of the press consisting of the vertical guide-bars slidingly secured in vertical bearings, the cross-head uniting the same at the upper end, the upper die carried by the sliding cross-head, and lower die secured to the cross-head fastened to the guide-bars, toggle-levers connecting the cross-head of the upper die with the cross-head uniting the guide-bars, and an actuating lever, substantially as described. 8th. In a machine for the purpose described, the combination, with the turn-table carrying forms, of the press provided with the actuating lever N, the follower adapted to coincide with one of the forms and carried by the cross-head R, the lever U<sup>1</sup>, the link U suspending the follower from the lever U<sup>1</sup>, and the wrist U<sup>11</sup> engaging in the slot in the lever U<sup>1</sup>, all arranged to operate substantially as described.

**No. 32,716. Apparatus and Process for Relighting the Flame of an Injector Burner.** (*Appareil et procédé pour raviver la flamme d'un foyer à injecteur.*)

Charles L. Goodridge, Portland, Me., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The herein described process of producing and sustaining an auxiliary flame for relighting a principal hydro-carbon or other flame, which consists in heating a mass of refractory material by placing it in contact with said principal flame and then conducted into contact with said refractory material, a substantially continuous supply of inflammable material independent of the main supply, substantially as shown. 2nd. The herein described process of producing and sustaining an auxiliary flame for relighting the principal hydro-carbon or other flame, which consists in placing a mass of refractory material in contact with said principal flame, and then continually dropping upon said refractory material a supply of inflammable material independent of the main supply, substantially as shown. 3rd. The herein described apparatus for relighting the flame of an injector burner, consisting of a fire pot having in the side thereof a slot or opening, a mass of refractory material placed adjacent to said slot or opening, a drip nozzle extending through the casing over said refractory material, a sight feed connecting said drip nozzle with an oil supply in combination, substantially as shown.

**No. 32,717. Transom Lifter.**

(*Mécanisme de ventilateur.*)

Charles C. Mitchell, Ann Harbor, Mich., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with a car having a series of ventilating-openings provided with pivoted shutters, of a longitudinal shaft provided with cranks occurring opposite the shutters and loosely connected therewith, a cog mounted on the crank, and a rack-bar mounted in ways and meshing with the cog, substantially as specified. 2nd. The combination, with a car provided with a series of ventilator-openings and with pivoted shutters mounted therein, and intermediate bearings, of a shaft mounted in the bearings and provided with cranked portions occurring opposite the shutters, links connecting the cranked portions, and cranked portions, a gear mounted on the end of the shaft and inclosed by a casing which is provided with ways, and opposite rack bars mounted in each side of the casing and meshing with the gear, and adapted to operate the same in different directions, substantially as specified.

**No. 32,718. Buggy Boot.** (*Coffre de voiture.*)

Philo M. Barnes, Lockport, N.Y., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. A buggy-boot consisting of an outer portion or body 1, 2, of waterproof fibrous material pressed into shape over a form, and strengthened by an inside lining of heavy canvas, provided with a covering over the canvas, substantially as described. 2nd. A buggy-boot consisting of the body waterproof portion 1, 2, formed without seams and secured by a metal frame, and a lining of canvas having a covering of cloth and provided with straps 3, substantially as described. 3rd. A buggy-boot consisting of the body portion 1, 2, formed without seams of wood pulp, and provided with a metallic strengthening-frame and a lining of heavy canvas on the inside, having a covering of cloth and having straps 3, substantially as and for the purpose described. 4th. In a buggy-boot, the combination of the body 1, 2 and 3, strengthening frame 5, canvas lining 6, covering of cloth 7, and straps 8, substantially as described.

**No. 32,719. Inhaler.** (*Inhalateur.*)

William W. Smith, Albany, N.Y., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. In an inhaler, a hollow tube in combination with oppositely located perforated disks and an intermediate brace extending from disk to disk, substantially as specified. 2nd. In an inhaler, a hollow tube in combination with oppositely located and bored corks, and an opposite intermediate brace provided with perforated disks at its ends bearing against the corks, substantially as specified.

**No. 32,720. Composition for the Relief and Cure of Dyspepsia, Indigestion, Heartburn, Flatulency, Dizziness, Pain and Distress after eating, and Vomiting caused by Food not Digesting in Man-kind.** (*Composition pour le traitement et la guérison de la dyspepsie, l'indigestion, la pituite, la flatuosité, l'étourdissement, la douleur et le malaise après avoir mangé, et le vomissement causé par les aliments non digérés.*)

Willard P. King, Truro, N.S., 2nd November, 1889; 5 years.

*Claim.*—A compound composed of bi-carbonate of soda, pepsin, subnitrate of bismuth, ginger, gentian root, and liquorice root, with water, substantially in the proportions and for the purposes set forth

**No. 32,721. Machine for Sewing Shoes.**

(*Machine à coudre les souliers.*)

Charles Culley, Toronto, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. A sewing machine for sewing with metallic wire, the particular kind of shoes known to the trade as turns, and for welt sewing, substantially as shown and described. 2nd. In a sewing machine for the purpose specified, the combination of the main shaft 3 supporting the grooved cam 4, suitably connected to the vertical arm of the bell-crank 7, secured to the main frame 1, and having in its horizontal arm a curved slot 10, having secured in it the bolt 11 securing the hinged connecting bar 12, connected to and operating the needle lever 13, vibrating on the fulcrum pin 14, operating in the end of main frame 1, said needle lever 13 containing the needle 16, all substantially as shown for the purpose specified. 3rd. In a sewing machine for the purpose specified, the combination of the main shaft 3, with the cam 5, supported on it and operating by friction, the traveller 18 suitably secured to the upper extremity of the feed-lever 19, vibrating centrally on the screw 21, securing said lever 19 to the main frame 1, said lever 19 operating the fulcrum pin 14, secured in the needle lever 13 rigidly and operating it, said lever 19 pressed outward at its lower extremity by the spring 20, substantially as shown and for the purpose specified. 4th. In a sewing machine for the purpose specified, the combination of the main shaft 3 with the cam 5, supported on it and operating by friction the traveller 18, suitably secured to the upper extremity of the feed-lever 19, vibrating centrally on the screw 21, securing the said lever to the main frame 1 by the bracket 22, said lever having secured to its lower extremity, the feed-regulator 24 suitably secured and adjustable by means of the slot 23 and operating the fulcrum pin 14, secured in the needle lever 13 and operating it, said feed-lever 19 pressed outward by the spring 20, substantially as shown and for the purpose specified. 5th. In a sewing machine for the purpose specified, the combination of the main shaft 3 having the cam 25 secured on its outer end, operating the block 30, secured on the side-bar 26 and through the bracket 27, suitably secured on the main frame 1 and guiding said slide-bar 26, operating vertically through the spring 31, compressed between said block 30 and the main frame 1, said bar having secured on its extremity, the rack 33 in mesh with cast on pinion 35, suitably secured in the presser foot, substantially as shown and for the purpose specified. 6th. In a sewing machine for the purpose specified, the combination of the main shaft 3 supporting the cam 6 operating the traveller 38 on lever 39, and maintained in contact by spring 40, connecting said lever 39, to main frame 1, said lever 39 supporting pawls 43 and 44, coupled together by bar 45 secured thereto, and all parts secured to, and supported by bracket 42 secured to main frame 1, said pawls 43 and 44 engaging the incline blocks 48 and 49 on presser bars 50 and 51, supported in hangers 56 and 57, and secured in contact with the shoe by springs 53 and 55, roller 54 on block 48, secured in contact with lever 39 by said spring 53, all substantially as shown and for the purpose specified. 7th. In combination with a sewing machine for the purpose specified, the feed-guide 36 formed with a notch down at its extremity and bevelled at one side to engage the shoe, substantially as shown and for the purpose specified. 8th. In a sewing machine for the purpose specified, a curved needle 16 having a transversely rounded groove extending across side at the suitable distance from the point, thence along the under side spirally or by twist, and terminating on the opposite side near the point, the said groove across the same forming a hook, substantially as shown and for the purpose specified.

**No. 32,722. Steam Generator.**

(*Générateur de vapeur.*)

William H. Rushforth, Rutherford Park, N.J., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, with a boiler, of a feed water pipe, a heating coil located in the smoke box entirely below the water line of the boiler, and connected at each end with the boiler by connections at different levels, and an inlet nozzle projecting into said coil, substantially as set forth. 2nd. The combination, with a boiler, of a feed water pipe, a continuous heating coil located in the smoke box and connected at its ends with the boiler below the water line, one of the bends of said coil being in one piece and having an opening communicating with said feed pipe, with a nozzle, substantially as set forth. 3rd. The combination, with a boiler, of a feed pipe, a heating coil connected with said boiler at each end, a nozzle projecting into said coil and communicating with said feed pipe, and a check valve on the inner end of said nozzle, substantially as set forth. 4th. The combination, with a boiler, of a feed pipe, a heating coil located in the smoke box and connected with the boiler through an elbow having a removable plug by the removal of which access can be had



to the boiler for cleaning or inspection, substantially as set forth. 5th. The combination, with a boiler, of an open mud catching pan located above the bottom of the boiler, a feed-pipe leading into the boiler with its discharge port over and higher than the bottom of said pan, and a heater intermediate said discharge port and the source of supply, substantially as set forth.

### No. 32,723. Sight for Fire Arms and Ordnance. (*Mire pour les armes à feu.*)

Robert Gaskin, Sr., Portland, N. B., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination, in a sight point for fire arms and ordnance, of a transversely slotted and recessed box frame or body piece, a sight fitted to traverse in the said slot, and a curved tube spirit level located in the recess parallel with the slot, and a graduated scale. 2nd. The combination, with a sight point, of a spirit level with curved tube incased in a tube open at one side and journalled in the said recess upon pivots, substantially as shown and described, whereby the said curved tube spirit level may be inserted or revolved, as set forth. 3rd. The combination, with a sight point, of a curved tube spirit level incased in a tube open at one side, and provided with central pivot holes at its ends, and two pointed screws in the ends of the recess fitted as pivots for the said tubes, substantially as shown and described, whereby the tube may be transversely adjusted, as set forth. 4th. The combination of the transversely bored and slotted box frame or body piece, the sight fitted to the slot, the curved tube spirit level loosely fitting the said bore, the plugs screwed with the ends of the bore and the pointed screws fitted through the said plugs for the curved tube spirit level, substantially as shown and described.

### No. 32,724. Fence Wire Stretcher.

(*Tendeur de fil de fer à clôture.*)

John Hunter, Kingston, Ont., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination of the two side bars K, rigidly secured together and provided with the points I, inclining inward and forward, the cylinder R journalled in the forward ends of the side bars, and having a shaft squared at both ends P, and further provided with a ratchet wheel G and a crank D, the cord or chain E secured at one end to the cylinder, and provided with a grab hook Y at the other end, and the claw-hook T freely midway between the two side bars, and having its point inward and forward, substantially as shown and described. 2nd. The combination, with the side bars K, having points I slanted inward and forward, of the hook T freely hung midway between the side bars, and having its points slanted inward and forward, as shown and described.

### No. 32,725. Car Brake. (*Frein de char.*)

James F. Durkin, Scottdale, Penn., U.S., 2nd November, 1889; 5 years.

*Claim.*—1st. The combination of the brake beams C, the springs F connecting the same, the lever pivoted on one of the beams C, the link connecting the lower end of the lever with the other beam C, and the sliding push bar having its inner end pivoted to the upper end of the lever projecting forward beyond the end of the car, as set forth. 2nd. The combination of the brake beams, the lever pivoted thereto, the push-bar pivoted to the lever, the bumper head pivoted to the end of the push-bar, and the rock-shaft adapted to act on said bumper-head, as set forth.

### No. 32,726. Boot Upper. (*Oreille de bottine.*)

Isaac D. Thurston, Montreal, Que., 2nd November, 1889; 5 years.

*Claim.*—1st. As an improved article of manufacture, a boot upper cut integrally from a piece of leather, said upper having two lacing edges *a*, and two seaming edges *b*, *b*, so that when the seaming edges are sewed together, the upper will have but one seam only, namely, from the junction of the lacing edges downwardly and rearwardly, as set forth. 2nd. A front laced boot, having an upper in one piece, said upper having a seam *c* on one side only of the boot, namely, from the junction of the lacing edges downwardly and rearwardly, as set forth.

### No. 32,727. Harrow. (*Herse.*)

Charles La Dow, Albany, N.Y., U.S., 4th November, 1889; 15 years.

*Claim.*—1st. A harrow frame, composed of beams of zig-zag shape, as shown, for instance, by *a*<sup>1</sup>, *a*<sup>2</sup>, with the parts *a*<sup>1</sup> of adjoining bars adjacent to each other, and harrow teeth adjustably secured between the adjacent faces and having direct contact with said faces. 2nd. The combination of the zig-zag channel-iron bars and teeth clamped by their edges between adjacent faces of said bars. 3rd. A harrow frame, composed of a series of zig-zag channel-iron bars, having teeth clamped between adjacent vertical faces of said bars by horizontal bolts *b*, substantially as set forth. 4th. The combination of the harrow sections A, A, hinged together in the central draft line, a whiffletree and three draft links, one applied in the line of the hinge, and one to each side section, the three links being of equal length. 5th. The channel frame bars having notches *a*<sup>2</sup> in their flanges, in combination with curved harrow teeth, whose edges are clamped in said notches, the notches being adapted to permit the curved teeth to slide therein, so as to adjust their pitch relatively to the frame. 6th. The combination, with an arched spring harrow tooth, of a frame or tooth support adapted to permit both the horizontal and vertical arrangement of the tooth relatively to said frame, whereby the frame may be given either a high or low position with reference to the point of the tooth. 7th. The combination of a harrow frame, composed of bars secured to each other by their adjacent vertical faces, and spring harrow teeth clamped by their edges directly between said vertical faces, and having the pitch of the teeth adjustable relatively

to the frame. 8th. The combination of a harrow frame, composed of angular channel bars, and harrow-teeth having longitudinal portions adapted to be secured lengthwise between the ribs of the frame and bolts for clamping the parts together. 9th. In a harrow, the beams A and B contributing jointly to form longitudinal bearings for the longitudinal portions of the spring teeth, in combination with means adapted to permit the teeth to slide longitudinally relatively to said bearings. 10th. In a harrow, the frame beams A and B adapted to have direct contact with, and grasp and hold the heel of a spring tooth between said beams, in combination with means adapted to permit said teeth to be set on various angles of inclination relatively to said beams. 11th. A harrow, having frame beams bent, substantially as described, in combination with spring teeth supported at the points where said beams are attached to each other. 12th. A harrow frame, composed of metal bars, and having the teeth attached directly between said bars, so that the spines thereof form a continuous longitudinal metal bearing for the edges of the teeth, in combination with a bolt, which clamps the bars and teeth together. 13th. The square bolt head, in combination with the ribs of the frame to prevent the bolt turning. 14th. A harrow tooth, curved substantially as shown, in combination with frame bars converging towards the tooth to form a seat for its edges, and then diverging so that the front and rear parts of the tooth are clear of the bars. 15th. A harrow frame carrying spring teeth, and having all its frame bars at an equal distance from the ground, and adapted to fold one section upon the other by means of the hinge *a* between said sections, in combination with spring teeth which yield sidewise and interlace when folded, all parts of the frame to abut when folded, substantially as described. 16th. A harrow frame, having a longitudinal fastening for the longitudinal part of the curved spring tooth, and also a vertical fastening for the vertical portion of said tooth. 17th. A harrow frame, having two longitudinal ribs on its tooth bearing beams, in combination with a notch formed in each of said ribs, said notches being out of a vertical line with each other, for the purpose of holding a harrow tooth in said notches at an angle to the frame.

### No. 32,728. Skate. (*Patin.*)

John H. Young, Concord, N.H., U.S., 4th November, 1889; 5 years.

*Claim.*—1st. The combination of a sole-plate, having a transverse depression for the reception of the adjustable sole-clamps, the said adjustable sole-clamps provided each with an upward projecting lug at or near their inner ends, an adjusting plate adapted for longitudinal movement, and having oppositely-inclined slots for the reception of the lugs of said adjustable sole-clamps, their inner ends being nearer together than their forward ends and suitable operating mechanism for the said adjusting plate, substantially for the purpose set forth. 2nd. In adjusting mechanism for skates, a threaded actuated lever having its forward end swivelled to the mechanism for operating the sole-clamps, and its threaded portion connected to an adjustable heel-clamp, whereby said clamps are adjusted to a boot by the rotation of said lever, and clamped thereon by a swinging movement of the same to a position parallel with the skate runner. 3rd. The combination, with a plate for actuating the sole-clamps and an adjustable heel-clamp, of a threaded actuating lever and a swivelled arm connecting the threaded portion of said lever with said adjustable heel-clamp, substantially for the purpose set forth. 4th. In clamping mechanism for skates, an arm or link for connecting the actuating lever with the adjustable heel clamp, having at one end a suitable hook for the reception of the free end of said lever, substantially for the purpose set forth. 5th. In clamping mechanism for skates, the combination, with an actuating lever having a threaded portion, of an arm or link having at one end a swivelled nut fitting the thread on said lever, its opposite end being attached to an adjustable heel clamp and provided with a suitable hook for the reception of the free end of said lever, all for the purpose described.

### No. 32,729. Manufacture of Telegraph Poles, Columns, Pillars, Flagstuffs, Signal Posts for Railways, Fence Posts and other Posts, Rolls or Rollers, for various Purposes. (*Fabrication des poteaux de télégraphe, colonnes, piliers, mats de pavillons, poteaux de signaux pour les chemins de fer et autres, pieux de clôtures, rouleaux pour des fins diverses.*)

David Wilson, Grays, Eng., 4th November, 1889; 5 years.

*Claim.*—1st. In the manufacture of columns, pillars, flagstuffs, signal posts for railways, fence posts and other posts, and rolls or rollers for various purposes, a filling of concrete or cement introduced into the hollow parts of the said articles. 2nd. In the manufacture of columns, pillars, flagstuffs, signal posts for railways and the like, first forming a core of wire netting or a skeleton metal frame of the general figure of the pole required, then coating such core or frame on both sides with the cement or concrete, and finally filling the hollow parts with cement or concrete, for the purpose set forth.

### No. 32,730. Tongue Depressing Insufflator.

(*Instrument d'insufflation pour déprimer la langue.*)

Joseph D. Osborne, Newark, N.J., U.S., 4th November, 1889; 5 years.

*Claim.*—1st. The combination with an insufflator, of a spoon-shaped tongue depressor curved downwardly at its outer end, and attached tangentially to the nozzle of the insufflator. 2nd. The combination, with the curved tongue depressor *b*, having a polished surface to operate as a reflector, of the insufflator tube having a flattened nozzle provided with the central depression *c*, forming the outlet channels *d*, *d*, and attached tangentially to the convex side of the tongue depressor.



**No. 32,731. Road Cart.** (*Désobligeante.*)

Charles C. Hayes, Penn Yan, N. Y., U. S., 4th November, 1889; 5 years.

*Claim.*—In a road cart, the combination, with the axle and the shafts secured at their rear ends to said axle, and formed with a depressed portion between the ends, of the semi-elliptic spring pivotally secured at its ends to the rear ends of said shafts, the elliptic spring secured to the semi-elliptic spring, the semi-elliptic spring secured on top of the elliptic spring, the seat secured to the uppermost of said springs, and the foot-support secured at one end to said seat, and at its other end pivotally connected with the cross-bar of the shafts, substantially as and for the purpose specified.

**No. 32,732. Accumulation of Electrical Energy and Apparatus therefor.** (*Accumulation de l'énergie électrique et appareil pour cet objet.*)

Friedrich Marx, Berlin, Germany, 4th November, 1889; 5 years.

*Claim.*—1st. The herein described process of accumulating electrical energy, in which metals or solutions of metallic salts, with an addition of their equivalent acid and for the purpose of oxidation, submitted to the action of an electric current, and in which electrodes are used, made of a conducting non-metallic substance which will resist the action of the salt. 2nd. The herein described process of generating an electric current from a watery metallic salt solution, by the use of an electrode made of a conducting non-metallic substance, which will resist the action of the salt and a metal electrode. 3rd. The use of a metallic salt, either in a liquid or a solid form, charged with electrical energy by oxidation produced by means of an electric current, substantially as described.

**No. 32,733. Machine for Making Picket Fences.** (*Machine pour faire les clôtures de pieux.*)

Ezra E. Witter, Milford Centre, Ohio, U. S., 4th November, 1889; 5 years.

*Claim.*—1st. In a fence machine, the combination of a holder for holding two wires, means for inserting a pailing between the wires, and means for rotating the holder after the pailing has been inserted, substantially as and for the purpose set forth. 2nd. In a fence machine, the combination of one or more twisting wheels carrying each two strands of wire, means of inserting pulleys between the wires, and means for rotating the twisting wheels at the proper time, substantially as and for the purpose set forth. 3rd. The combination of the divided twister, a divided spindle on which said twister is mounted, and a divided journal bearing for said spindle, substantially as set forth. 4th. The combination of the divided twister, a divided spindle on which said twister is mounted, a divided journal bearing for said spindle, said separable frames on which said bearing is mounted, substantially as set forth. 5th. The combination of the divided twister, an apertured divided spindle on which said twister is mounted, a bobbin on each division of said spindle, a divided journal bearing in which said spindle is mounted, and means for controlling the separation of the parts of the twister, substantially as set forth. 6th. The combination of a divided shaft, a spool and duct for each division of the shaft, a divided bearing for said shaft, and a stationary and movable frame, to which the parts of the journal box are secured, substantially as set forth. 7th. The combination of a divided shaft, a duct and spool for each part of said shaft, a divided journal bearing in which the shaft is journaled, flanges on said shaft overlapping the ends of said bearing, and means for separating and bringing together the parts of the shaft, substantially as set forth. 8th. The combination of the divided twisters, the rods 11, 12, and the regulating screws 19, substantially as and for the purpose set forth. 9th. The combination of the intermeshing divided twisting wheels 4, 5, the divided spindle 8, 8, having bearing 9, 9 overlapping annular flange 15, and bobbin holders 6, the boxes 10 on the bearings, the stationary rod 11, the movable rod 12, the lever for moving the movable rod, and the gearing for turning the twisters, all substantially as and for the purpose set forth.

**No. 32,734. Substitute for Collars for Horses or other Animals.** (*Bricolage de harnais.*)

Alfred Mendel, Strehlen near Dresden, Germany, 4th November, 1889; 5 years.

*Claim.*—A back-collar for draught animals consisting of a part *a* or *d*, resting against the chest and wholly or partly against the shoulder blades of the animal, and a saddle or saddle-like carrier *c*, which rests on the back of the animal and wherein the part *a* or *d*, resting against the chest or shoulders, may be movably connected with the carrier *c*, substantially as set forth.

**No. 32,735. Spectacle or Eye Glass.**

(*Binocle ou monocle.*)

August Mork, Jr., Warren, Penn., U. S., 4th November, 1889; 5 years.

*Claim.*—1st. The bifocal lens herein described, consisting of the lens 7 having a far-vision field of crescent form, supplemented by a lens 8 of near-vision, having its dividing-line 9 bounding the concave line of the crescent field, and terminating at the horns 10, 10 thereof, as shown and for the purpose stated. 2nd. The bifocal lens herein described, consisting of the lens 7 of far-vision, supplemented by a segmental lens 8 of near-vision, having about one-third the area of the far-vision lens, and tapering to a feather-edge at the surface segmental line 9, substantially as described for the purpose stated. 3rd. In spectacles, the combination of the usual far-vision lens 7

with a relatively small near-vision lens having a conical face, and supplementing the lower portion of the lens 7, substantially as described. 4th. The combination, with the usual far-vision lens having one of its faces ground conical, of a relatively small near-vision lens, which is ground to deflect rays of light toward its centre, substantially as described for the purpose specified. 5th. In bifocal lenses, the far-vision lens 7 supplemented by a near-vision lens 8, tapering to a feather-edge at the dividing-line, as described and for the purpose specified.

**No. 32,736. Automatic Inter-Changeable Car Coupler.** (*Attelage de char alternatif automatique.*)

Frank A. Fox, San Francisco, Cal., U. S., 4th November, 1889; 5 years.

*Claim.*—1st. In a railroad car coupler, the draw-bar A and coupler head D made in separate parts, and united together by bolts or other interlocking devices, substantially as described. 2nd. In a railroad car coupler, the draw-bar A made separate from the coupler head, and having extensions C, C' projecting from its front, and in combination with recesses or chambers D in the shank of the coupling head, to receive said extensions, and a belt *e* for connecting them together, substantially as described. 3rd. A car coupler adapted to interlock, by engagement of the grooved end of the tail-piece of the swinging knuckle joint, with the sliding combination pin upon the lateral throw thereof, substantially as and for the purpose herein shown and described. 4th. The combination, with the swinging knuckle joint having rearwardly extending tail-piece provided with an end groove, of the slide locking pin adapted to be raised by the inward throw of a tail-piece and by gravity to fall and interlock with the grooved portion of the tail-piece, substantially as herein shown and described. 5th. A car coupler having a swinging knuckle joint and a rearwardly extending tail-piece, provided with a T-shaped groove adapted upon the lateral movement thereof, to come into contact and interlock with a sliding coupling pin, substantially as herein described. 6th. In a car coupler, the combination, with the heads thereof, of the swinging locking bars having rearwardly extending tail-pieces, said pieces being provided with an end groove or opening of greater diameter at its rear than front end, of the T-shaped locking pin, adapted upon the rear lateral throw of the tail-piece to interlock with the grooved seat formed in the end of said pieces, substantially as set forth. 7th. In a car coupler, the combination, with the swinging locking bars, provided with the rearwardly extending tail-pieces having the end grooves formed therein, of the locking pin having the enlarged upper portion adapted to be raised by the lateral rear throw of the tail-piece of the swinging locking bar, and to fall by gravity and to interlock with the grooved seat of said tail-piece, substantially as set forth. 8th. In a car coupler having an opening formed through one of its side walls, of the swinging locking bar or knuckle joint having a rearwardly extending tail-piece provided with the inner curved or bevelled end wall, of a groove formed in the end of said tail-piece of greater diameter at its rear than front, and of the locking pin working in the opening of the coupler head conforming, for a portion of the length, to the form of the end groove, having the curved or bevelled terminus similar to the curved or bevelled end of the tail-piece, said pin being adapted to be raised upon the internal throw of the swinging locking bar and to fall by gravity into the grooved seat of the tail-piece, so as to automatically interlock therewith, substantially as set forth. 9th. In a car coupler, the combination, with the hinged locking bar or knuckle joint, provided with the rearwardly extending tail-piece, having the curved or bevelled end projecting shoulder, recess formed in the inner wall of the coupler head, within which said shoulder fits, and of the gravity locking pin, said pin having the upper enlarged portion terminating in a curved or bevelled shoulder adapted to conform to the shape of the grooved opening, said pin being adapted to be raised by the inward throw of the tail-piece end by gravity, to interlock with the grooved seat of the tail-piece, substantially as herein described and set forth. 10th. The combination, with the coupler head of a car coupler, of the locking pin working in an opening formed in the coupler head, said pin having the enlarged upper portion terminating in a curved bottom of varying thickness, and reduced lower portion end of the hinged knuckle joint having the rearwardly extending tail-piece provided with an end groove adapted to interlock with said locking pin upon the lateral movement thereof, substantially as set forth and described. 11th. A car coupler having a hinged knuckle joint and a swinging tail-piece adapted to interlock by engagement of the grooved end of the tail-piece with the vertically movable pin upon the lateral throw thereof. 12th. In a railroad car coupler having a hinged locking bar E, provided with a tail-piece E', the tumbler H pivoted in a chamber or recess in the coupler head, and having a notch *g* in its front edge adapted to receive the end of tail-piece E', and a notch *k* in its rear end to receive a key or pin L, substantially as specified. 13th. In a car coupling device, a separable coupling head having a chamber in line with the tail-piece of the locking bar, and a tumbler pivoted in said chamber or recess, the front end of which engages the rear end of the tail-piece when the locking bar is closed, while its rear end is provided with means for locking it in position when closed, substantially as described. 14th. In a car coupling device, a locking bar having a tail-piece, a tumbler mounted on a centre bolt in a recess or chamber in the bumper head, adapted to receive the end of the tail-piece and swing it into a locked position, a key or pin adapted to lock the tumbler in its locked position, and a lever adapted to raise the pin and release the tumbler and tail-piece, substantially as described. 15th. In a car coupling device, a tumbler and locking pin having the centre bolt on which the tumbler moves, and the locking pin in line with the centre line of the draw-bar, substantially as described. 16th. A locking mechanism for car couplers having two points of resistance in line with each other and with the draw-bar, and one point of resistance outside of said line, as set forth. 17th. In a car coupling device having a locking tumbler, and a pin for engaging a notch in the rear end of the tumbler, the tumbler having one side bevelled, substantially as and for the purpose described.

**No. 32,737. Belt Fastener.** (*Agrafe de courroie.*)

Willard N. Packer, Cleveland, Ohio, U.S., 4th November, 1889; 5 years.

*Claim.*—1st. A belt fastener having a central web and a series of fingers on either side, with shoulders on the fingers corresponding to the thickness of the belt, the tips of the fingers projecting outward from the body, substantially as set forth. 2nd. The belt fastener herein described, having opposite rows of fingers, the body of each finger and the extremity thereof being in different but substantially parallel planes with a shoulder, offset between the body and extremity corresponding to the thickness of the belt, and a web connecting the fingers, substantially as set forth. 3rd. The belt fastener herein described, consisting in a metallic belt fastener formed in a single piece with a web at its centre, and a series of fingers projecting oppositely from said web, each finger having a shoulder near its ends at about right angles to the web, and the plane of the finger above and below the shoulder, substantially as set forth. 4th. A belt fastener provided with a web along its centre, and a series of fingers at each side of the web having their extremities pointed, and the points turned inward substantially at right angles to the plane of the fingers, substantially as set forth. 5th. The belt fastener herein described, having a series of fingers, the body and the extremity of each finger being in substantially parallel lines with a shoulder between, and the tips of the fingers extending outward from the body, in combination with the end of a belt having the extremities of the fingers in contact therewith, substantially as set forth.

**No. 32,738. Boot and Shoe.** (*Chaussure.*)

Joseph Fortin, St. Henri, Que., 4th November, 1889; 5 years.

*Claim.*—A boot or shoe having its upper A made out of one piece joined at the top of the foot by a straight central overlapping and cemented joint, said joint strengthened by the covering piece B secured by stitching and with or without rivets, substantially as set forth.

**No. 32,739. Process for Waterproofing and Preserving Textures and other Materials.** (*Procédé pour imperméabiliser et conserver les tissus et autres matériaux.*)

Charles F. Hime, London, and John H. Noad, East Ham, Eng., 4th November, 1889; 5 years.

*Claim.*—The herein described process for waterproofing and preserving textures and other materials by treating them with a solution of cellulose and ammonia zinc, prepared by adding zinc to a solution of cupro-ammonia and cellulose.

**No. 32,740. Stove Pipe Damper and Ventilator.** (*Clé de tuyau de poêle et ventilateur.*)

John W. Campbell, Toronto, Ont., 4th November, 1889; 5 years.

*Claim.*—1st. The within-described damper, consisting of flange or rim A with flange or rim B, with handle C, all substantially as and for the purpose specified. 2nd. Tube F, all substantially as and for the purpose specified. 3rd. Collar G, with handle H, and opening G, all substantially as and for the purpose specified.

**No. 32,741. Welding Compound.**

(*Composition pour souder.*)

Hiram G. Hicks, Worcester, Mass., U.S., 4th November, 1889; 5 years.

*Claim.*—A compound for use in welding, refining or treating steel, composed of borax, sal ammoniac, carbonate of iron and plaster Paris, combined in the proportions substantially as specified and prepared in the manner substantially as described.

**No. 32,742. Creamer.** (*Crémeuse.*)

Charles E. Bright, Brampton, Ont., 4th November, 1889; 5 years.

*Claim.*—A creamer, consisting of a can A, having a dished bottom B, with a screwed nozzle C fixed to it, designed to fit into an internally-screwed socket D, projecting through the bottom of the ice-box E, and having a cock F connected to it, a circular glass G inserted in the side of the can in such a position that, when the said can is screwed home, the said circular glass G shall be opposite to a circular glass H placed in the side of the ice-box E, substantially as and for the purposes specified.

**No. 32,743. Printing Press.**

(*Presse d'imprimerie.*)

William Dicks, Sr., Toronto, Ont., and Richard N. Morton, Brooklyn, N.Y., U.S., 4th November, 1889; 5 years.

*Claim.*—1st. An electrotype, or equivalent printing surface, supported by vertical adjusting mechanism contained in a box corresponding with an ordinary type block and similarly fitted into a chase, in combination with projecting pins or their equivalent, connected to the printing press in such a position that cranks projecting above the type surface and connected to the vertically-adjusting mechanism are brought in contact with the pins, so as to cause the vertical adjusting mechanism to operate, substantially as and for the purpose specified. 2nd. An electrotype B, or equivalent printing surface, supported on a frame D contained within a box A, and having wedge-shaped blocks E and F fixed to it, the frame G, having inversely wedge-shaped blocks F to support the wedge-shaped blocks E, in combination with the rod or pitman H connecting the frame D to the crank T, and of the rod or pitman M connecting the frame G to the

crank I, bell-cranks O connected respectively to the cranks T and L, and arranged to adjust the latter, substantially for the purpose hereinbefore described. 3rd. The electrotype B, or equivalent printing surface, supported on vertically-adjusting mechanism within the box A, which is fitted into the chase of an ordinary form, in combination with the inking rollers P located on one side of the impression cylinder R, and of the pins T, located one on each side of the impression cylinder R, and supported by the fender bars Q, in such a manner as to come in contact with cranks projecting above the type surface of the chase and connected to the adjusting mechanism contained in the box A, substantially as and for the purpose specified.

**No. 32,744. Journal Box.** (*Boîte de tourillon.*)

Thomas McGrath and D. Augustus O'Brien, Albany, N.Y., U.S., 4th November, 1889; 5 years.

*Claim.*—1st. A journal box, which comprises the following parts: a pedestal having a boss which contains an upper and lower spring-chamber, separated by an annular partition, the upper and lower ends of said boss forming seats, as herein set forth, said box being provided with a pendent centre bolt, and with a seat which is fitted to bear upon the upper seat of the pedestal boss, springs which are fitted in the upper and lower chambers of the pedestal boss to bear upon the annular partition and exert pressure against the journal box and clamping plate, a clamping plate provided with a seat that is fitted to bear against the lower seat on the pedestal boss, and a clamping mechanism whereby the seats of the journal box and clamping plate can be simultaneously drawn into contact with the seats of the pedestal boss, as and for the purpose herein specified. 2nd. A journal box, having on its lower side a bowl-shaped chamber for receiving a loosely-fitted centre bolt, and a seat which corresponds to the upper seat of the pedestal, in combination with a chambered pedestal containing springs, as herein described, a clamping mechanism, whereby the seats of the journal box and clamping plate can be simultaneously drawn into contact with the seats of the pedestal, and a centre bolt which is loosely fitted into the chamber in the lower part of the journal box and upon which the latter is fitted to rock, as and for the purpose herein specified. 3rd. In a journal box, the combination of a pedestal provided with a boss having upper and lower spring chambers that are separated by an annular partition, seats being formed on the upper and lower ends of said boss, and said spring chambers containing independently-acting springs, said box being provided with a pendent center bolt and with a seat that is fitted to bear upon the upper seat of the pedestal boss, a sliding clamping plate that has on its upper face a seat that is fitted to bear on the lower seat of the pedestal boss and on its lower face, a series of alternating indentations and planes, and a cam-ring having on its upper side a series of indentations and planes which correspond to and co-operate with the indentations and planes on the lower face of the clamping plate, as and for the purpose herein specified.

**No. 32,745. Car Coupling.** (*Attelage de chars.*)

Henry N. Sheffield and John K. Jamison, Seney, Ga., U.S., 8th November, 1889; 5 years.

*Claim.*—The combination, in a car-coupling, of the draw-head having vertical openings through its roof, on opposite sides of the pin opening the bolts inserted through said openings, having their inner ends flattened and perforated, the nuts on the upper ends of said bolts, the weighted gate having its upper edge provided with a seat e, and the notched arms G receiving the flattened ends f of the bolts, and the pivot pins inserted through said arms and the ends of the bolts, as set forth.

**No. 32,746. Cricket Bat.**

(*Batte de jeu de paume.*)

William Heighington and John B. Heighington, Toronto, Ont., 8th November, 1889; 5 years.

*Claim.*—1st. A cricket bat, composed of several sections compactly and solidly joined together, substantially as and for the purpose set forth. 2nd. A joint, composed of a groove C, having a V or wedge-shaped tongue D running longitudinally through it, and a tenon E having a groove F, corresponding to, and smaller than the tongue D, substantially as and for the purpose set forth. 3rd. The combination, in a cricket bat, of several sections A, the groove or channel C having a V or wedge-shaped tongue running longitudinally through it, and a tenon E having a groove F, corresponding to and somewhat smaller than the tongue D, substantially as and for the purpose set forth.

**No. 32,747. Printer's Copy Holder.**

(*Presse-copie d'imprimerie.*)

Edward Harmer, Ottawa, Ont., 8th November, 1889; 5 years.

*Claim.*—1st. In a printer's copy-holder, the graduated scale C and the rod B in combination, as set forth. 2nd. In a printer's copy-holder, the rod B and hooks D, combined substantially as hereinbefore shown and described, whereby the lower edge of the copy may be held, as set forth. 3rd. In a printer's copy-holder, the scale C and hook D, in combination, as shown, whereby an alignment of the matter in the copy may be preserved, as set forth. 4th. In a printer's copy-holder, the scale C, the rod B and hook D, substantially in combination, as hereinbefore set forth. 5th. In a printer's copy-holder, the scale C and hooks a, a, a, and hook D, combined substantially as hereinbefore shown and described, and as and for the purposes set forth. 6th. In a printer's copy-holder, the frame A having hooks a, a, a, and attachment F and rod B, all in combination substantially as and for the purposes set forth. 7th. In a printer's copy-holder, the frame A having lugs e and rod B, and graduated scale C, combined as hereinbefore set forth.

**No. 32,748. Folding Crate.** (*Manne en botte.*)

William Bruce, Wellsville, N.Y., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. As an improved article of manufacture, the herein described folding shipping box or crate, consisting of the bottom piece, the cleat or guard secured thereto, forming an abutment for the lower edge of the front piece and a guard for the end pieces when the box is collapsed, the end pieces hinged to said bottom piece by inwardly-opening hinges, and back piece connected to said bottom by outwardly-opening hinges, the top piece connected to said back piece by inwardly-opening hinges, the front piece connected to said top piece by outwardly-opening hinges, the hooks secured to the end pieces and engaging screw eyes in a top piece, and the side bolts for locking the front, back and end parts together, when the box is put together or closed, substantially as set forth. 2nd. As an improved article of manufacture, the improving of folding shipping box or crate herein described, the same consisting of the bottom piece, back piece, front piece and top or cover, said end pieces, back piece and front piece having angular notches upon their inner corners, so as to form a tight joint, substantially as set forth. 3rd. As an improved article of manufacture, the herein described folding shipping box or crate, having its sides formed of vertical slats or solid panels and horizontal connecting pieces, said vertical slats having bevelled ends terminating in shoulders, and the horizontal connecting pieces having registering inclines and shoulders, substantially as set forth. 4th. In a folding shipping box or crate, the combination of the end pieces having angular notches upon their inner corners, said end pieces consisting of vertical slats or solid panels, having opposite bevelled ends terminating in shoulders, and horizontal connecting pieces having registering inclines and shoulders, the bottom piece having its slats or solid panel and connecting piece constructed similar to the end pieces, the rear connecting piece thereof, however, being further provided with a lateral extension, the back piece having angular notches upon its corners, and consisting of the upper connecting piece provided with bevelled and shouldered inner face slats or solid panel, having opposite bevelled ends terminating in shoulders, and lower connecting piece, having bevelled inner face terminating in a reduced extended portion, the lower end of the vertical slats or solid panel of said back piece adapted to rest upon the rearward extension of the bottom piece, the top piece and the front piece having angular notches upon its inner corners, the slats or solid panel and connecting pieces thereof constructed similarly to the end pieces, substantially as set forth.

**No. 32,749. Journal Bearing.**(*Coussinet de tourillon.*)

Richard Beddall, Melford, Mass., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. A journal bearing, consisting of two separate parts, viz.: a body and a shell filled with babbett, held together, substantially in the manner shown and described. 2nd. A journal bearing, consisting of the body A, having recesses *a* and dovetail slots *b* at each end, and a shell B having flanges, small *e* and dovetail projections *f* to fit into the recesses *a* and slots *b*, substantially as shown and described. 3rd. A journal bearing, consisting of two parts, viz.: a body and a shell filled with babbett, the two being held together so that the shell may be removed when worn out and a new shell inserted into the body, substantially as set forth.

**No. 32,750. Gate.** (*Barrière.*)

Andrew Miller, Guntersville, Ala., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. The gate, formed of two horizontal metallic bars, provided at their axis ends with sleeves secured respectively thereto by brackets and bolts, a vertical end bar having ends overlapping the said horizontal bars, two parallel diagonal bracing bars secured each to the middle points of one of the said horizontal bars, substantially as described, a locking rod E provided with a head arranged to pass vertically through the middle of the said two horizontal bars, and the ends of the diagonal bracing bars, provided with a nut to bind said rod in its place, the stretching pieces I, J at the front and axis ends of the gate, and suitable wires answering the purposes of rails, in combination with the vertical rod A held in position by suitable bracing rods and forming an axis of movement for the gate, and the steady brace F provided with a sleeve *c*, as and for the purpose specified. 2nd. The combination, with the gate formed of two horizontal bars, a vertical overlapping end bar, two diagonal bracing bars, two vertical stretching bars, a vertical locking rod and sleeves secured to the axis ends of the horizontal bars, all arranged and secured in a manner substantially as described, and the axis rod or standard A pivoted in a suitable footing, of the sleeve *f* encircling the said axis rod, and the three bracing rods pivoted to the said sleeve and fixed to butts in the ground, as and for the purpose set forth.

**No. 32,751. Hot Water Furnace for Heating Buildings.** (*Calorifere à eau.*)

Malcolm Nicholson, Goderich, Ont., 8th November, 1889; 5 years.

*Claim.*—A hot-water heating furnace, consisting of outer and inner casings surrounding the water compartment A supported by stay bolts *b*, longitudinal and horizontal tubes *d*, *c*, grate *e* and the usual necessary apertures and attachments, all substantially as and for the purpose hereinbefore set forth.

**No. 32,752. Bed Bottom.** (*Sommier de lit.*)

Elias A. Cleaveland, Belvidere, Ill., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. The combination of the base frame, an adjustable head portion, detents rigidly fixed thereto and projecting laterally therefrom, ratchets fixed to the side of said base frame, and a fly pivoted above said ratchet and adapted to disengage the detent from the ratchet teeth, substantially as set forth. 2nd. The combination of the base frame, an adjustable head portion, braces connecting the head portion with the base frame, a ratchet fixed to the base frame, a detent fixed to the head portion, and a fly pivoted within the ratchet and having a bent end to disengage the detent from the ratchet teeth to permit the return of the detent, substantially as set forth. 3rd. The combination of the base frame, an adjustable head portion, braces connecting the head portion with the base frame, a ratchet fixed to the said base frame and consisting of the upper guide-bar and the lower bar formed with teeth, and a fly pivoted to the base frame above the ratchet, and provided with a bent end to disengage the detent from the ratchet teeth to permit the return of the detent, substantially as set forth. 4th. The combination of the base frame, an adjustable head portion, braces connecting the head portion with the base frame, a ratchet fixed to the said base frame, said ratchet provided with a guide-bar, and a fly provided with a bent-end and pivoted to the base frame above the ratchet, to disengage the detent from the ratchet and to permit its return thereto, substantially as set forth.

**No. 32,753. Spark Conductor.**(*Conducteur d'étincelles.*)

Kent H. Carper, Salem, Mass., U.S., 8th November, 1889; 15 years.

*Claim.*—1st. In a spark conductor, the flue extending along the top of the locomotive and each car, and the smoke stack having its upper end curved rearwardly and connecting directly with, and forming a part of the flue so as to provide a direct passage for the sparks and products of combustion, said smoke stack having a flaring mouth mounted on its outside and provided with an opening in its front side, combined with the conical lining mounted on the flaring mouth of the smoke stack and having its inner end extending through the opening in the front side of the smoke stack, for the purpose set forth. 2nd. A spark conductor provided with a foraminous top portion and a series of movable deflectors arranged above the same, substantially as described. 3rd. A spark conductor having a flue provided with a foraminous top portion, a frame extending above the foraminous portion, and a series of deflectors pivoted in said frame, and suitable means for operating the deflectors, substantially as described. 4th. A spark conductor having a flue provided with a foraminous top portion, a series of deflectors arranged above the foraminous top portion, and a slide adapted to close the top portion, substantially as described. 5th. A spark conductor having a flue provided with a foraminous top portion, a frame extending above the foraminous portion having curved ends to direct the smoke upwards, and a series of deflectors pivoted in said frame, substantially as specified. 6th. In a spark conductor, a flue composed of pipes secured together by hinges having removable pintles, whereby the pipes may be swung to either side of an engine, substantially as described. 7th. The combination, in a spark conductor, of a flue provided with a foraminous portion for the discharge of smoke and gases, and a hood or casing extending along the flue and adapted to receive said smoke and gases, as described. 8th. The combination, in a spark conductor, of a flue having a foraminous portion for the discharge of smoke and gases, and a hood extending along the flue and adapted to receive the smoke and gases and terminating in a pipe or tube, whereby the smoke and gases may be carried to a convenient point for discharge, as described. 9th. In a spark conductor, the combination of the flue provided with a foraminous portion, and a semi-cylindrical hood or casing arranged above the foraminous portion and extending along the flue and terminating in a suitable pipe or tube, substantially as described. 10th. The combination, in a spark conductor, of a section A<sup>1</sup> of the flue, provided with a foraminous portion, the portion B<sup>1</sup> of the semi-cylindrical hood or casing arranged above the foraminous portion and having its front ends slightly flared, the section A<sup>2</sup> of the flue and the portion B<sup>2</sup> of the cylindrical hood or casing having their front ends flared and adapted to receive the rear ends of the section A<sup>1</sup> of the flue and the portion B<sup>1</sup> of the hood or casing, as described. 11th. In a spark conductor, the combination, with the section A<sup>1</sup> of the flue and the portion B<sup>1</sup> of the hood or casing, of the section A<sup>2</sup> of the flue and the portion B<sup>2</sup> of the hood or casing having their front ends flared and adapted to receive the end of section A<sup>1</sup> and the portion B<sup>1</sup>, the upper portion of section A<sup>2</sup> of the flue being slightly flared and extending over the upper portion of the end of section A<sup>1</sup>, whereby the passages for sparks and cylinders and smoke and gases are separated at the junction of the sections, substantially as specified.

**No. 32,754. Hame Fastener.** (*Couplière d'attelles.*)

James S. Baker, Rochester, N.Y., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. The combination, with the slotted body A having hook D, of the toothed strap C, provided with hook D' the slotted lever B pivoted in the ends of the slotted body and provided with pin F and the retaining spring H adapted to retain the lever in the locked position, substantially as described. 2nd. The combination, with the slotted body A, having hook D and provided with cross-bar J, of the toothed strap C provided with hook D', the slotted lever B, pivoted in the ends of the slotted body and provided with the pin F and the spring H, by which the lever is secured to the body, substantially as described. 3rd. The combination, with the slotted body A, having hook D and provided with cross-bar J, of the toothed strap C having hook D', the slotted lever B pivoted in the ends of the slotted body, and provided with pin F, the said cross-bar being adapted to engage with one of the teeth of the strap, to prevent its

disengagement from the pin of the slotted lever, substantially as and for the purposes set forth. 4th. The combination, with the slotted body A having hook D, of the toothed strap C provided with hook D', and the slotted lever B' pivoted on the ends of the body on the pins G, G', having collars L, L' on their extremities, substantially as described.

### No. 32,755. Vehicle Pole. (*Timon de voiture.*)

Homer A. Burt, Detroit, Mich., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. An adjustable vehicle pole consisting of the combination, with the pole and its curved cross bar, of levers pivoted to the cross bar and adapted to be fastened to the vehicle, said levers being provided with springs adapted to engage with notches in curved pieces or segments on the cross bar for holding the levers in any desired position, substantially as described. 2nd. In the herein described adjustable vehicle pole, the combination, with the pivoted levers F, of swivel bolts located on the ends of the said levers, and provided with an eye to receive the bolt which engages it to the vehicle, substantially as described.

### No. 32,756. Bag Holder. (*Accroche-sac.*)

George W. Freeman, Amherst, N. S., 8th November, 1889; 5 years.

*Claim.*—1st. In a bag holder, the frame described above by letters A, C, D, with its hooked projection d, or on an independent stand of its own, in combination with the tilting bars B and buttons c, as set forth.

### No. 32,757. Horse Shoe. (*Fer à cheval.*)

Gustave Jacobs, Berlin, Germany, 8th November, 1889; 5 years.

*Claim.*—1st. In horse shoes, a toe calkin G fitting by an upper extension into a slot in the shoe and fastened by one or more curved screw or rivet bolts g', substantially as described with reference to Figures 1, 2, and 3, of the drawing. 2nd. In horse shoes, a toe calkin G fitting by an upper taper extension into a slot in the shoe and fastened by a screw or screw bolt, substantially as described with reference to Figures 4, 5 and 6 of the drawing.

### No. 32,758. Car Coupling. (*Attelage de chars.*)

Vincent Nusly, Sandusky, Ohio, U.S., 8th November, 1889; 5 years.

*Claim.*—1st. The combination, with the draw-head and its notched pin, of a slide having an opening through which the pin passes, and a spring pressing the slide towards the car to bring the front wall of its opening into the notch at the front side of the pin, the rear end of the slide being adapted to abut against the car and be thrown forward when the draw-head moves rearwardly, substantially as set forth. 2nd. In a car-coupling, the combination, with a yielding draw-head, of a link plate mounted to turn in the draw-head opening and adapted to raise and lower the link, a spring for holding the said link plate in a lowermost position, an arm for raising said link-plate and provided with a notch, and a pin adapted to engage the said notch to lock the said arm in place, substantially as shown and described. 3rd. In a car-coupling, the combination, with a yielding draw-head, of a link-plate mounted to turn in the draw-head opening, and adapted to raise and lower the link, a spring for holding the said link-plate in a lowermost position, an arm for raising said link-plate and provided with a notch, a pin adapted to engage the said notch to lock the said arm in place, and a yielding plate carrying the said pin mounted to slide in the draw-head, and provided with a projection adapted to engage the car when the draw-head is moved rearward, so as to automatically release the said link-plate, substantially as shown and described. 4th. In a car-coupling, the combination, with the draw-head provided with an offset having slots, of a pin mounted to slide in the said draw-head, and the said draw-head and the said offset, and provided with arms passing through said slots, arms adapted to engage the said pin-arms, a shaft mounted to turn on the front of the car and carrying the said arms, and levers held on the said shaft for turning the latter, substantially as shown and described. 5th. In a car-coupling, the combination, with a draw-head provided with an offset having slots, of a pin mounted to slide in the said draw-head and the said offset, and provided with arms passing through the said slots, arms adapted to engage the said pin-arms, a shaft mounted to turn on the front of the car and carrying the said arms, and levers held on the said shaft for turning the latter, each of the said levers being provided with an offset adapted to engage the pin on the said shaft, substantially as shown and described. 6th. In a car-coupling, the combination, with a draw-head provided with an offset having slots, of a pin mounted to slide in the said draw-head and the said offset, and provided with arms passing through the said slots, arms adapted to engage the said pin-arms, a shaft mounted to turn on the front of the car and carrying the said arms, levers held on the said shaft for turning the latter, a vertically extending arm held on the said shaft, and a lock-plate pivoted on the front of the car and adapted to engage the said vertical arm, substantially as shown and described. 7th. In a car-coupling, the combination, with a draw-head provided with an offset having slots, of a pin mounted to slide in the said draw-head and the said offset, and provided with arms passing through the said slots, arms adapted to engage the said pin-arms, a shaft mounted to turn on the front of the car and carrying the said arms, levers held on the said shaft for turning the latter, a vertically extending arm held on the said shaft, a lock-plate pivoted on the front of the car and adapted to engage the said vertical arm, and a transversely extending rod pivotally connected with the said lock-plate, and mounted to slide in bearings on the end of the car, substantially as shown and described. 8th. In a car coupling, the combination, with a draw-head and a pin held to slide vertically in the said draw-head, and provided near its lower end with a notch, of a slide held to slide horizontally in the said draw-head and adapted to engage the said notch, a spring pressing on the said slide, and handles extending from the said slide to the outside of the draw-head, substantially as shown and described. 9th. In

a car coupling, the combination, with a draw-head, of a link-plate held in the draw-head opening, a spring-pressed shaft carrying the said link-plate, an arm held on the end of the said shaft, a second arm pivoted on the said draw head and connected by a spring with the said first-named arm, a pin adapted to engage a shoulder on the said second arm, and a yielding plate carrying the said pin and held to slide transversely in the said draw-head, substantially as shown and described. 10th. In a car coupling, the combination, with a draw-head, of a link-plate held in the draw-head opening, a spring-pressed shaft carrying the said link-plate, an arm held on one end of the shaft, a second arm pivoted on the said draw-head, and connected by a spring with the said first-named arm, a pin adapted to engage a shoulder on the said second arm, a yielding plate carrying the said pin and held to slide transversely in the said draw-head, and a projection formed on the said plate and extending to the rear end of the draw-head, to engage the car when the draw-heads are pressed together, substantially as shown and described. 11th. In a car coupling, the combination, with a draw-head, of a link-plate held in the draw-head opening, a spring-pressed shaft carrying the said link-plate, an arm held on one end of the said shaft, a second arm pivoted on the said draw-head and connected by a spring with the said first-named arm, a pin adapted to engage a shoulder on the said second arm, a yielding plate carrying the said pin and held to slide longitudinally in the said draw-head, and crank-arms connected with the said second arm for turning the same, substantially as shown and described.

### No. 32,759. Car Coupling. (*Attelage de chars.*)

David Bellon, MoKownville, N.Y., U.S., 8th November, 1889; 5 years.

*Claim.*—The combination, with a draw-bar provided with a rearwardly extending central bar having a collar and carrying two springs, which are interposed between said collar and two abutment-blocks, said draw-bar being provided with side bars which are parallel with said central bar and are fitted to slide in said abutment-blocks, of a bumper-head pivoted to said draw-bar and provided with a rearward elongation, which receives the pressure of a spring that is secured directly to the side of the draw-bar to normally retain said bumper-head in a central position, said bumper-head being provided with a hook that projects forward from one edge thereof and that is adapted to engage with the rearmost face of a bumper-head of a like coupler, the engagement being made in such manner that the hooks or the two couplers will mutually engage with the bumper-heads of the conjoining couplers, and will lie at opposite sides of a centre line drawn through the draw-bars, as herein shown and described and for the purpose specified.

### No. 32,760. Operating Mechanism for Railway Semaphores. (*Mécanisme pour actionner les sémaphores des chemins de fer.*)

Robert Thompson, James Wright, John Wilson, Harvey Cortland and Henry Eldridge, Toronto, Ont., 8th November, 1889; 5 years.

*Claim.*—1st. A rope or chain A connecting at one end to the operating mechanism of the semaphore B, and at its other end to a head E, connected to a bar F, on which is hinged a bar I, having a projection J to fit onto a frame K, in combination with a chain X connected at one end to the switch Y, and at its other end to a tapered block a, having a chain b and weight c attached to it, all being arranged substantially as and for the purpose described. 2nd. In combination with a semaphore operating mechanism, substantially as described, the switch Y, chain X, and tapered block a, substantially as described. 3rd. In combination with a semaphore operating mechanism, substantially as described, of the switch Y, chain X, tapered block a, chain b, and weight c, substantially as described.

### No. 32,761. Hotel Night Call Indicator or Board. (*Indicateur ou tableau des appels de nuit des hôtels.*)

Howard Melhado, (assignee of William C. Grafton), Topeka, Kan., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. A hotel night call indicator consisting of a board or plate having a space A with figures denoting time, and an adjacent row of holes or perforations a, and extension plate A' a space B with holes or perforations b equal or greater in number than the number of rooms in the house, a space C with holes or perforations c, the advertising spaces D and E, and the numbered pegs P, substantially as set forth. 2nd. In a night call indicator, the combination, with a board or plate, the space A containing figures denoting time, a row of holes or perforations a, adjacent to each notation and adapted to hold pegs, substantially as set forth. 3rd. In a night call indicator, the combination, with a board or plate, the space A containing figures denoting time, a row of holes or perforations a adjacent to each notation, and a pivoted plate or strip A at the end of each row of perforations, substantially as set forth. 4th. In a night call indicator, the combination, with a board or plate, of the space A containing figures denoting time, a row of holes or perforations a adjacent to each notation, the space B containing holes or perforations b, the space C containing holes or perforations c, and a series of numbered pegs P, substantially as set forth.

### No. 32,762. Wire Belting. (*Courroie métallique.*)

Thomas Midgley and James E. Emerson, Beaver Falls, Penn., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. Wire belting composed of intertwined transverse sections of elongated helices, the ends of one section being bent back into the body of an adjacent section, and crossing the ends of said sections longitudinally on the edges of the belting, substantially as described. 2nd. Wire belting composed of intertwined transverse sections of elongated helices, having the ends of the sections bent back into the body of the belting, and the interstices on the edges filled with rubber, substantially as described.

**No. 32,763. Wire Belting.** (*Courroie métallique.*)

Thomas Midgley and James E. Emerson, Beaver Falls, Penn., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. Wire belting composed of layers of intertwined transverse sections of coiled spring tempered wire, having the ends of the adjacent sections interlocked at the edge of the belt, substantially as described. 2nd. Wire belting composed of a plurality of layers of intertwined transverse sections of coiled wire, having the edges of the belting formed of interlocked ends of the sections in one layer with the ends of the sections in an adjacent layer, substantially as described. 3rd. Wire belting composed of a plurality of layers of intertwined transverse sections of coiled wire, the edges of the belting having a plurality of separate longitudinal layers of rows of interlocked ends of the sections of which the belting is composed, substantially as described.

**No. 32,764. Anti-Friction Journal Bearing.** (*Coussinet de tourillon sans frottement.*)

William E. Elliott and James R. Lane, Chicago, Ill., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. The combination of a box provided with an inclined bearing face, a series of journal bearing cylinders having rounded ends opposing said inclined bearings, and a series of separating cylinders having no contact with the journal, and their axis within the circle of the axis of rotation of the journal bearing cylinders about the journal, substantially as described. 2nd. The combination of a box, a series of journal bearing cylinders having their bearing on the box, and a series of separating cylinders, the axis of which are within the circle of the axis of rotation of the journal bearing cylinders, said separating cylinders being provided with rounded ends, and their bearing in the box with an incline opposing said ends, substantially as described. 3rd. The combination of the box, the journal, and the journal bearing cylinders in contact with said box, said journal bearing cylinders having rounded ends and their bearings in the box inclines opposing said ends, and a series of separating cylinders having their axis within the circle of the axis of rotation of the journal bearing cylinders, and having no contact with the journal, said separating cylinders being provided with rounded ends, and their bearings in the box with inclines opposing said ends, substantially as described.

**No. 32,765. Manufacture of Wood Screws.** (*Fabrication des vis à bois.*)

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U.S., 8th November, 1889; 15 years.

*Claim.*—1st. The method of forming screws herein described by forging a finished screw-head, including the slot upon the end of the wire from which screws are produced, cutting off from the wire and pointing by compression between dies a piece of the required size to form a screw, and forging a thread thereon by rolling it between dies, which force the metal by lateral compression to expand radially into grooves in the die which gives the required form to the thread. 2nd. A wood screw made with a surface of compressed and compacted metal by forging or swaging a head in dies including a slot closed at the ends, and by forging the thread by rolling the screw-blank between dies provided with ribs to enter the metal and compress it laterally, and force it to expand radially into grooves in the dies which give the thread the required shape and size. 3rd. As a new article of manufacture, a wood screw having its entire surface composed of compressed metal as the result of the processes by which the screw is formed. 4th. As a new article of manufacture, a wood screw having the surfaces of the slot of the under side of the head and of the portion of the shank adjacent to the head of the thread, composed of compressed metal as the result of the processes by which the screw is formed.

**No. 32,766. Apparatus for Generating Steam.** (*Appareil pour produire la vapeur.*)

La Société des Générateurs à Vaporisation Instantanée (assignee of Léon Serpollet), Paris, France, 8th November, 1889; 15 years.

*Claim.*—1st. In apparatus for generating steam, a capillary space or channel to which the water to be evaporated is supplied, and in which it becomes instantaneously converted into steam, substantially as set forth. 2nd. A steam generating tube having its bore flattened into the form of a capillary space or channel, substantially as and for the purpose set forth. 3rd. A steam generating tube having a bore flattened into the form of a capillary space or channel, and thick walls capable of constituting a store of caloric and thereby forming a heat equalizer, as set forth. 4th. A steam generating tube having a bore flattened into the form of a capillary space or channel, and thick walls capable of constituting a store of caloric, said tube having external ribs, as and for the purpose set forth. 5th. A steam generating tube having a bore flattened into the form of a capillary space or channel, and thick walls capable of constituting a store of caloric, said tube being bent into the form of a volute, substantially as set forth. 6th. The combination, with a steam generating tube having a bore flattened into the form of a capillary space or channel, and having thick walls capable of constituting a store of caloric, and said tube being bent into a volute of the following parts, that is to say, a ribbed cast iron support to said volute, a body of refractory material below said support, a support to said body, a furnace grate, a furnace mouth in said body of refractory material, a cap or cover above the steam generating tube, and a chimney, substantially as set forth.

**No. 32,767. Railway Signalling Apparatus.** (*Appareil à signal de chemin de fer.*)

Frank N. Kelsey, James Graham and Joseph C. Peck, New Haven, Conn., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. In a railway signalling apparatus, the combination

of the lever A, bolt B and bolt lock E, substantially as and for the purposes set forth. 2nd. The combination of the lever A, having pivoted dog h, bolt B, projection e, sprocket wheel D, having ratchet g, pawl h, having weighted end r, chain h, having weight G, with the mechanism for operating the semaphore, the whole substantially as described. 3rd. In a railway signalling apparatus, the combination of the lever M, support L and rail, of a railway rod q, having bent upper end, pivoted bell hammer P and gong N, the whole substantially as described. 4th. The combination of the lever H, having weight, as described, chain l, rod l, having fork n and slot o, semaphore arm K, the whole substantially as described. 5th. The combination of the lever H, dog d, sprocket wheel l, ratchet g, pawl h, having weighted end r, stop i, bolt B, bolt lock E, socket P, having rib K, weight G, chain l, lever H, rod l, having forked end n and slotted end o, semaphore arm K, lever M, rod q, hammer P and gong N, the whole substantially as described.

**No. 32,768. Shoe Nailing Machine.**

(*Machine à clouer les chaussures.*)

Orrin R. Chaplin, George E. Parker and Michael J. Flynn, Boston, Mass., U.S., 8th November, 1889; 5 years.

*Claim.*—1st. In a machine for cutting nails from wire and driving the same, the combination of a reciprocating driver, a pair of toggle links, a reciprocating slide for operating said links, and provided with a cam stud or truck, a reciprocating nail-cutting die plunger, a lever for moving said cutting die, and provided with a cam stud or truck, a cam provided with a regular path for operating said die-operating lever, and a switch path or cut-off to act upon and cause the forward movement of the toggle-operating slide in advance of the throw of the regular path, and a spring constructed and arranged to be struck by said slide in its rearward movement, and by its reaction compel its truck or stud to enter said switch-path or cut-off, as set forth. 2nd. In combination with the reciprocating nail-cutting male die, the fixed female cutting dies and the vertically reciprocating driver, a chip guard plunger, constructed and arranged to be moved in one direction by the forward movement of said male cutting die, a lever fulcrumed at one end, and connected at its other end to said chip guard plunger, a spring for moving said lever and plunger in the opposite direction, and a stop-plate, constructed and arranged to prevent said backward movement until the driver has been moved above said guard plunger. 3rd. In a machine for cutting nails from wire and driving the same, the combination of a pair of dies having provision for forming the head shoulders of a nail, and severing the same from the wire during the forward movement of the male die, a fixed male die located above said severing and shaping dies, and a female die constructed and arranged to cooperate with said fixed male die during its rearward movement, to point the end of a wire from which a nail has just been severed, preparatory to the cutting of a new nail therefrom, at the next operation of the nail severing and shaping dies. 4th. The combination of the fixed male pointing die, a female pointing die made in two parts, a die-holder plate carrying said female die, a rocker-shaft provided with a lip or lug to engage said die-carrying plate, a cam for operating said rocker-shaft, and a system of levers connecting said cam and rocker-shaft. 5th. In a machine for cutting nails from wire and driving the same, the combination of a pair of dies having provision for forming the head shoulders of a nail, and severing the same nail from the wire, a pair of dies, having provision for pointing the end of the wire from which the nail has been severed, levers constructed and arranged to impart motion to said dies, and a cam constructed and arranged to operate both sets of dies. 6th. In a machine for cutting nails from a wire and driving the same, and as a means of regulating the length of wire to be fed, the combination of a pair of feed-rolls constructed and arranged to grip the wire to be fed, a ratchet-wheel secured upon a feed-shaft, a two-armed lever mounted upon and movable about said shaft, and carrying at one end a pawl to engage with said ratchet-wheel, an arm provided with a laterally-projecting stop-lug and also mounted upon and movable about said shaft, a vertically-movable bar pivoted to the free end of the stop arm, a spring to move said bar upward, an adjustable cam stop constructed and arranged to limit and vary the upward movement of said bar, a two-armed lever pivoted to said bar, with one end in contact with the toe of the pawl-lever, a cam constructed to act alternately upon the pawl-lever to feed the wire, and upon the last-mentioned two-armed lever to move said pawl-lever backward, a lever connected at one end to said vertically-movable bar, a rod connected by one end to the opposite end of said last-mentioned lever, another two-armed lever pivoted at one end to the lower end of said rod, and the work-supporting horn, constructed and arranged to act upon the other end of said last-mentioned lever, all constructed, arranged and operating as set forth, whereby the length of wire to be fed will be varied by the varying thickness of material which passes between the tip of the horn and nose of the machine. 7th. In combination with the feed-wheels, the ratchet and pawls, the levers for operating the same, the adjustable stop-arms, the levers and bar for operating the same, and the horn constructed and arranged to operate said levers, a vertically-movable rod connecting two of said levers, and having a section thereof made rectangular in cross-section and fitted to a guiding bearing, a rocker-shaft having a cam surface arranged to impinge upon and grip said rod, a lever mounted upon said rocker-shaft, and a cam for imparting to said rocker-shaft an intermittent oscillating motion, substantially as and for the purpose described. 8th. In combination with a feed mechanism, provided with an adjustable stop arm to vary the length of the wire to be fed, the lever G<sup>2</sup>, the rod G<sup>3</sup> made in two parts telescopically connected and provided with a spring to expand said rod to its greatest length, the bearing K<sup>1</sup>, the rocker-shaft K<sup>2</sup>, provided with the cam surface K<sup>3</sup>, the crank-pin K<sup>4</sup>, the cam P<sup>3</sup>, the lever G<sup>5</sup> and the horn L, all constructed, arranged and adapted to operate substantially as described. 9th. In combination with the vertically-movable horn, the clamping-bolt N<sup>5</sup>, the lever N<sup>2</sup>, the cam N<sup>3</sup> to act upon and vibrate said lever, the dog or supplementary lever N<sup>4</sup>, provided with the semi-circular recess m<sup>6</sup>, the link N<sup>6</sup> connecting said dog and the bolt N<sup>5</sup>, the adjusting-screw N<sup>7</sup> and the spring m<sup>3</sup>, substantially as described. 10th. The anvil n,



provided with the annular curved recess *o*, and the central teat or point *o'* projecting above the level of the outer rim of said anvil, which teat serves to feed the shoe beneath the nose of the machine and when the nail is driven to clinch it upon the inside of the shoe. 11th. In combination with a vertically-movable and laterally vibrating work-supporting horn, an anvil set in the tip of said horn and provided with an annular curved recess, and a central teat or point projecting above the level of the outer rim thereof, substantially as described. 12th. The combination of a work-supporting horn, and a spring secured to the upper side of the tip of said horn, with its free end perforated for the passage of the anvil, and adapted to hold the work against the nose of the machine, when the horn is depressed, and being moved backward preparatory to feeding the work another step. 13th. In combination with the feed-roll, the ratchet-wheel, pawls and pawl-lever for operating said feed-rolls, the rocker-shaft *l*, having a cut-away or eccentric portion, and the handle *l'*, all so arranged that the pawls may be raised and held out of engagement with the teeth of the ratchet, substantially as described. 14th. The combination of the horn *L*, the rod *L'* provided with the rack-teeth *z*, the bifurcated collar *L''*, provided with the shank or journal *d*, the combined clamping-bolt and pinion *L'''*, the binding nut *q'*, the slotted arm *N* and the crank-pin *e'*, all constructed, arranged and adapted to operate substantially as and for the purpose described. 15th. In combination with the pivoted horn-carrying bar *M*, the horn-supporting rod *L'*, the collar *L''*, the arm *N*, the shaft *O* provided with the crank-pin *e'*, means having provision for rotating said shaft, the set screws *r*, *r'*, and the adjusting screw *r''*, the screws *r'* and *r''* being differentially threaded, the gear-wheels *r'* and *r''*, the milled head *r'*, the stand *Q* secured to the bar *M* and threaded to receive the screw *r'*, the binding nut *q'*, the stop-nut *r''*, the forked stud *R*, set in the column *A*, all constructed, arranged and adapted to operate substantially as and for the purposes described. 16th. The combination of the pivoted bar *M*, the rod *L'*, the collar *L''*, the arm *N*, the screws *r*, *r'* and *r''*, the gears *r'* and *r''*, the stand *Q*, set screw *q'*, the spring *S* and the nuts *s'* and *s''*, all carried by said bar *M*, and the forked stud *R*, the pin *z*, both set in the column *A*, the shaft *O* provided with the crank-pin *e'*, and means having provision for rotating said shaft *O*, substantially as described. 17th. In combination with the driver stock and a steel wire like driver, a bifurcated socket having a conical or tapered outer surface, and adapted to be screwed into the lower end of the driver-stock to clamp the driver, and an obliquely-movable wedge, having a flat horizontal surface upon its under side to rest upon the upper end of the driver, substantially as described. 18th. The driver-stock *E*, provided with a socket to receive the driver-clamping device, and having an oblique cylindrical hole through the same from front to rear, in combination with the notched bolt *u*, provided with the threaded shank *u'* oblique to the axis of the cylinder, and the clamping-nut *u''*, all constructed and arranged to act upon the upper end of the driver, to adjust it to the desired position. 19th. In combination with the nose *l'*, a hardened steel bushing made in two parts, divided longitudinally, and fitted in a fixed position in a socket formed in said nose, substantially as and for the purposes described.

### No. 32,769. Method of Producing Chloride of Lead. (*Mode de production du chlorure de plomb.*)

The Electric Storage Battery Company, Gloucester (assignee of Waldron Shapleigh, Camden), N. J., U. S., 8th November, 1889; 15 years.

*Claim.*—1st. In the manufacture of chloride of lead, introducing a blast of air into an aqueous solution of nitric acid during the admission of finely divided lead thereto, and while the solution is undergoing chemical action, substantially as and for the purposes set forth. 2nd. In the method of making chloride of lead, adding to a solution of lead nitrate hydrochloric acid, and then introducing a blast of air into the same while the chemical reaction is taking place between said lead nitrate and hydrochloric acid, substantially as and for the purposes set forth. 3rd. In the method of making chloride of lead, precipitating the lead from a solution of lead nitrate in the form of lead chloride by the addition of hydrochloric acid, then introducing a blast of air into said solution during the reaction, to oxidise the lower oxides of nitrogen given off during the re-action, and then adding lead nitrate thereto, to remove the excess of hydrochloric acid, substantially as and for the purposes described.

### No. 32,770. Mold for Casting Plates for Secondary or Storage Batteries. (*Moule pour couler les plaques des piles secondaires ou accumulateurs.*)

The Electric Storage Battery Company, Gloucester (assignee of Waldron Shapleigh, Camden), N. J., U. S., 8th November, 1889; 15 years.

*Claim.*—1st. A two-part mould for casting plates for secondary or storage batteries, constructed and arranged substantially as described. 2nd. The herein described mold for casting plates for secondary batteries, provided with a sprue or feed merging with a central channel extending through the mold and communicating with channels *c* and *c'*, and the latter merging with risers *d* and *d'*, matrices communicating with said risers through the channels *a* and *a'*, horizontal channels *b* and *b'* between said matrices, and in communication with air channels *i* and *j*, and means for clamping the parts of the mold together, substantially as and for the purposes set forth.

### No. 32,771. Knotting Mechanism for Harvesting Binders. (*Appareil à nouer pour les moissonneuses-lieuses.*)

Peter Hamilton (assignee of William D. Best), Peterborough, Ont., 8th November, 1889; 5 years.

*Claim.*—1st. A disc wheel *F*, having a series of notches *a* made in it, in combination with cams connected to the knotted shaft *D*, substantially as and for the purpose specified. 2nd. A rim wheel *E*,

fixed to the knotted shaft *D* and arranged so that its rim shall fit into one of the notches *a*, of the disc wheel *F*, the said rim wheel *E* having cams formed on its periphery in such a manner that upon each revolution of the knotted shaft the disc wheel shall be revolved the required distance to feed the twine to the bill-hook, substantially as and for the purpose specified.

### No. 32,772. Heat Radiator. (*Calorifère.*)

Thomas J. Best, Montreal, Que., 8th November, 1889; 5 years.

*Claim.*—The combination, in a heat radiator, of the base *a* having flat upper surface and ports *f* and *g*, also having diaphragm *c* provided with openings *i*, with sections *m* forming syphons, and provided with flat bottom surfaces having ports *s* and *t*, also having bolts *a'*, the whole substantially as described.

### No. 32,773. Bottom for Coal Hods and other Vessels. (*Fond pour les seaux à charbon et autres vais seaux.*)

Thomas McDonald (assignee of John B. Schneider), Toronto, Ont., 8th November, 1889; 5 years.

*Claim.*—The combination, with a vessel having an internally projecting flange *a* formed round its base, of a bottom fitted into the said vessel so that the said internal flange shall butt against a shoulder formed round the circumference of the bottom which is compressed against the top of the said flange, substantially as and for the purpose specified.

### No. 32,774. Steam Generator. (*Générateur de vapeur.*)

Walter Burnham, Chicago, Ill., U. S., 9th November, 1889; 15 years.

*Claim.*—1st. The combination, with a steam-generator and an engine cylinder or other inclosure provided with a steam jacket space, of a pipe or pipes supplying steam to the jacket space and a pipe having drainage connection with said space, leading to the generator and containing a pressure balancing water column, substantially as described. 2nd. The combination, with a steam generator and a steam pipe leading therefrom, of a plurality of return or discharge pipes having drainage connection with the steam pipe, each containing a pressure balancing water column remote from the steam pipe, and a space adjacent to the water column having a steam communication with the steam pipe and subject to lower pressure than the steam pipe, substantially as described. 3rd. In combination with the steam pipe and the return pipe having a drainage connection therewith, of a pipe leading from the steam space of the steam pipe into the return pipe, substantially as described. 4th. The combination, with a steam generator and a pipe chamber or space under lower pressure than that of the generator, and affording a supply of water to be transferred to the generator, of a tank or chamber subject to an intermediate degree of pressure, and rising and descending transfer pipes severally connecting the chambers and generator, each of which pipes contains in its descending portion a water column due to the difference in pressure between the chambers which it connects, substantially as described.

### No. 32,775. Rolled Rye. (*Seigle écrasé.*)

Edward B. Mower, Cedar Rapids, Iowa, U. S., 9th November, 1889; 5 years.

*Claim.*—As a new article of manufacture rolled rye, substantially as set forth.

### No. 32,776. Vehicle Dash. (*Garde-crotte.*)

Lachlan E. McKinnon, Buffalo, N. Y., U. S., 9th November, 1889; 5 years.

*Claim.*—1st. The combination, with the dash-frame provided with a projecting screw-bolt or shank, of a dash-foot provided in its front end with a screw-socket which engages with said screw-shank, substantially as set forth. 2nd. The combination, with dash-frame provided with an opening, of a screw-bolt or shank *d* arranged in said opening and held against turning therein, and a dash-foot *C* provided at its front end with a screw-socket engaging with said shank, substantially as set forth.

### No. 32,777. Poultry Fattening Machine. (*Machine à engraisser les volailles.*)

William C. Williams, Olean, N. Y., U. S., 9th November, 1889; 5 years.

*Claim.*—A poultry-feeding apparatus consisting essentially of a horizontally-sliding frame, a food-receptacle arranged in said frame, means for elevating said food-receptacle and a series of pivotal coops, as and for the purpose described.

### No. 32,778. Screen and Storm Door. (*Ecran et contre-porte.*)

John K. Wiesendanger and John Ulrich, La Crosse, Wis., U. S., 9th November, 1889; 5 years.

*Claim.*—1st. The combination, with a door having a wire panel and a moulding strip around the same, of the flexible panel adapted to cover the said wire panel, the strips having flat or plain inner sides to embrace and confine the edges of the flexible panel upon the said moulding strips, and the tabs secured to the said strips and having elongated eyes to receive headed studs in the door frame, substantially as specified. 2nd. The combination, with a door frame having a wire or open-work panel and a moulding strip surrounding the same, of the flexible panel *C* having flat-sided strips secured to two opposite edges, tabs secured to the said strips to receive headed studs in the door frame, and two opposite strips removably



secured at opposite edges of the flexible panel and also having tabs, whereby the said strips may confine the panel upon the moulding strips of the main panel, substantially as specified. 3rd. The flexible panel C having the plates D secured thereto near its edges, the strips e placed on the panel over the said plates D, and the tabs E, constructed as described and secured to said strips, whereby the four edges of the flexible panel may be confined upon the moulding of the main panel, substantially as specified.

### No. 32,779. Potato Digger.

(Scarificateur à patates.)

Cyrus Roberts, Three Rivers, Mich., U.S., 9th November, 1889; 5 years.

*Claim.*—1st. In a potato digger, a rotary screen consisting of an annular head and tines secured thereto and projecting rearwardly therefrom entirely free and independent of each other, substantially as described. 2nd. In a potato digger, the combination of a rotary screen consisting of an annular head and tines secured thereto, and projecting rearwardly therefrom entirely free and independent of each other, a rising and falling frame carrying a roller upon which the head of the screen is supported, an outwardly projecting flange on the head of the screen, and grooved guide-rollers engaging therewith upon opposite sides, substantially as described. 3rd. In a potato digger, the combination of a rotary screen, a rising and falling frame carrying a roller upon which the head of the screen is supported, a drive shaft journaled upon said shaft and provided with a sprocket wheel, and a drive chain around said sprocket wheel, and the head of the screen, substantially as described. 4th. In a potato digger, the combination of the wheeled truck or frame, the rotary screen circumferentially supported by rollers and consisting of an annular head and tines secured thereto free and independent of each other, the drive chain around the head of the screen, and the digging plow in advance of the screen, substantially as described. 5th. The combination, in a potato digger, of the revolving screen, the rising and falling frame N, on which the drive shaft M is mounted, the drive chain passing around a sprocket wheel on said shaft and the head of the screen, the rising and falling frame N' carrying the roller K on which the screen is supported, and the raising and lowering connections of the frame N and N' with the rock shaft O and lever P, substantially as described. 6th. The combination, with the supporting wheels, axle and frame of a potato digger, of the rock shaft mounted on top of said frame and provided with a raising and lowering lever of a digging plow risingly and fallingly supported by actuating connection with said rock shaft, and the revolving screen risingly and fallingly supported by actuating connection with the same shaft, substantially as described. 7th. In a potato digger, the revolving cylindrical cage consisting of the annular head and spiral tines secured thereto, and with their rear ends unsupported, said cage being adapted to operate as a screw discharge, substantially as described. 8th. In a potato digger, the combination, with the digging plow, of the revolving screen mounted in the rear of said plow at an angle to the line of draught, substantially as described. 9th. In a potato digger, the combination, with the revolving screen of the digging plow mounted in front of said screen and consisting of the standard G, risingly and fallingly secured to the frame of the plow, the central share H having the cutting edge d' and the point d, the upturned sides f and g and the outside scraper H', substantially as described.

### No. 32,780. Double Seaming Roofing Tool.

(Outil à toiture à double couture.)

Walter K. Patrick, Urbana, Ohio, U.S., 9th November, 1889; 5 years.

*Claim.*—1st. In a seaming tool, the combination, with a grooved bar, an overlapping jaw and a compressing jaw hinged thereto and adapted to swing up into the said groove, of actuating levers pivoted to the bar and arranged to engage said jaws and throw them into said grooves. 2nd. In a seaming tool, the combination, with a metallic bar having two grooves in the underside thereof, one groove being deeper than the other, and an overlapping jaw and a compressing jaw hinged to the said bar so as to swing into said grooves respectively, of springs to throw the jaws out of said grooves, and cam levers pivoted to the bar and engaging the upper portions of said jaws, a pitman detachably connecting said levers together, a spring to return them to normal position, and a handle to manipulate the bar. 3rd. In a seaming tool, the combination, with a bar constituting the body of a tool, of a handle adjustably connected to the bar, whereby it may be set in a vertical position when the bar is on an incline. 4th. In a seaming tool, the combination, with a bar having grooves of unequal depth in the underside thereof, one of said grooves having an oblique wall, of two jaws, one for compressing the latter, having an oblique wall, springs to move said jaws out of said grooves, cam levers pivoted to the bar and adapted to engage said jaws to force them into the grooves, and a spring to return the levers to normal position.

### No. 32,781. Mechanism for Governing the Feed of Saw Mills.

(Mécanisme pour régler l'alimentation des scieries.)

Horatio B. Strong, Wilkesville, Ohio, U.S., 9th November, 1889; 5 years.

*Claim.*—1st. In a feed mechanism, a counter shaft and a feed shaft parallel therewith, each provided with friction disks, in combination with parallel sliding blocks, a set screw for adjusting one of the blocks and a wedge adapted for insertion between the end of the other block, and a fixed part of the frame work, a reciprocating shaft mounted in boxes on the blocks and provided with friction pulleys engaging the disks, and a grooved collar fixed thereon, between its bearings, and a lever pivotally connected with the base and provided with an arm constructed to engage said shaft and provided with a spring bolt, and a curved adjusting bar having perforations engaged by the bolt and located in rear of the lever, substantially as specified. 2nd. The combination, with the base I having the wall

2, the shafts 4 and 6 and their supports 5 and 5', the disks 7 and 7x mounted on their respective shafts, and adjustable blocks 10 and 11 having the reciprocating shaft 17 carrying the friction pulleys 18 and 19, and the lever 15 pivoted to the wall and provided with the wedge-shaped arm 16 adapted for insertion between the end of the block 10 and the wall 2, substantially as specified. 3rd. In a mechanism of the class described, opposite shafts provided with friction disks, in combination with an intermediate reciprocating shaft at an angle to the opposite shafts, provided with friction pulleys adapted for contact with the disks and means, substantially as described, for reciprocating said shaft, the sliding block 10 for supporting the intermediate shaft, and the lever with a wedge adapted to be inserted between the end of the block and fixed part of the frame work, for the purpose set forth.

### No. 32,782. Sleigh. (Traineau.)

Seth C. Felt, New Boston, Mich., U.S., 9th November, 1889; 5 years.

*Claim.*—1st. In a sleigh, two runner frames pivotally connected with each other by means of the axle, substantially as described. 2nd. In a sleigh, two runner frames pivotally connected with each other by means of the axle, of springs secured upon said axle, and a body supported upon said springs, substantially as described. 3rd. In a sleigh, two runner frames pivotally connected with each other by means of the axle secured to the axle frame, of springs secured upon said axle, and of a body supported upon said springs by flexible connections, substantially as described. 4th. In a sleigh, a runner frame consisting of the following elements: an angle iron runner B, knees C, raves D and axle frames E, substantially as described. 5th. In a sleigh, in combination with the runner thereof, of a detachable shoe having a hook e and studs g, substantially as described. 6th. In a sleigh, in combination with the runner thereof, of a detachable shoe secured at its rear end by a hook, and at its forward end by a stud and bolt passing through an aperture in the runner, and at or near the middle by standards, substantially as described. 7th. In a sleigh, in combination with an angle iron runner, of a detachable shoe having the hook e, studs g, and standards m and n, adapted to embrace said angle iron, and the sleeves s, substantially as described. 8th. In a sleigh, in combination with the runner thereof of a detachable shoe provided with a standard p' having a suitable aperture, and pin u, and a locking collar u', the parts being arranged to operate substantially as and for the purpose described. 9th. In combination with a sleigh, a detachable shoe having a supplemental bar P' secured to the underside thereof, substantially as described. 10th. In combination with a sleigh, a shoe having a wide bearing adapted to be detachably secured to the runner, substantially as described.

### No. 32,783. Bucket for Chain Pumps.

(Godet de pompe à chapelet.)

Adam D. Crosby, Cuba, N. Y., U.S., 9th November, 1889; 5 years.

*Claim.*—1st. In a bucket for chain-pumps, the rubber A having the concave recess a in its upper side, a concave recess a', of substantially the same diameter formed in its bottom, the sides of said bucket being of ogee form, to present the lower depending wall, as described, said bucket having a vertical central perforation, an upper eye carrying a stem within said perforation and of the same diameter throughout the length of the latter, the lower projecting end of the stem being reduced to form a shoulder c', the swivel D having plate d permanently located within said lower recess, and having at its upper surface convex, said plate having a central opening in which the reduced end of the stem is riveted, so that said plate can bear pivotally against the shoulder c', the construction being such that the upward draft on the eye will cause the plate d to expand the bucket, while the lower depending walls are free to take up wear, substantially as set forth.

### No. 32,784. Freight Car Roof.

(Toiture de chars à marchandises.)

George A. Roberts, Paducah, Ky., U.S., 9th November, 1889; 5 years.

*Claim.*—In a roof, the combination of the boards having their lower edges beveled away so as to form a chamber, with the pans B having their edges turned up at right angles and made to fit in grooves formed in the under side of the boards, substantially as shown.

### No. 32,785. Cant-Dog. (Renard.)

Walter McFarlam, St. Marys, N.B., 9th November, 1889; 5 years.

*Claim.*—1st. The combination of the socket a and the flange b, as made of wrought metal and being forged or hammered, substantially as and for the purpose hereinbefore set forth. 2nd. The shape of the upper parts of the pick c.

### No. 32,786. Twine Holder for Grain Binders.

(Porte ficelle pour les lieuses à grain.)

David Gabel, New Dundee, Ont., 9th November, 1889; 5 years.

*Claim.*—1st. In a twine-holder, the combination, with the rotary disc having a circular series of notches, of the shoe stationarily secured and adapted to clamp the twine, and the cut-away portion on the bearing face of said shoe, whereby the tension of the free end of the twine is relieved, substantially as described. 2nd. In a twine-holder, the combination, with the rotary disc A having a circular series of notches B, of the shoe G adapted to clamp the twine and provided with the bearing-face J and the cut-away portion M, substantially as described. 3rd. The combination with the rotary disc A having the circular series of notches B, the stationary shoe G provided with the bearing-face J, and the cut-away portion M thereof, and the spring L to which the shoe is pivotally secured at or near its middle, substantially as described.

**No. 32,787. Rail Joint.** (*Joint de rail.*)

James M. Johnson, (administrator of the estate of Richard Long, Chicago, Ill., U.S., 9th November, 1889; 5 years.

*Claim.*—1st. A rail joint support consisting of a truss composed of a spring member and a rigid member, the truss being supported from opposite sides of the rails and supporting the meeting ends thereof, substantially as set forth. 2nd. A rail joint support consisting of a truss composed of two members, one of which is a spring member, and having adjustable devices for regulating the tension of the spring member, substantially as set forth. 3rd. A rail joint support consisting of a truss composed of two members, one of which consists essentially of rods, bars, or strips supported from each side of the rails, and the other member interposed between the rods and the meeting ends of the rails, substantially as set forth. 4th. A rail joint support consisting of a truss composed of two members, one being in the form of curved spring bars supported beneath the rails, and the other of a rigid standard between the spring bars and the meeting ends of the rails, substantially as set forth.

**No. 32,788. Connection of Steam Generators.**

(*Rucordement des générateurs de vapeur.*)

William Irving, Chicago, Ill., U.S., 9th November, 1889; 15 years.

*Claim.*—1st. The combination, with a steam generator and a steam pipe leading therefrom, of a return pipe connecting the steam pipe with the generator, said return pipe rising above its connection with the steam pipe and descending to the generator, and containing in its descending portion a pressure-balancing liquid column, and above said liquid column a space subject continuously to sufficiently low pressure to enable steam, flowing continuously from the steam pipe to such low pressure chamber, to raise water to said chamber from the steam pipe, whence the water may descend into the generator by gravity. 2nd. The combination, with a steam generator, and a steam pipe leading therefrom, of a return pipe leading to the generator from a point in the steam pipe below the water level of the generator, which return pipe contains a chamber elevated above the water level of the generator subject continuously to lower pressure than that of the steam pipe or generator, and has a descending portion containing a pressure-balancing liquid column between the low-pressure chamber and the contents of the generator, whereby steam will continuously raise water from the steam pipe to the low-pressure chamber, whence the water falls into the generator. 3rd. The combination, with a steam generator, a heating coil or radiator and a steam pipe leading from the generator to the coil, of a return pipe connecting the coil with the generator, said return pipe rising above its connection with the coil and descending to the generator, and containing in its descending portion a pressure-balancing liquid column, and above said column a space subject continuously to sufficiently low pressure to enable steam, flowing continuously from the coil to such low pressure space to raise water to said chamber from the coil, whence the water may descend by gravity into the generator. 4th. The combination, with a steam generator, a heating coil or radiator located below the water level of the generator, and a steam pipe leading from the generator to the coil, of a return pipe connecting the coil with the generator, said return pipe rising above the water level of the generator and descending thence to the generator, and containing in said descending portion a pressure-balancing water column above which is a space subject continuously to sufficiently low pressure to enable steam, flowing continuously from the coil to such low pressure chamber, to raise water from the coil to the low pressure chamber, whence the water may fall into the generator. 5th. The combination, with a steam generator, an engine or other steam using device, and a steam supply pipe leading from the generator to the engine, of a return pipe connecting the steam pipe with the generator, said return pipe rising above its connection with the steam pipe and descending to the generator, and containing in its descending portion a pressure-balancing liquid column, and above said liquid column a space subject continuously to sufficiently low pressure to enable steam, flowing continuously from the steam pipe to such low pressure chamber, to raise water to said chamber from the steam pipe, whence it may descend into the generator. 6th. The combination, with a steam generator, an engine or other steam using device, and a steam supply pipe leading from the generator to the engine, of a return pipe leading to the generator from a point in the steam pipe below the water level of the generator, which return pipe contains a chamber elevated above the water level of the generator subject continuously to lower pressure than that of the steam pipe or generator, and has a descending portion containing a pressure-balancing liquid column between the low pressure chamber and the contents of the generator, whereby steam will continuously raise water from the steam pipe to the low pressure chamber, whence the water may fall into the generator. 7th. The combination, with a steam generator, an engine or other steam using device, and a steam supply pipe leading from the generator to the engine, of a return pipe which connects the steam pipe with the generator and which rises between its said connections to a point above the level of water in the generator, said return containing a steam space of continuously lower pressure than any other point in the circuit, and also containing a liquid column between said low pressure space and the contents of the generator, and a valved escape passage leading from the low pressure space of the return pipe. 8th. The combination, with a steam generator, an engine or other steam using device, and a steam supply pipe leading from the generator to the said steam using device, of a return pipe leading from the steam pipe to the generator, and provided with an ascending portion through which steam rises carrying water in small masses, and a descending portion which contains a pressure-balancing liquid column, and a check valve in the return pipe arranged to open toward the generator. 9th. The combination, with a steam generator and a steam pipe leading from the generator, of a return pipe leading from the steam pipe upwards to a point above the water level of the generator, thence at a declension toward the generator, and then downward into the generator for a vertical distance sufficient to contain a liquid column due to the difference in pressure

between the generator and the low pressure space in the return pipe. 10th. The combination, with a steam generator and a steam pipe leading from the generator, of a separator connected to the steam pipe, and a return pipe having a drainage connection with the separator and leading to the generator, said return pipe rising above its connection with the separator, and descending to the generator and containing in its descending portion a pressure-balancing liquid column, and above said liquid column a space continuously subject to sufficiently low pressure to enable steam flowing continuously from the steam pipe through the separator and return-pipe, to such low pressure chamber, to raise the water delivered to the return pipe from the separator. 11th. The combination, with a steam generator and a steam pipe leading from the generator, and having a part thereof below the water level in the generator, of a separator connected in the steam pipe at such low point, and a return pipe leading from the separator to a point above the water level of the generator, and thence downward into communication with the generator, and containing in its descending portion a liquid column of a height due to the difference in pressure between the generator and the interior of the return pipe above the column. 12th. The combination, with a steam generator and a steam pipe leading from the generator, of a separator connected to the steam pipe, and a return pipe having a drainage connection with the separator and rising above the water level of the generator, thence running at a declension towards the generator, and then downward into the generator for a vertical distance sufficient to contain a liquid column due to the difference in pressure between the generator and the low pressure space in the return pipe. 13th. The combination, with a steam generator and a steam pipe leading from the generator, of a return pipe connecting the steam pipe with the generator, and provided with a descending portion containing a pressure-balancing water column, and a water feed pipe leading into the return pipe, whereby return water continuously enters the generators together with any feed water admitted through the feed pipe.

**No. 32,789. Frictional Gearing.**

(*Embrayage à friction.*)

George F. Evans, Somerville, Mass., U.S., 9th November, 1889; 5 years.

*Claim.*—1st. In frictional gearing mechanism by which motion is communicated between two parallel shafts, the combination, with two straight-faced pulleys and their shafts, of a loose endless band encircling one pulley and adapted to be gripped by both pulleys, all operating in the manner substantially as and for purposes herein set forth and described. 2nd. In frictional gearing mechanism, substantially as described, by which motion is communicated between two parallel shafts, the combination, with two straight-faced pulleys and their shafts, of a loose endless band encircling one pulley and adapted to be gripped between both pulleys, and adjusting mechanism by which said pulleys are caused to approach or separate one from the other, to produce greater or less pressure upon the band, substantially as specified. 3rd. In frictional gearing of the class described, the combination, with two pulleys, the surfaces of which are in close proximity but not contiguous, and the endless band which loosely encircles one pulley and passes between two pulleys, of the adjusting mechanism composed of the boxes vertically movable in the hangers, and the operating cams, whereby the pulleys are caused to approach or separate one from the other, substantially as and for the purposes herein specified. 4th. The combination, with the loose band 7 and the pulleys, one flanged which grips the same, of the operating mechanism composed of the cams 14, the movable boxes 20 with arms 21, the hangers 13 straddled by the latter, and the actuating lever rods 15, 16, all substantially as herein described. 5th. In combination with the hangers 13 provided with studs 17, screw-threaded pins 18 and the fastening nuts 19, the operating cams 14 mounted upon said studs, and the movable boxes 20 resting upon the cams and actuated thereby, substantially as set forth.

**No. 32,790. Wagon Brake.** (*Frein de wagon.*)

Fred Rice, Waukesha, Wis., U.S., 9th November, 1889; 5 years.

*Claim.*—1st. In a vehicle-brake, the combination, with the shaft provided with brake-lock levers or cranks at its ends, and with an arm arranged intermediately of and out of alignment with the said levers or cranks, of the power-applying rod connected to said arm and to a bifurcated lever pivoted upon the tongue or pole, and adapted to be acted upon by the neck-yoke, and which bifurcated lever is provided with a stop at its rear acting upon the tongue or pole, substantially as set forth. 2nd. In a vehicle-brake, the combination, with the shaft provided with brake-block arms or cranks at its ends, and with an arm arranged intermediately of and out of alignment with the aforesaid arm or cranks, of the power-applying rod connected to said intermediate arm, and to a bifurcated lever pivoted upon the tongue or pole, and adapted to be acted upon by the neck-yoke, and which bifurcated lever is provided with a stop at its rear, acting upon the tongue or pole, and the spring holding the faces of the brake-blocks out of contact with the wheels, said brake-block being eccentrically hung and adapted to have their faces turned away from the wheels as the team is backed, substantially as set forth.

**No. 32,791. Hog Pen for preventing Brood Sows from Overlaying and Killing Pigs.** (*Etable à cochons pour empêcher les truies de se coucher sur leurs petits et les tuer.*)

Martin C. Randleman and Zouave S. Randleman, Carlisle, Iowa, U.S., 9th November, 1889; 5 years.

*Claim.*—1st. A hog-pen having an inclined floor, an elongated opening in the wall at the lower edge of the inclined floor, to allow the passage of pigs, and a pig-receptacle on the outside of the wall, and at the lower edge of the inclined floor, for the purpose stated. 2nd

A hog-pen having an inclined floor guard fixed against the walls at some distance above the floor, and a pig-receptacle on the outside of the wall, and at the lower edge of the inclined floor, having communication with the inclined floor through an opening in the wall that will allow pigs to pass from the inclined floor into the receptacle, in the manner set forth for the purposes stated. 3rd. The floor C, the pig-receptacle D having end pieces pivoted to the end walls of a hog-pen, and the rotating shaft J connected with the floor by means of ropes, straps or chains, substantially as shown and described for the purposes stated.

**No. 32,792. Detachable Bottom for Cooking Utensils.** (*Fond mobile pour les ustensiles de cuisine.*)

Elizabeth C. Powell, Kincardine, Ont., 9th November, 1889; 5 years.

*Claim.*—The rings A and B joined together, and having an inwardly-projecting flange C located at the said joint, substantially as and for the purpose specified.

**No. 32,793. Car Heater.** (*Calorifère de char.*)

Josiah G. Philips, Easton, Penn., U.S., 9th November, 1889; 5 years.

*Claim.*—1st. The combination, with the boiler A having the chamber A<sup>2</sup> of the coil C threaded, as at D<sup>2</sup>, the receiver D removably mounted thereon and having the regulator D<sup>1</sup>, the pipes C<sup>1</sup>, E and G, and couplers F, substantially as specified. 2nd. The combination of the receiver D, coil C, pipes C<sup>1</sup>, E and G, the double couplers F, cars B, cylinders H and registers H<sup>1</sup>, the latter arranged at diagonally opposite corners of the car, substantially as specified.

**No. 32,794. Screw Nut Ratchet Wrench.**

(*Clé à écrou à rochet.*)

Joseph Williams, Winnipeg, and Hugh M. Harris, Poplar Park, Man., 11th November, 1889; 5 years.

*Claim.*—A ratchet wrench consisting of H, H, handle or lever A, A, catch or catches B, B, cylinder P, P, spring or springs D, D, bolt B, bolts N, N, nuts C, C, spaces W, space T, I, holes, screwbolt or spiral spring bolt (as here applied) K, K, diminisher S, S, ratchet or ratchets X, X, band, all formed, arranged and combined, substantially as and for the purposes hereinbefore set forth.

**No. 32,795. Driving Reins.** (*Guides de harnais.*)

Matthew S. Dickinson, Los Angeles, Cal., U.S., 11th November, 1889; 5 years.

*Claim.*—1st. The combination, with the main reins, main bit and overdraw-bit, of the overdraw-strap A<sup>2</sup>, and the short side rein sections A<sup>2</sup>, connected to the cheek-rings and made continuous with the overdraw-strap, and passing freely through guides at the front ends of the main reins at a point in rear of the saddle, substantially as shown and described. 2nd. The combination, with the main reins, the bits and the cross-reins of a double harness, of the two overdraw-bits and the two overdraw-straps, and the short side rein-sections A<sup>2</sup>, B<sup>2</sup> made continuous with the overdraw-straps and passing through guides at the front ends of the main reins in rear of the saddle, substantially as shown and described.

**No. 32,796. Set of Three Horse Whiffletrees.**

(*Palonniers pour les attelages à trois chevaux.*)

Johnson Ellis, Lindsay, Ont., 11th November, 1889; 5 years.

*Claim.*—The construction of three-horse whiffletrees according to the above defined plan, as set forth in the specifications and illustrated by the drawings hereunto annexed, depending upon the division of the two whiffletrees in N and N<sup>1</sup>, their respective drawing points and the application of the two whiffletrees, pulleys P and P<sup>1</sup>, as and for the purpose herein stated.

**No. 32,797. Wrench.** (*Clé à écrou.*)

Caleb S. DeWitt, Lockport, Ill., U.S., 11th November, 1889; 5 years.

*Claim.*—The combination of bar B having the jaw J<sup>1</sup>, the shank R having the jaw J, and respectively provided with the differential exterior screw threads S and E, as described, and the handle sections D, D<sup>1</sup> rotatably secured together and respectively provided with the annular differential screw-threads, as set forth, and adapted to be independently rotated to adjust said jaws, in the manner substantially as and for the purpose set forth.

**No. 32,798. Gate Hinge.** (*Penture de barrière.*)

William H. Ratcliff, Ringwood, Ont., 11th November, 1889; 5 years.

*Claim.*—1st. In a gate hinge, the combination of the straight rod C, having a series of holes c, and a collar C<sup>1</sup>, the post C<sup>11</sup> supporting said rod, the movable collar C<sup>2</sup> on said rod, supported upon a cross pin and supporting the gate hinge, the cross pin C<sup>111</sup> adapted to engage the holes c and to carry said collar C<sup>2</sup>, and the hinge bolts D, D<sup>1</sup> engaging said rod, substantially as set forth. 2nd. In a gate hinge, the combination of the gate stile A<sup>1</sup>, and post B, the straight rod C provided with cross holes c, and suitably supported, the pin C<sup>111</sup> adapted to engage said holes and support a movable collar, the movable collar C<sup>2</sup> resting on said pin and supporting a hinge, the hinge bolt D<sup>1</sup> pivotally engaging said rod C and secured to the gate, and the hinge bolts D rigidly engaging said rod C, and secured to the post B, substantially as set forth.

**No. 32,799. Safety Reins for Riding and Driving.** (*Rênes de bride et guides de harnais de sûreté.*)

William H. Sergeant and Arthur Northcott, Oakdene, Fulham, Eng., 11th November, 1889; 5 years.

*Claim.*—In a safety rein for horses applicable to riding and driving, the attachment of said reins a to the crupper or equivalent b, and passing them through rings c and d, substantially as described and shown for the purpose herein specified.

**No. 32,800. Combined Bit Brace and Nut Wrench.** (*Vilbrequin et clé à écrou combinés.*)

David A. Stewart and John F. Stewart, Molesworth, Ont., 11th November, 1889; 5 years.

*Claim.*—A combined bit-brace and nut-wrench consisting of a hollow head C fixed upon the end of the brace-spindle A, which is grooved to receive the shanks of two adjustable tapered heads F fitted into the hollow head C, the shanks of the said heads F, having a thread I cut on them to correspond and engage with a thread I<sup>1</sup>, cut in a sleeve J, held on the spindle A and arranged so that, when it is revolved, the tapered heads F are adjusted within the hollow head C, so as to move them closer to, or farther from, each other, to grasp a smaller or larger nut, substantially as and for the purpose specified.

**No. 32,801. Road Scraper.** (*Grattoir de chemin.*)

Mary P. Lomont, (administratrix of the estate of François T. Lomont), Fort Wayne, Ind., U.S., 12th November, 1889; 5 years.

*Claim.*—1st. The combination, in a road scraper, of the draft bars, the scraper having the plates or ears connected to, and adapted to slide on the draft bars, and the rearwardly extending brackets or guides secured to the scraper and engaging the draft bars, substantially as described. 2nd. The combination, in a road scraper, of the draft bars, the pivoted scraper, the racks guided on the scraper and having the pins or keys adapted to engage openings in the draft bars, and the gear to operate the said rods, substantially as described. 3rd. The combination, in a road scraper, of the draft bars, the scraper connected thereto and adapted to oscillate thereon, the levers R<sup>1</sup> connected to the draft bars, the hand levers, and the links connecting the same to the levers R<sup>1</sup>, substantially as described. 4th. In a road scraper, the combination, of the main frame having the depending pivot shaft A<sup>2</sup>, the scraper pivotally connected to the said shaft and adapted to move vertically thereon, the draft bars connected to the scraper and forming guides and supports for the same, and the levers connected to the draft bars and adapted to raise and lower them, substantially as described. 5th. The combination, in a road scraper, of the main frame having the depending pivotal shaft, the scraper pivoted thereon, the draft bars connected to, and forming the guides and supports for the scraper, the levers to raise and lower the draft bars, the shaft journaled in bearings on the scraper and having the pinion, and the racks engaging said pinion, and having the keys or pins to engage openings in the draft bars, for the purpose set forth, and means, substantially as described, to adjust the scraper substantially as set forth. 6th. The combination, in a road scraper, of the main frame having the depending central pivotal shaft, the draft bars, the scraper pivoted on the depending shaft and connected to the draft bars, and the hounds or braces connecting the lower ends of the pivotal shaft to the rear truck, for the purpose set forth, substantially as described. 7th. In a road scraper, the combination, with the scraper having the ears or brackets on its rear side, of the pivotal bolts in said ears or brackets, the ploughs or shovels loosely connected to the upper ends of said pivotal bolts, the springs bearing on the ploughs or shovels, and the transverse rods connecting the same, for the purpose set forth, substantially as described. 8th. The combination, with the scraper having the ears or brackets on its rear side, of the pivotal bolts in said ears or brackets, the ploughs or shovels loosely connected to the upper ends of said pivotal bolts, the eye bolts engaging the pivotal bolts and extending rearward to the ploughs or shovels, the adjusting nuts on said eyebolts, and the springs bearing against the adjusting nuts, and against the ploughs or shovels, substantially as described. 9th. The combination with the scraper, of the ploughs or shovels flexibly connected thereto, and having the extended points at their inner lower corners, for the purpose set forth, substantially as described. 10th. In a road scraper, the combination, with the frame and its truck, the latter provided with a tongue, of the scraper bar suspended loosely by the frame, a hammer strap mounted on the draft bar and connected to the whiffletree, and links for connecting the hammer strap directly to the scraper bar in rear of its connection with the frame, substantially as specified. 11th. In a road scraper, the combination, with a main scraper blade, of detachable scraping blades arranged in rear thereof, and means for adjusting the same to and from the main blade, substantially as specified.

**No. 32,802. Lumber Lifting Machine.**

(*Machine à soulever le bois scié.*)

Jean B. Nadeau, Etchemin, Qué., 12th November, 1889; 5 years.

*Claim.*—1st. In a lumber lifting machine, the base A carrying the winding barrel F, extension mast B, cross-head L, pulley blocks J and K, and ropes H and I, substantially as shown and described. 2nd. A lumber lifting machine consisting of the base A, mast B, hooks C, wedges D, winding barrel F, ropes H and I, pulley blocks J and K, hooks M, and guard N, all substantially as described and for the purposes set forth.

**No. 32,803. Root Cutter. (Coupe-racine.)**

Frederick H. Fairweather, Hampton, N.B., 12th November, 1889; 5 years.

*Claim*.—1st. In a root cutting machine, the combination, substantially as hereinbefore shown and described, with the roller A having the gudgeon E and an operating mechanism, of the cutters a, a, as set forth. 2nd. In a root cutting machine, the combination, with the roller A and accessories, of the hopper D having the shelf C, substantially as herein shown and described, and as and for the purposes set forth. 3rd. In a root cutting machine, the combination, with the roller A having the cutters a, a and gudgeon E, of the chute or hopper G attached to the frame B, substantially as hereinbefore shown and described and as and for the purposes set forth.

**No. 32,804. Handle for Valves, Tallow Cups Steam Gauges and all similar Appliances. (Poignée pour les soupapes, godets à graisse, manomètres et autres appareils semblables.)**

John B. Heighington and William Heighington, Toronto, Ont., 12th November, 1889; 5 years.

*Claim*.—1st. A handle consisting of a suitable shaped metallic disc B, the edge of which is encased in a correspondingly shaped annular ring C, of rubber or other suitable non-conducting material, substantially as and for the purpose set forth. 2nd. The combination of the metallic disc B having a flanged edge b with the annular ring C, of rubber or other suitable non-conducting material having a channel c formed to fit the flanged edge b of the disc B, substantially as and for the purpose set forth. 3rd. The combination of the metallic disc B having corrugated flanged edge b, with the annular ring C, of rubber or other suitable non-conducting material, having a corrugated channel c formed to fit the corrugated flanged edge b of the disc B, substantially as and for the purpose set forth.

**No. 32,805. Drawer Guide for Bureaus. (Guide-tiroir pour les commodes.)**

Dwight C. Clapp, Charles E. Rigley, David M. Estey and The Estey Manufacturing Company, Owosso, Mich., U.S., 12th November, 1889; 5 years.

*Claim*.—In a drawer guide, the combination, with the strip having the recess in one side, and the circular openings in the top wall of the said recess, of the spring guide strips arranged in said recesses and having pins arranged in the circular openings of the recess, whereby the guide strip is capable of a universal or movement in all directions, and binding of the drawer is prevented, substantially as described.

**No. 32,806. Trace Chain. (Chaîne de trait)**

The Oneida Community, Limited, New York (assignee of Harrison Kinsley, Niagara Falls), N.Y., U.S., 12th November, 1889; 5 years.

*Claim*.—1st. A trace chain composed of links, each formed of two thicknesses of sheet metal, provided with coinciding slots through which the adjacent link passes, and the end links longer than the central links, and having their slots adapted to receive the same hook, substantially as described and shown. 2nd. A trace chain composed of links of double thicknesses, a swivel between two of the links, long links at one end, and a ring on the opposite end, as set forth and shown.

**No. 32,807. Washing Machine. (Machine à blanchir.)**

Joseph Major, Colchester North, Ont., 13th November, 1889; 5 years.

*Claim*.—A washing machine A having a projecting lip B, a hinged rotating wheel J, radial ribs K at the bottom of said machine and similar ribs fixed to the rotating wheel J, the whole as described and for the purpose specified.

**No. 32,808. Railway Signal. (Signal de chemin de fer)**

Lorenzo D. Williams, Camden East, Ont., 13th November, 1889; 5 years.

*Claim*.—1st. The combination, with the rail 2, of the depressible semi-elliptic spring 3 having a lug 6, the rock shaft 8 having an arm 9, and the bolt 12, pull rod 17 and bell 18, substantially as set forth. 2nd. The combination, with the rail 2, of the semi-elliptic springs 3, 20, 30, the rock shafts 8, 21, 31, the bolt 12, draw slide 26, pull wires 25, 35, and pull rod 17 connecting with a bell 18, and operating as described.

**No. 32,809. Device for Wiring Wood Fences. (Machine à attacher le fil de fer aux clôtures de bois.)**

Ahira Jones, East Bethlehem, Penn., U.S., 13th November, 1889; 5 years.

*Claim*.—1st. A weaving-stick having the wire slots or openings a<sup>1</sup>, b<sup>1</sup>, cut diagonally on opposite sides of the wire arms, and extending in an opposite and parallel direction, and the extended wire arm 2, in combination with the catch d, substantially as set forth. 2nd. In a device for weaving fence, an anchor composed of two parallel sticks provided with openings o and o' for the passage of wires, and clutching the wires between opposite bars or rods x, x', substantially

as set forth. 3rd. In a device for wiring wood fence, an anchor having two parallel sticks B and C, secured together by movable bars g, h, i, pierced by holes o and o', for the passage of wires, and clutching the wires between opposite rods x, x', by means of a force communicated by the weight 4, substantially as set forth. 4th. In a device for wiring wood fence, the combination of a weaving-stick A, having on its wire arms wire slots or openings cut diagonally in the wire arm, and extending in parallel and opposite directions with the extended wire arm 2, engaging with the catch d, and the anchor E composed of two parallel sticks B and C, pierced with holes o, o', for the passage of wire and clutching the wires between the opposite rods or bars, by means of force communicated by the weight 4, substantially as set forth.

**No. 32,810. Clothes Dryer. (Séchoir à linge.)**

George E. Hasson, Berlin, Ont., 13th November, 1889; 5 years.

*Claim*.—1st. The combination of the post A with back B, crank C, pinion D and catch H, all acting on machines, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of head E with wire stays F, substantially as and for the purpose hereinbefore set forth.

**No. 32,811. Method of Producing Fuel and Illuminating Gas and Apparatus Connected therewith. (Mode de production du gaz combustible et d'éclairage et appareil pour cet objet.)**

Arthur Kitson, Philadelphia, Penn., U.S., 13th November, 1889; 5 years.

*Claim*.—1st. The process of generating fuel gas, consisting in passing a mixture of superheated steam and highly heated air down through the body of incandescent fuel from above, the production and superheating of the steam, as well as the heating of the air, being performed by the same body of fuel. 2nd. The process of generating fuel gas consisting in passing a mixture of superheated steam and highly heated air through two separate bodies of incandescent fuel, the production and superheating of the steam and heating of the air being performed by the same bodies of fuel. 3rd. The process of generating gas consisting in passing a mixture of superheated steam and air down through one body of fuel, and a mixture of steam, air and oil down through another body of fuel, and mixing the resultant gases in the same generator. 4th. A gas generator divided by a vertical partition into two fuel chambers, and having a connecting base chamber, in combination with a steam and air injector connecting with the top of each fuel chamber, an air heating pipe or chamber arranged in the generator, and a gas take-off pipe also leading from the top of each chamber, for the purpose described. 5th. In combination with a gas generator containing two fuel chambers and a connecting base chamber, the steam generating and superheating coils locate l in the base chamber between the grates of the fuel chambers and pipes connecting such coils with steam and air injectors, one for each fuel chamber, as and for the purpose described. 6th. The gas generator divided by a vertical partition of refractory material into two fuel chambers, and having a connecting base chamber, in combination with an air heating pipe and a steam superheating pipe extending through the dividing partition, and connecting with injectors discharging into the tops of the furnaces, as and for the purpose described. 7th. In combination with a gas generating furnace, the steam pipe and the air heating pipes or coils located in the ash chamber and wall of the generator, and both connecting with a blast injector arranged to discharge into the fuel of the generator, as and for the purpose described. 8th. In combination with the two-chambered generator and a connecting base chamber, the steam and air blast injector connecting with such base chamber, and a steam and air blast injector connecting with the top of each fuel chamber of the generator, whereby the fuel may be blasted either up or down and the current passed from one chamber to the other in either direction, for uniformly heating and consuming the fuel and a mixed gas simultaneously generated from air and steam.

**No. 32,812. Apparatus for Manufacturing Gas. (Appareil de production du gaz.)**

Marcellus A. Morse, Chicago, Ill., U.S. 13th November, 1889; 5 years.

*Claim*.—1st. In a cupola gas generator, the combination of the fuel and decomposing chamber, the gas fixing chamber and the steam superheating chamber separated one from the other by a vertical partition and connecting at the bottom with such fuel chamber, a steam supply pipe connecting with the top of the superheating chamber, supply pipes for gas and oil vapour, and a gas outlet pipe connecting with the fixing chamber, as and for the purpose described. 2nd. In combination with the fuel and decomposing chamber placed in the base of the cupola, the superheating and fixing chambers placed above the arch at the top of the fuel chamber, having openings for gaseous products leading into such superheating and fixing chambers, a valved pipe connecting the chambers at the top, and an escape pipe leading from the base of the fixing chamber, as and for the purpose described. 3rd. In a cupola gas generator, the combination, with the fuel and decomposing chamber, of the regenerative portion of the cupola placed above and divided by a vertical partition into a gas fixing chamber and a steam superheating chamber, each connecting at the bottom with the fuel chamber and having at the top an escape opening for products of combustion, and a closing lid and pipes for supplying air, steam and oil or vapor to the chambers, and a gas suction pipe, whereby the heat of the gaseous products arising from the bed of fuel while it is being heated may be better stored and utilized for fixing gas and superheating steam, as described. 4th. In a cupola gas generator, the hollow partition wall for separating the fixing chamber from the superheating chamber, having its space filled with dry sand or

equivalent material, for closing cracks which may occur in the wall, as described. 5th. In a cupola gas generator, the combination, with the fuel and decomposing chamber placed in the base of the cupola, of the regenerative portion of the cupola placed above and divided by a hollow vertical partition wall into a gas fixing chamber and a steam superheating chamber, and an oil vaporizing pipe or coil arranged in the space of such wall, and a vapor pipe leading therefrom into the fixing chamber, for the purpose described. 6th. In combination with the fuel chamber, the fixing chamber and superheating chamber, arranged and connecting as described, a distributing chamber *z* arranged below the ash-pit having air and steam supply pipes, a pipe for water-gas leading from chamber *z* to the top of the fixing chamber, a valved pipe connecting the tops of the fixing and superheating chambers, and a steam supply pipe connecting with the top of the superheating chamber, as and for the purpose described. 7th. In combination with the fuel chamber, of the cupola, the supply and distributing chamber *z* arranged below the ash-pit, perforated channels *m* communicating with such chamber and extending into ash-pit, the steam and air supply pipes connecting with chamber *z*, and an escape pipe for water-gas leading from such chamber to the fixing chamber of the cupola, for the purpose described.

### No. 32,813. Reversible Movement for Oil Lamps. (*Mouvement réversible pour les lampes à huiles.*)

Abel G. Heath, Hamilton, Ont., 13th November, 1889; 5 years.

*Claim.*—The circular base plate *A* having a circular channel *B*, the side plates *B'* and *B''*, the spring arbor having a protruding shank *F*, the coil spring *C*, the driving wheel *E*, the reversible wheels *G*, *H*, *J*, *I*, *L*, and the propelling wheel *K*, the screw *M*, the fly fan *N*, the drum *N'*, the drip cup *P*, the spring stop lever *O*, the lower end of which protrudes through the base plate *A* and the movement encasement *B''*, all formed, arranged and combined substantially as described and set forth.

### No. 32,814. Cupola Furnace and Smith's Hearth and means for Operating the same. (*Fourneau à manche et foyer de forge et moyens de les mettre en opération.*)

James Evans, Manchester, and John Hilton, Farnworth, Eng., 13th November, 1889; 5 years.

*Claim.*—1st. A cupola furnace, constructed with an upper chamber *A* and a lower chamber *B*, so as to allow an opening *G* between them, for admitting atmospheric air drawn in by the action of a draught from a chimney, substantially as described hereinbefore and shown on annexed drawings in sheet 1, Figs. 1 and 2. 2nd. The general construction, combination and arrangement of parts forming our improved furnace, substantially as described hereinbefore and shown in the accompanying drawings. 3rd. A smith's hearth, consisting of an upper portion *a* and a lower portion *b*, constructed so as to leave an opening *h* to admit atmospheric air drawn in by the action of a draught from a chimney, substantially as described hereinbefore and shown on annexed drawings sheet 2, Fig. 3. 4th. The general construction, combination and arrangement of parts forming our improved smith's hearth, substantially as described and shown hereinbefore and in the accompanying drawings.

### No. 32,815. Hydro-Carbon Furnace.

(*Fourneau à hydrocarbures.*)

John S. Andrews, New York, N. Y., U. S., 13th November, 1889; 5 years.

*Claim.*—1st. In an apparatus for the manufacture of gas, the combination of the furnace chamber and the vaporizing or gas pipes *L*, *L'* and *L''*, within the same, with the heating chamber *3* and the coiled pipe *6* within the same, arranged outside of said furnace chamber, and means for supplying and delivering oil and other liquids to and from said heating chamber, substantially as described. 2nd. In an apparatus for vaporizing and burning hydro-carbons, the combination with a furnace chamber of the burner *B*, the vaporizing or gas pipes *L*, *L'*, *L''* and *L'''*, located in said furnace chamber, the oil-heating chamber *3*, located at the side of said furnace chamber, the oil pipe *6* passing through said chamber and entering said vaporizing or gas pipes, the hot water or steam pipe *3* connecting said chamber with said vaporizing or gas pipes, and the blow-off pipe *8* extending from said oil-heating chamber and entering the end of said oil pipe *6* outside of said furnace chamber, substantially as and for the purpose described. 3rd. An apparatus for manufacturing and burning gas, comprising the furnace chamber, the oil pipes *6*, *6'*, the steam pipes *3*, *3'*, the burner *B*, the oil-tank *7* connected to said oil pipes, which lead to the furnace and are formed with the coil *6*, the oil-heating chamber *3* surrounding said coil, and provided with the pipe *6* at its bottom, entering the steam pipe *3* leading into said furnace, the boiler *5*, the hot-water tank *5'*, the pipes *5* connecting said boiler and tank, the branch pipes *4* and *4'*, connecting said tank and oil-heating chamber, and the cocks in said branch pipes, substantially as described.

### No. 32,816. Incandescent Gas Burner.

(*Bec à gaz incandescent.*)

Leonard Henkle, Rochester, N. Y., U. S., 13th November, 1889; 5 years.

*Claim.*—1st. The combination, with a gas burner, of a platinum cone or cylinder pivotally suspended concentrically with said burner from a rod or other support attached to the burner, substantially as shown and described. 2nd. The combination, with an argand gas

burner, of a central rod, as *r*, and a platinum cone or cylinder the base of which surrounds the top of the burner, said cone or cylinder being pivotally suspended from the top of the rod *r*. 3rd. The combination, with an argand gas burner, of a platinum cone or cylinder and the central rod *r*, the cone or cylinder being provided with a band *o* and an attachment *h*, said cone or cylinder being removably suspended from the top of said rod, substantially as shown and described. 4th. The combination, with an argand gas burner, of a platinum cone or cylinder, and a chimney holder provided with three or more straight equi-distant supporting arms, which enclose the cone or cylinder, substantially as shown and described. 5th. The combination, with an argand gas burner, of a platinum cone or cylinder and a chimney holder, consisting of three or more straight equi-distant supporting arms, and the band *e*, substantially as shown and described. 6th. The combination, with an argand gas burner, composed of tubes, as *t*, and provided with the central rod *r*, of a platinum cone or cylinder, the base of which surrounds the top of the burner, the top of the cone being supported by the rod *r*, substantially as shown and described. 7th. The combination, with an argand gas burner, of the central rod *r* and the platinum cone or cylinder, said rod and cone or cylinder being provided at their tops, one with a socket or cavity, and the other with an attachment having a pin or projection which enters said socket or cavity, substantially as and for the purpose set forth. 8th. The combination, with an argand gas burner, of the central rod *r* and the platinum cone or cylinder *H* having the band *o*, the cone or cylinder and rod being provided with means whereby the cone or cylinder is removably suspended from the top of the rod, substantially as shown and described. 9th. An argand gas burner, consisting of an inner and an outer cylinder, the inner cylinder extending upward above the outer one, as shown, and an air and gas-mixing chamber being formed between said cylinders, in combination with the platinum cone or cylinder, the base of which surrounds the top of the outer cylinder of the burner, and the top of which is provided with a plate, as *H*, suspended from a rod *r* within the burner, substantially as shown and described. 10th. The combination, with a gas burner, consisting of two cylindrical shells closed at the bottom to form a mixing chamber, said chamber being provided with inlets for gas and air, the inner shell projecting above the top of the outer one, of a cap projecting over the top of the inner shell, and a platinum cylinder or basket inclosing the space around the inner shell and beneath the cap, as and for the purpose set forth. 11th. The combination, with a gas burner, consisting of inner and outer cylindrical shells, having a space between them, the bottom of which is closed, forming a mixing chamber, said chamber being provided with air and gas inlets, and the inner shell extending above the top of the outer one, of a platinum cylinder or covering which extends upward from the outer shell, substantially as shown and described. 12th. A gas burner, consisting of two annular shells, as *a* and *b*, having a space between them forming a mixing chamber closed at the bottom, a gas chamber, as *s*, within the inner shell, the outer shell being provided with air inlets *b*, and the inner shell with gas outlets *v*, substantially as and for the purposes set forth.

### No. 32,817. Construction of Life Boats.

(*Construction des canots de sauvetage.*)

Robert Chambers and William Liddell, Glasgow, Scotland, 13th November, 1889; 5 years.

*Claim.*—1st. The combination, in a boat, suitable for use as a life boat, of a lower part, or shell, or hull, such as *A*, constructed of iron, steel, wood or other material, and an upper part formed of a flexible material *d* attached by its upper edge to the rail *c*, and by its lower edge to the shell or hull *A*, as described and shown upon the annexed drawings, the boat being by preference fitted with water-tight compartments. 2nd. The use in a boat, such as is herein described, of folding mechanism made of jointed stanchions, such as *a*, and jointed stays, such as *b*, for the purpose of enabling the upper flexible part of the boat to be raised or lowered, and fixed or retained in either position, as shown and described. 3rd. The employment of the upper rail *c* with row-locks *e*, as shown and described.

### No. 32,818. Embroidering Machine.

(*Machine à broder.*)

Edward Buss, St. Gallen, and Adolph Saurer, Arbon, Switzerland, 13th November, 1889; 15 years.

*Claim.*—1st. The combination of the reciprocating grippers *a*<sup>1</sup>, *a*<sup>2</sup>, the take-up hooks *b*<sup>1</sup>, *b*<sup>2</sup>, and the oscillating thread-stretchers *d*<sup>1</sup>, *d*<sup>2</sup>, substantially as described. 2nd. A take-up hook, which consists in a shank *b*, having a beak *b*<sup>2</sup>, the point of which is directed downwards and inclined to the plane of motion of the hook, substantially as specified. 3rd. The combination of the reciprocating grippers *a*<sup>1</sup>, *a*<sup>2</sup>, the take-up hooks *b*<sup>1</sup>, *b*<sup>2</sup>, bars *h* carrying the same, racks *h*<sup>1</sup>, shafts *i*, rack-guides *k*<sup>2</sup> fixed to the latter, operating mechanism consisting in the rack-guides *k*<sup>1</sup>, fixed to the shafts *i*, pinions *h*<sup>2</sup> gearing therewith, pinions *h*<sup>1</sup> gearing with racks *h*<sup>1</sup>, shafts *k*<sup>3</sup> mounted in the guides *k*<sup>2</sup>, *k*<sup>3</sup>, and carrying said pinions *h*<sup>1</sup>, *h*<sup>2</sup>, and means for imparting reciprocating motion to, and guiding the end of the racks *i*, being in a line with the hooks *b*<sup>1</sup>, *b*<sup>2</sup>, substantially as set forth. 4th. The combination of the reciprocating grippers *a*<sup>1</sup>, *a*<sup>2</sup>, the take-up hooks *b*<sup>1</sup>, *b*<sup>2</sup>, bars *h*, carrying the same, racks *h*<sup>1</sup>, shafts *i*, rack-guides *k*<sup>2</sup> fixed to the latter, operating mechanism consisting in the rack-guides *k*<sup>1</sup> fixed to shafts *i*, racks *i*, pinions *h*<sup>2</sup> gearing therewith, pinions *h*<sup>1</sup> gearing with racks *h*<sup>1</sup>, shafts *k*<sup>3</sup> mounted in the guides *k*<sup>2</sup>, *k*<sup>3</sup>, and carrying said pinions *h*<sup>1</sup>, *h*<sup>2</sup>, fixed cam guides *v*<sup>1</sup>, pivots *v*<sup>2</sup>, by which the racks *i* engage with the said cam guides *v*<sup>1</sup>, and means for imparting reciprocating motion to the pivots *v*<sup>2</sup>, substantially as described. 5th. The combination of the racks *i* having pivots *v*<sup>2</sup>, means for guiding said pivots, lever-arms *v*<sup>3</sup>, means of connection between the arms *v*<sup>3</sup> and the pivots *v*<sup>2</sup>, lever arms *m*<sup>1</sup>, axles *v*<sup>4</sup> to which said arms *v*<sup>3</sup> and *m*<sup>1</sup> are fixed, reciprocating bars *m*<sup>2</sup> carrying the axles *v*<sup>4</sup>, bars *m*<sup>1</sup> for guiding the arms *m*<sup>1</sup> and a cam motion by which the bars *m*<sup>1</sup> are operated, substantially as specified. 6th. The combination of the racks *i*, having pivots *v*<sup>2</sup>, means for guiding



said pivots, lever arms  $\bar{v}$ , means of connection between the arms  $\bar{v}$  and the pivots  $\bar{v}^2$ , lever arms  $m$ , axles  $\bar{v}$ , to which said arms  $\bar{v}$  and  $m$  are fixed, reciprocating bars  $\bar{v}$  carrying the axles  $\bar{v}$ , bars  $m^1$  for guiding the arms  $m$ , sliding rod  $m^2$  to which said bars  $m^1$  are pivoted, disk  $m^3$  having cam grooves  $m^2$ ,  $m^3$ , pivots  $\bar{v}$  on bars  $m^1$ , engaging with cam groove  $m^2$ , lever  $m^4$ , having pivot  $\bar{v}$ , engaging in cam groove  $m^3$ , and means of connection between lever  $m^4$  and rod  $m^2$ , substantially as specified. 7th. The combination of the thread stretchers  $d^1$ ,  $d^2$ , shafts  $e^1$ ,  $e^2$ , having arms  $e$  that carry the said stretchers, cam disk  $f^1$ , levers  $d^3$ ,  $d^4$ , spring  $d^1$ , and means of connection between the levers  $d^3$ ,  $d^4$  and the respective shafts  $e^1$ ,  $e^2$ , whereby the latter are oscillated through the said levers, substantially as described. 8th. The combination of the thread stretchers  $d^1$ ,  $d^2$ , shafts  $e^1$ ,  $e^2$ , having arms  $e$ , cam disk  $f^1$ , having the recesses 1, 2, levers  $d^3$ ,  $d^4$ , spring  $d^1$ , cam disk  $f^2$ , with recess 3, levers  $d^1$ ,  $d^2$ , having arms  $d^1$ , a spring or springs pressing the levers  $d^1$ ,  $d^2$  against the disk  $f^2$ , and means of connection between the levers  $d^3$ ,  $d^4$  and the respective shafts  $e^1$ ,  $e^2$ , substantially as specified. 9th. The combination of the cam disk  $f^2$ , levers  $d^1$ ,  $d^2$ , torsional springs  $f^3$ ,  $f^4$ , levers  $f^3$ ,  $f^4$  and means for shifting the latter and securing them in different positions, substantially as set forth. 10th. The combination of the vertical sliding bars  $\bar{v}$ , horizontal slide  $\bar{v}$ , means of connection between the bars  $\bar{v}$  and the slide  $\bar{v}$ , whereby a reciprocating motion of the latter causes the former to move up and down in opposite directions, lever-arm  $\bar{v}$  having grooves  $f^3$ ,  $f^4$ , a pin  $\bar{v}$  on the slide  $\bar{v}$ , engaging with the groove  $f^3$ , crank  $\bar{v}$ , having pin  $\bar{v}$  engaging with the groove  $f^4$  and means for imparting oscillatory motion to the crank  $\bar{v}$ , substantially as specified. 11th. The combination of the bars  $\bar{v}$ , having rack-teeth, spur-wheel  $\bar{v}$ , gearing therewith, pinion  $\bar{v}$ , axle  $\bar{v}$ , lever-arm  $\bar{v}$ , having grooves  $f^3$ ,  $f^4$ , toothed slide  $\bar{v}$ , having pin  $\bar{v}$  engaging with the groove  $f^3$ , crank  $\bar{v}$ , having pin  $\bar{v}$  engaging with the groove  $f^4$ , and means for imparting oscillatory motion to the crank  $\bar{v}$ , substantially as specified. 12th. The combination of the vertical sliding bars  $\bar{v}$ , horizontal slide  $\bar{v}$ , means of connection between the bars  $\bar{v}$  and the slide  $\bar{v}$ , whereby a reciprocating motion of the latter causes the former to move up and down in opposite directions, lever arm  $\bar{v}$  having grooves  $f^3$ ,  $f^4$ , a pin  $\bar{v}$  on the slide  $\bar{v}$ , engaging with the grooves  $f^3$ , crank  $\bar{v}$ , having pin  $\bar{v}$  engaging with the groove  $f^4$ , means for imparting oscillatory motion to the crank  $\bar{v}$ , the vertically-adjustable piece composed of the horizontal guide bar  $\bar{v}$  and the vertical guide-bar B, rack  $\bar{v}$  fixed to bar B, pinion  $\bar{v}$ , ratchet-wheel  $\bar{v}$ , means of connection between the latter and the said pinion  $\bar{v}$ , feeding pall  $\bar{v}$ , retaining pall  $\bar{v}$ , rotating cams  $\bar{v}$ , and intermediate mechanism through which said cams  $\bar{v}$  operate the pall  $\bar{v}$ , substantially as hereinbefore set forth. 13th. The combination of the bar B, having the rack or pinion  $\bar{v}$ , ratchet-wheel  $\bar{v}$ , means of connection between the latter and the pinion  $\bar{v}$ , hollow axle  $\bar{v}$ , arm  $\bar{v}$ , loose on axle  $\bar{v}$ , axle  $\bar{v}$ , mounted on arm  $\bar{v}$ , feed pall  $\bar{v}$  and arm  $\bar{v}$ , with head  $\bar{v}$ , both fixed to said axle  $\bar{v}$ , shaft  $\bar{v}$ , having the disk  $\bar{v}$ , with grooves  $\bar{v}$ , disengager  $\bar{v}$ , shaft  $\bar{v}$ , with lever  $\bar{v}$ , means of connection between the shafts  $\bar{v}$  and  $\bar{v}$ , thread-stretchers  $d^1$ ,  $d^2$ , oscillating shafts  $e^1$ ,  $e^2$ , having arms  $e$  carrying the said stretchers, rods  $\bar{v}$ ,  $\bar{v}$ , means of connection between the shafts  $e^1$ ,  $e^2$  and the said rods, whereby these are shifted when the shafts  $e^1$ ,  $e^2$  are oscillated, and tappets  $\bar{v}$ ,  $\bar{v}$  on said rods, substantially as described. 14th. The arrangement of the bearings for the shafts  $\bar{v}$ ,  $\bar{v}$ , actuating the take-up hooks, and of the guides A<sup>12</sup>, for the slides A<sup>11</sup>, carrying the bars  $\bar{v}$  on the beams E, E<sup>1</sup>, which rigidly connect the standard  $\bar{v}$ , substantially as described.

**No. 32,819. Composition of Matter to be used in the Softening of Hard Water and Improving of Soft Water, and for Cleansing and Tanning purposes.** (*Composition de matières pour servir à adoucir l'eau dure et améliorer l'eau douce, et à des fins de nettoyage et de tannage.*)

Thomas L. Simmons, Winnipeg, Man., 13th November, 1889; 5 years.

*Claim*—A compound, composed of borax, silicate of soda, water and rose water, for cleansing and tanning purposes and for softening and improving water, substantially in the proportions and for the purposes set forth.

**No. 32,820. Dinner Pail.** (*Potager.*)

Michael J. O'Leary and Patrick J. Trainor, Toronto, Ont., 14th November, 1889; 5 years.

*Claim*—1st. The combination of the heating compartment or furnace D, with the vessels G and H, substantially as and for the purposes and in the manner hereinbefore set forth. 2nd. The combination of the heating compartment, with the plate  $\bar{v}$ ,  $\bar{v}$ , substantially as and for the purposes hereinbefore set forth. 3rd. The construction of the heating compartment D, so as to avoid smoke and odor.

**No. 32,821. Hay Press.** (*Presse à foin.*)

Doité Lamothe and Zacharie Thérien, St. Guillaume, Qué., 14th November, 1889; 5 years.

*Claim*—1st. In a hay press, the combination of the lever F having the wing pieces J, with the shaft D carrying the crank plates E, on which are fixed the lugs I, the connecting rod G and head H, substantially as shown and described. 2nd. In a hay press, the combination of the shaft D, crank plates E, with thin lugs I, and the lever F having the wing pieces J, with a press-box having the spring-hooks M and the top spring grip N, substantially as herein shown and described.

**No. 32,822. Slop Pail.** (*Seau aux ringures.*)

Roderick H. Lewis and George A. Gray, Montreal, Que., 14th November, 1889; 5 years.

*Claim*—1st. The use of a seal in combination with a slop pail, to

be used as an article of manufacture. 2nd. The combination of a slop pail, composed of body A, having outwardly and upwardly projecting flange C extending completely around same near its upper edge, and cover (F) having downwardly projecting annular flange E, arranged in such manner that said flange E will enter the space between the body A and flange C and form a seal, substantially as and for the purpose hereinbefore set forth, the same to be used as an article of manufacture.

**No. 32,823. Metallic Lathing.**

(*Lattis métallique.*)

The B. Greening Wire Co., (assignees of John Maw), Hamilton, Ont., 14th November, 1889; 5 years.

*Claim*—In a metallic lathing, a sheet of metal c pressed to a series of sharp defined angles to obtain rigidity openings D at certain distances along the corrugations, and the cuttings E set out on a plane, all formed, arranged and combined substantially as and for the purpose hereinbefore set forth.

**No. 32,824. Machine for Cutting Cloth.**

(*Machine à tailler les draps.*)

John Penman, (assignee of Richard Schofield), Paris, Ont., 14th November, 1889; 5 years.

*Claim*—1st. A disc having a knife-edge and fastened to a spindle connected to, and deriving motion from a flexible driving shaft, the said spindle being journaled in a bracket, provided with a handle and attached to a foot to support the bracket and extending along the surface of the disc forms a support for the fabric being cut by the said disc, substantially as and for the purpose specified. 2nd. A disc having a knife-edge and fastened to a spindle connected to, and deriving motion from a flexible driving-shaft, the said spindle being journaled in a bracket, provided with a suitable handle, and adjustably connected to a standard, having a foot extending along the surface of the disc to form a support for the fabric being cut by the said disc, substantially as and for the purpose specified. 3rd. A disc having a knife-edge fastened to a spindle connected to, and deriving motion from a flexible driving-shaft, the said spindle being journaled in a bracket, provided with a suitable handle, and connected to a standard having a foot extending along the surface of the disc, to form a support for the fabric on one side of the disc, and a ledge adjustably connected to the said foot, and extending past the edge of the disc, to form a support for the fabric on its opposite side, substantially as and for the purpose specified. 4th. A disc having a knife-edge and fastened to a spindle connected to, and deriving motion from a flexible driving-shaft, the said spindle being journaled in a bracket provided with a suitable handle, and adjustably connected to a standard having a foot extending along the surface of the disc, to form a support for the fabric on one side of the disc, and a ledge connected to the said foot and extending past the edge of the disc to form a support for the fabric on its opposite side, substantially as and for the purpose specified. 5th. A disc having a knife-edge and fastened to a spindle connected to, and deriving motion from a flexible driving-shaft, the said spindle being journaled in a bracket provided with a suitable handle, and adjustably connected to a standard having a foot extending along the surface of the disc, to form a support for the fabric on one side of the disc, and a ledge adjustably connected to the said foot and extending past the edge of the disc, to form a support for the fabric on its opposite side, substantially as and for the purpose specified. 6th. A disc having a knife-edge, and fastened to a spindle connected to, and deriving motion from a flexible driving-shaft, the said spindle being journaled in a bracket provided with a suitable handle, and adjustably connected to a standard having a foot extending along the surface of the disc, to form a support for the fabric on one side of the disc, the said foot resting upon, and adjustably connected to a plate having a projecting ledge extending past the edge of the disc, to form a support for the fabric on its opposite side, substantially as and for the purpose specified. 7th. A flexible shaft K connected at one end to a spindle L deriving a rotary motion from some suitable motor, and at its other end to a spindle B of the disc A, and suitably supported as described, in combination with the elastic band M arranged to support the flexible shaft K, substantially as and for the purpose specified.

**No. 32,825. Machine for Corking Bottles and Wiring the Corks thereto.**

(*Machine à boucher les bouteilles.*)

Sol Wile, (co-inventor with Henry La Casse), Rochester, N.Y., U.S., 14th November, 1889; 5 years.

*Claim*—1st. The herein described bottle wiring machine having the following mechanisms, to wit: for securing strands of wire to the bottle for turning the wire over the top of the bottle and the inserted cork, and for securing the wire in said position, and connected mechanism for operating the foregoing in due order, substantially as described. 2nd. The herein described bottle wiring machine having the following mechanisms, to wit: for securing strands of wire to the bottle for turning their opposite extremities upward, and for then twisting them together over the top of the bottle, and the inserted cork and connected mechanism for operating the foregoing in due order, substantially as described. 3rd. The combination of the following mechanisms, to wit: for secured strands of wire to the bottle, for inserting a cork into the bottle for turning the wire over the top of the bottle and the inserted cork, and for securing the wire in said position, and connected mechanism for operating the foregoing parts conjointly in due order, substantially as specified. 4th. The herein described bottle wiring machine having the following mechanisms, to wit: for applying separate strands of wire to the bottle, for twisting together the extremities of the separate strands, for turning the twisted extremities over the top of the bottle and the inserted cork, and for then twisting together the twisted opposite extremities of the separate strands, and connected mechanism for operating the foregoing in due order, substantially as described. 5th. The combi-



nation of a bottle support with a cork inserter, means for securing the wire to the bottle and over the cork, said means being arranged to operate conjointly with the cork inserter, and connected mechanism for actuating the wire securing means and cork inserter in due order, substantially as and for the purpose set forth. 6th. The combination of a cork inserter for inserting the cork, mechanism for securing the wire to the bottle, and connected mechanism between the parts for actuating the cork inserter to insert the cork into the bottle during the operation of the wire securing mechanism in securing the wire to said bottle, substantially as and for the purpose set forth. 7th. The combination of a bottle support for holding the bottle, a cork inserter having a movement towards and away from the supported bottle, wire securing mechanism having a movement towards and away from said supported bottle, and connected mechanism for conjointly operating the cork inserter and wire securing mechanism, substantially as and for the purpose set forth. 8th. The combination of a bottle support, a cork inserter for inserting the cork, mechanism for actuating the cork inserter towards and away from the supported bottle, mechanism for securing the wire to the bottle with the extremities projecting therefrom, mechanism for actuating the wire securing device towards and away from the supported bottle, connected mechanism for conjointly operating the cork inserter and wire securing mechanism, substantially as and for the purpose set forth. 9th. The combination of a bottle support, means for securing the wire to the bottle, a cork inserter for inserting the cork, mechanism for passing the wire over the top of the bottle and the inserted cork, mechanism for securing the wire in said position, a feed or carrier for feeding the bottles from the cork inserter, and the mechanism for securing the wire to the bottle, to the mechanism for securing the wire over the top of the cork, and connected mechanism for operating the parts in due order, substantially as and for the purpose described. 10th. The combination of mechanism for securing the wire to the bottle, with its ends projecting therefrom, said mechanism being actuated to encircle the bottle, mechanism for passing the wire over the top of the bottle, and the inserted cork mechanism for securing the opposite extremities of the wire together, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose set forth. 11th. The combination of wire securing jaws or arms for securing the wire to the bottle with the opposite extremities projecting therefrom, a cork inserter for forcing the cork between said arms, mechanism for turning the wire over the top of the bottle, and cork mechanism for securing the wire in said position, and connected mechanism for operating said parts in due order, substantially as and for the purpose specified. 12th. The combination of the compressor for compressing the cork, means for holding the compressor normally open to receive the cork, with the following mechanisms, to wit: for securing the wire to the bottle with its extremities projecting therefrom, for inserting the cork into the bottle, for passing the extremities of the wire over the top of the bottle and the inserted cork, and for securing the extremities in said position, and connected mechanism between the several parts for operating them in due order, substantially as and for the purpose specified. 13th. The combination of wire securing mechanism for securing the wire to the bottle with its extremities projecting therefrom, a reciprocating compressor timed with the wire securing mechanism, and a cork inserter with the following mechanisms, to wit: for passing the wire over the top of the bottle and the inserted cork, and connected mechanism for operating the foregoing parts conjointly in due order, substantially as described. 14th. The combination of reciprocating wire securing mechanism, for securing the wire to the bottle with the extremities projecting therefrom, a reciprocating compressor timed with the reciprocating wire securing mechanism, and a cork inserter with the following mechanisms, to wit: for passing the wire over the top of the bottle and the inserted cork, and for securing the wire in said position, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose specified. 15th. The combination of a compressor for compressing the cork, reciprocating jaws for securing the wire to the bottle with the opposite extremities projecting therefrom, and a cork inserter for inserting the cork with the following mechanisms, to wit: for passing the wire over the top of the bottle and the inserted cork, for securing the wire in said position, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose set forth. 16th. The combination of a wire carrier having a movement towards and away from the bottle oscillating jaws mounted on the wire carrier, for securing the wire around the bottle with the opposite extremities projecting therefrom, mechanism for passing the wire over the top of the cork, mechanism for securing the wire in said position, and connected mechanism for operating the foregoing parts in due order, substantially as and for the purpose set forth. 17th. The combination of yielding jaws encircling the bottle for securing the wire thereto with its extremities projecting therefrom, mechanism for withdrawing the yielding jaws around the bottle with the following mechanisms, to wit: for turning the extremities of the wire over the top of the bottle and cork, for securing the wire in said position, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose described. 18th. In a wiring machine, the combination of the following mechanisms, to wit: for securing the wire to the bottle, with the extremities of the wire projecting therefrom, for actuating said wire securing device lengthwise of the bottle, for passing the wire over the top of the bottle and for securing the wire in said position, and mechanism operatively connecting the foregoing parts, substantially as specified. 19th. The combination of a bottle support for the bottle, a cork inserter having a movement towards and away from the supported bottle, wire securing mechanism having a movement towards and away from the said supported bottle, and also having a movement lengthwise of the bottle, and connected mechanism for actuating the cork inserter, and wire securing mechanism to operate conjointly upon said bottle, substantially as and for the purpose set forth. 20th. In a wiring machine, the combination of a bottle support for the bottle, mechanism for securing the wire to the bottle with the extremities projecting therefrom, said mechanism having a movement towards and away from the bottle, and also a movement lengthwise of the same, mechanism for turning the projecting extremities over the top of the bottle and the inserted cork,

mechanism for securing the wire in said position, and connected mechanism between the parts for operating the same in due order, substantially as specified. 21st. In a wiring machine, the combination of yielding reciprocating jaws or arms for securing the wire to the bottle, with the opposite extremities projecting therefrom, mechanism for actuating said jaws lengthwise of the bottle, mechanism for passing the wire over the top of the bottle and the inserted cork, mechanism for securing the wire in said position, and connected mechanism between the parts, substantially as and for the purpose specified. 22nd. The combination, in a wiring machine having the following mechanisms, to wit: for applying the separate strands of wire to the bottle with their extremities projecting therefrom, for twisting together these projecting extremities and for automatically withdrawing the wire, twisting mechanism for turning the twisted projecting extremities over the top of the bottle and cork, and for securing the wire in said position, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose set forth. 23rd. The herein described wiring machine having the following mechanisms, to wit: for securing separate strands of wire to the bottle with their extremities projecting therefrom, for twisting together these projecting extremities, for automatically withdrawing the wire, twisting mechanism for turning the twisted projecting extremities over the top of the bottle and cork, and for twisting together these twisted extremities in said position, and mechanism operatively connected to the foregoing parts, substantially as and for the purpose set forth. 24th. In a wiring machine, the combination of shuttle jaws or arms for applying the separate strands of wire to the bottle, means for rotating the shuttle jaws or arms to twist the said strands together, mechanism for turning the twisted extremities over the top of the bottle and the inserted cork, mechanism for securing the wire in said position, and connected mechanism between the parts, substantially as and for the purpose specified. 25th. In a wiring machine, the combination of a wire carrier having a movement towards and away from the bottle for applying the wire to the bottle with the extremities projecting therefrom, arms secured to the carrier encircling the bottle on the forward movement of the carrier, and forced around the bottle by the retraction of the carrier, means for rotating the arms when withdrawn clear of the bottle, said rotating means adapted to cease operation when the rearward movement of the carrier is reached, with mechanism for turning the opposite extremities of the wire over the top of the bottle and cork, mechanism for securing the wire in said position, and connected mechanism between the parts, substantially as and for the purpose specified. 26th. The combination of an adjustable bottle support with the following mechanisms, to wit: for securing the wire to the bottle with its extremities projecting therefrom, for passing the wire over the top of the bottle and the inserted cork, and for securing the wire in said position, and connected mechanism between the parts, substantially as and for the purpose set forth. 27th. The combination, with the following mechanisms, to wit: for securing the wire to the bottle with its extremities projecting therefrom, for passing the wire over the top of the bottle and the inserted cork, and for securing the wire in said position, of an adjustable bottle support in its adjusted position, substantially as and for the purpose set forth. 28th. The combination of an adjustable bottle support with a cork inserter having a movement towards and away from said support, wire securing mechanism having a movement towards and away from said support, and connected mechanism for conjointly operating the foregoing parts, substantially as and for the purpose set forth. 29th. In a wiring machine, the combination, with means for securing the wire to the bottle, of a bottle support, a feed or carrier for feeding the bottle to the support, mechanism for lowering the bottle support before a new bottle is fed thereto, mechanism for raising the support to contact with the bottle, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose set forth. 30th. The combination of an adjustable bottle support and a feed or carrier for feeding the bottles to said support, of a cork inserter having a movement towards and away from the bottle support, wire securing mechanism having a movement towards and away from the bottle, and connected mechanism between the parts for operating them conjointly in due order, substantially as and for the purpose set forth. 31st. The combination, in a wiring machine, of wire securing mechanism for securing the wire to the bottle and over the top, of the inserted cork with a bottle support for holding the bottle, a rotary shank provided on the bottle support, mechanism for turning said shank and raising or lowering the bottle support, and connected mechanism between the parts, substantially as and for the purpose set forth. 32nd. The combination of a bottle support for the bottles, a rotary shank provided on the bottle support, and connected mechanism for automatically turning said shank and raising or lowering the bottle support, substantially as and for the purpose set forth. 33rd. The combination of a compressor for compressing the cork, said compressor having a movement towards and away from the bottle, a cork inserter, a bottle support for the bottle, means for adjusting the bottle support to suit different heights of bottles, means for retaining the support in its adjusted position, mechanism for securing the wire to the bottle with its extremities projecting, mechanism for passing the wire over the top of the bottle and the inserted cork, mechanism for securing the wire in said position, and connected mechanism between the parts for operating them in due order, substantially as and for the purpose set forth. 34th. The combination, in a wiring machine, of mechanism for securing the separate strands of wire around the bottle, mechanism for twisting together the projecting extremities of said strands, with a cut off for severing the wire secured to the bottle from the wire twisting mechanism, mechanism for turning the opposite extremities of the wire over the top of the bottle and the inserted cork, mechanism for securing the wire in said position, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose as set forth. 35th. The combination, in a wiring machine, of wire securing means having a movement towards and away from the bottle, a cut off for cutting off the wire at the end of the rearward movement of the wire securing means, mechanism for turning the extremities of the wire over the top of the bottle and the inserted cork, mechanism for securing the wire in said position, and mechanism for operating the aforesaid parts in due order, substantially as

and for the purpose set forth. 36th. The combination, in a wiring machine, of wire securing mechanism having a movement towards and away from the bottle, means for turning the wire securing mechanism and thus twisting the wire, a cut off for cutting off the wire at a point substantially midway between the bottle and the wire securing mechanism when in its retracted position, mechanism for turning the extremities of the wire over the top of the bottle, mechanism for securing the wire in said position, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose specified. 37th. The combination of a rotary bottle carrier, a cork inserter, means for securing the wire to the bottle and over the cork, said means being arranged to operate conjointly with the cork inserter, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose specified. 38th. The combination of a bottle support for the bottles, a cork inserter having a movement towards and away from the support, wire securing mechanism having a movement towards and away from the said support, a feed or carrier for feeding the bottles over said support, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose specified. 39th. In a wiring machine, the combination of wire securing mechanism for securing the wire to the bottles with the extremities projecting therefrom, mechanism for twisting the wire over the top of the bottle and cork, a bottle feed or carrier for feeding the bottles to the wire securing mechanism, and then to the device for twisting together the opposite extremities of the wire, and connected mechanism between the parts for operating them in due order, substantially as and for the purpose specified. 40th. The combination of a cork inserter, means for securing the wire around the bottle with its extremities projecting therefrom, mechanism for turning the said extremities over the top of the bottle and cork, and mechanism for twisting the said extremities together, with a bottle feed or carrier having bearings for the bottles arranged at intervals corresponding to the relative distance between the cork inserter and the device for twisting together the extremities of the wire, and connected mechanism between the parts for operating them in due order, substantially as and for the purpose set forth. 41st. The combination of a bottle feed or carrier having pivoted arms for grasping the bottle, of the following mechanisms, to wit: for securing strands of wire to the bottle with their extremities projecting therefrom, for passing the wire over the top of the bottle and the inserted cork, and for securing the wire in said position, and connected mechanism between the parts, substantially as and for the purpose set forth. 42nd. The combination of the cork inserter and means for securing the wire to the bottle and over the top of the cork, said wire securing means being arranged to operate conjointly with the cork inserter, with a bottle feed or carrier having oscillating arms for grasping the bottle and feeding it to said mechanism, and mechanism for operatively connecting the aforesaid parts and actuating them in due order, substantially as and for the purpose set forth. 43rd. In a wiring machine, the combination of a bottle support for the bottles, wire securing mechanism for securing the wire to the bottle with the extremities projecting therefrom, mechanism for turning the wire over the top of the bottle and the inserted cork, mechanism for securing the wire in said position, a carrier for feeding the bottles, means for discharging the bottles, and connected mechanism for operating the parts in due order, substantially as and for the purpose set forth. 44th. The combination of a bottle support for the bottles, a cork inserter having a movement towards and away from said support, wire securing mechanism having a movement towards and away from the said support, a feed or carrier feeding the bottle over the support, mechanism for discharging the bottles from the carrier, and connected mechanism between the foregoing for operating them in due order, substantially as and for the purpose set forth. 45th. The combination of the cork inserter, mechanism for securing the wire to the bottle and over the top of the cork, said mechanism being arranged to operate conjointly with the cork inserter, with a bottle feed or carrier arms provided on the carrier and held normally open to receive the bottles, and connected mechanism between the parts for operating them in due order, substantially as specified. 46th. The combination, in a wiring machine, of mechanism for securing the wire around the bottle with its extremities projecting therefrom, a bottle feed or carrier for feeding the bottles, oscillating lifting arms for elevating the opposite extremities of the wire secured to the bottle, mechanism for twisting together these extremities, and connected mechanism for operating the foregoing in due order, substantially as and for the purpose specified. 47th. The combination, in a wiring machine, of mechanism for securing the wire to the bottle with the extremities projecting therefrom, a rotary bottle feed or carrier for feeding the bottles, mechanism for turning the extremities of the wire upwards over the top of the bottle and the inserted cork, and connected mechanism between the parts, substantially as and for the purpose specified. 48th. The combination of a stop or gauge for forcing the bottles to the desired plane, of the following wire securing mechanisms, to wit: for securing strands of wire to the bottle, for passing the wire over the top of the bottle and the cork, and for securing the wire in said position, and connected mechanism between the parts, substantially as and for the purpose set forth. 49th. The combination of a support for the bottles, a cork inserter having a movement towards and away from the support, wire securing mechanism having a movement towards and away from said support, a stop or gauge for bringing the bottles into the required plane, and connected mechanism between the parts, substantially as and for the purpose set forth. 50th. The combination of a support for the bottle, a cork inserter having a movement towards and away from the support, wire securing mechanism having a movement towards and away from said support, a feed or carrier for feeding the bottles down to the desired position in said carrier, and mechanism for operatively connecting the aforesaid parts, substantially as described. 51st. The combination, in a wiring machine, of a support for the bottle, wire securing mechanism for securing the wire to the bottle and over the top of the cork, said wire securing mechanism being arranged to operate conjointly with the cork inserter with a bottle feed or carrier for feeding the bottles, oscillating arms mounted on the carrier, a stop or gauge for contacting with the bottle, mechanism for impinging the oscillating jaws against the bottle,

and connected mechanism for operating the foregoing in due order, substantially as and for the purpose set forth. 52nd. The combination of a cork inserter for inserting the cork, a spool having two separate feeding strands wound thereon, and mechanism for feeding out the wire with the following mechanisms for securing the wire, to the bottle with its extremities projecting therefrom for passing the wire over the top of the bottle and the inserted cork, for securing the wire in said position, and connected mechanisms for operating the foregoing parts in due order, substantially as and for the purpose set forth. 53rd. The combination of mechanism for securing the wire around the bottle with its extremities projecting therefrom, oscillating arms for acting on said extremities, of the wire mechanism for locking and rotating the oscillating arms, and connected mechanism for operating the said working parts, substantially as specified. 54th. The combination, in a wiring machine, of mechanism for securing the wire around the bottle with its extremities projecting therefrom, means for elevating the projecting extremities of the wire, oscillating arms or nippers for twisting together projecting extremities over the top of the cork, a bottle feed or carrier for feeding the bottles, mechanism for actuating the wire twisting arms or nippers towards and away from the bottle feed or carrier, and connected mechanism between the parts for operating the same in due order, substantially as and for the purpose set forth. 55th. The combination, in a wiring machine, of mechanism for securing the wire to the bottle with its extremities projecting therefrom, means for elevating these projecting extremities of the wire, oscillating arms or nippers for twisting together the projecting extremities of the wire, mechanism for locking these arms or nippers upon the wire, mechanism for unlocking these arms, and connected mechanism between the parts for operating them in due order, substantially as and for the purpose set forth.

### No. 32,826. Hydro-Carbon Heater. (*Calorifere à hydrocarbures.*)

Henry C. Davis and William E. Donaghoe, Terre Haute, Ind., U.S.,  
14th November, 1889; 5 years.

*Claim.*—1st. In a hydro-carbon burning apparatus, the combination of the burners, a hydro-carbon retort situated in position to be acted upon directly by the flame from the burners, a water heater arranged to be heated by the said flame, but so situated as not to be acted upon directly thereby, a mixing chamber and the connecting pipes between the vapor retort and water heater and the mixing chamber, substantially as set forth. 2nd. In a hydro carbon burning apparatus, the combination of the burners, a casing divided to form a retort c and a superheater A, connected with each other by the pipe g, a water heater heated by the said burners, but arranged away from immediate proximity thereto, a mixing chamber, and the connecting pipes between the superheater and the mixing chamber, and the water heater and the mixing chamber, substantially as set forth. 3rd. In a hydro-carbon burning apparatus, the combination of the burners, the oil retort C and the superheater A situated above the burners, the pipe g connecting the retort and the superheater, the water heater arranged above the retort and superheater, and the conducting pipes for leading the hydro-carbon vapor and the steam to the burner, substantially as set forth. 4th. A water heater consisting of a casing having inlet and outlet openings, a filling composed of pieces of a refractory substance which acts as a filter, to collect the scale-forming substances from the water inlet and outlet pipes for the water, and a heating device, substantially as set forth.

### No. 32,827. Coffee Cleauer and Separator. (*Nettoyeur et séparateur du café.*)

Chancey J. Pickett, Willard J. Brotherton and Henry N. Watrous,  
Bay, Mich., U.S., 14th November, 1889; 5 years.

*Claim.*—1st. In a coffee cleaning machine, the spout I, blower B, blast-duct E, direction-board O, and screens Y, Y, substantially as described. 2nd. In a coffee cleaning machine, the spout I, blower B, blast-duct E, direction-board O, wind-chamber Q, screens Y, Y, and drawers c, d, P, substantially as described. 3rd. The herein described process, which consists in blowing the berries at a restricted opening away from the stones, etc., with a rapidly expanding wind-chamber, then sorting the berries by sieves, substantially as described.

### No. 32,828. Embroidery Machine. (*Machine à broderie.*)

James Irish, Bridgeport, Conn., and James McVicar, New York,  
N.Y., U.S., 14th November, 1889; 5 years.

*Claim.*—1st. The combination, with a tambour frame, of a rotative actuating shaft by which said frame is moved in opposite directions, and movable stops for arresting said frame in various positions, whereby the length of the stitches is determined, substantially as described. 2nd. The combination, with a tambour frame, of a rotative actuating shaft by which said frame is moved in opposite directions, whereby the length of the stitches is determined, and a pattern mechanism for controlling said stops, substantially as described. 3rd. The combination, with a tambour frame, of a rotative actuating shaft, by which said shaft is moved in opposite directions, whereby the length of the stitches is determined, and a yielding connection between said shaft and its driver, substantially as described. 4th. The combination, with a tambour frame, of a rotative actuating shaft by which said frame is moved in opposite directions, whereby the length of the stitches is determined, and a yielding connection between said shaft and its driver, substantially as described. 5th. The combination, with the tambour



according to the direction in which said gear is revolved, and a yielding connection through which said gear is driven, of an arm 83 moving with said gear and frame, and a series of movable stops 86 for arresting the arm and frame as they are moved in either direction without arresting the driving mechanism, substantially as described. 41st. The combination, with the tambour frame of an embroidery machine, a gear 60 or 69 for moving the same and a yielding connection through which said gear is driven, of an arm 83 moving with said gear and frame, and a series of movable stops 86 for arresting the arm and frame without arresting the driving mechanism, and a pattern mechanism for controlling said stops, substantially as described. 42nd. The combination with the tambour frame, of an embroidery machine, a gear 60 or 69 for moving the same in opposite directions, according to the direction in which said gear is revolved, and a yielding connection through which said gear is driven, of an arm 83 moving with said gear and frame, and a series of movable stops 86 for arresting the arm and frame as they are moved in either direction without arresting the driving mechanism, and a pattern mechanism for controlling said stops, substantially as described. 43rd. The combination, with the tambour frame of an embroidery machine, a gear 60 or 69 for moving the same, and a yielding connection through which said gear is driven, of an arm 83 moving with said gear and frame, and a series of movable stops 86 for arresting the arm and frame without arresting the driving mechanism, and a reciprocating frame 89 acting upon said stops to restore them to their normal position, substantially as described. 44th. The combination, with the tambour frame of an embroidery machine, a gear 60 or 69 for moving the same, and a yielding connection through which said gear is driven, of an arm 83 moving with said gear and frame, and a series of movable stops 86 for arresting the arm and frame without arresting the driving mechanism, and means for imparting a slight backward movement to said arm after it has been arrested to release the stop, substantially as described. 45th. The combination, with the tambour frame of an embroidery machine, a gear 60 or 69 for moving the same, and a yielding connection through which said gear is driven, of an arm 83 moving with said gear and a frame, a series of movable stops 86 for arresting the arm and frame without arresting the driving mechanism, the series of recesses 2 corresponding to the stops, and the reciprocating bar 99 carried by the arm 83 and arranged to enter one of said recesses after the arm is arrested, and move the arm slightly backward to release the stop, substantially as described. 46th. The combination, with the tambour frame of an embroidery machine, a driving shaft therefor, and a yielding connection through which the movement of said shaft is transmitted to the frame, of an arm (83) moving with said frame, and a series of movable stops for arresting said arm and frame without arresting the driving mechanism, substantially as described. 47th. The combination, with the tambour frame of an embroidery machine, a driving shaft therefor, and a yielding connection through which the movement of said shaft is transmitted to the frame, of an arm 83 moving with said frame, and a series of movable stops for arresting said arm and frame without arresting the driving mechanism, and a reciprocating frame (89) acting upon said stops to restore them to their normal position, substantially as described. 48th. The combination, with the tambour frame of an embroidery machine, a driving shaft therefor, and a yielding connection through which the movement of said shaft is transmitted to the frame, of an arm 83 moving with said frame, and a series of movable stops for arresting said arm and frame without arresting the driving mechanism, and means for imparting a slight backward movement to said arm after it has been arrested to release the stop, substantially as described. 49th. The combination, in an embroidery machine, of a driving shaft R, a loose gear 63 or 64, means for imparting its movement to the tambour frame, a clutch for connecting and disconnecting said gear to and from the shaft, a movable rod 27 or 28 connected to operate said clutch to clutch the gear, and a reciprocating head 56 arranged to engage with rod or not, according to the position of the rod, substantially as described. 50th. The combination, in an embroidery machine, of a driving shaft R, a loose gear 63 or 64, means for imparting its movement to the tambour frame, a clutch for connecting and disconnecting said gear to and from the shaft, a movable rod 27 or 28 connected to operate said clutch to clutch the gear, and a pattern mechanism for controlling the position of said rod, substantially as described. 51st. The combination, in an embroidery machine, of a driving shaft R, a loose gear 63 or 64, means for imparting its movement to the tambour frame, a clutch for connecting and disconnecting said gear to and from the shaft, a movable rod 27 or 28 connected to operate said clutch to clutch the gear, and a reciprocating head 56 arranged to engage with said rod or not, according to the position of the rod, and a cam 78 for operating said clutch to unclutch the gear, substantially as described. 52nd. The combination, in an embroidery machine, of a driving shaft R, loose reversing gears 63-64, means for imparting their movement to the tambour frame in reverse directions, clutches for connecting and disconnecting said gears to and from their shaft, movable rods 27-28 connected to operate said respective clutches to clutch the gears, and a reciprocating head 56 arranged to engage with one of said rods or not according to the position of the rods, and a pattern mechanism for controlling the position of said rods, substantially as described. 53rd. The combination, in an embroidery machine, of a driving shaft R, loose reversing gears 63-64, means for imparting their movement to the tambour frame in reverse directions, clutches for connecting and disconnecting said gears to and from their shaft, movable rods 27-28 connected to operate said respective clutches to clutch the gears, and a reciprocating head 56 arranged to engage with one of said rods or not according to the position of the rods and a cam 73 for operating said clutches to unclutch the gears, substantially as described.

### No. 32,829. Self-Generating Gas Burner for Burning Oil. (*Foyer générateur à gaz d'huile.*)

The Lucigen Light Company, Westminster (assignee of George S. Grimston, Greenwich), Eng., 14th November, 1889; 5 years.

*Claim.*—1st. In a self-generating gas burner for burning oils or other combustible liquids, the combination of an oil pan having a central adjustable air supply passage, a cover having an internal steam generating coil and inner perforated casing, and a steam jet nozzle in the air passage, substantially as described. 2nd. In combination with a burner, such as is above referred to, a closed oil reservoir and pipe leading to the burner pan, the said pipe opening into the pan below the oil level therein, and being provided with a lateral air port, substantially as and for the purpose set forth. 3rd. In combination with a burner and oil reservoir, such as are above referred to, a water tank and air compressing pump, substantially as described.

### No. 32,830. Safety Pin. (*Épingle de sûreté.*)

Edward McConnell, Cape Girardeau, Mo., and John W. Lambert, Summers, Va., U.S., 14th November, 1889; 5 years.

*Claim.*—1st. As an improved article of manufacture, a safety pin constructed of a single piece of wire, this wire being formed into a large guard-coil A and a longer flexible body coil B, this body coil being of less diameter than the said guard coil, and having its inner end abutting the inner end of the same, whereby the coils are mutually braced and a crescent-shaped opening *a* is formed for the reception of the point of the securing pin, and a pin C formed of a continuation of the outer end of the body-coil and bent so as to enter the said opening *a*, substantially as described. 2nd. As an improved article of manufacture, a safety pin constructed of a single piece of wire, this wire being formed into a spring guard coil at one end, a long spring body coil of less diameter than the guard coil and setting up close against the inner end of the latter, thereby bracing the two coils and forming a crescent-shaped opening for the reception of the securing pin and the pins, substantially as described.

### No. 32,831. Liquid Heater. (*Chaudière à liquide.*)

Louis Breithaupt and Company (assignees of John Hutchison), Berlin, Ont., 14th November, 1889; 5 years.

*Claim.*—1st. In a liquid heater, the combination of a closed conductor B, communicating with the supply tank and provided with a series of cocks *p*, a series of open troughs C disposed transversely to the conductor, with a slight fall from the latter, a collecting trough D under the lower ends of said troughs, a steam pipe E at the bottom of each trough C, provided with a valve E', and branching from a trunk pipe E'', and a collector F receiving the condensation from the pipes E, substantially as set forth. 2nd. In a liquid heater, the combination of a series of open V-shaped troughs placed side by side and having a slight fall from the supply end to the discharge end, and each fitted with a steam pipe lying at its bottom and branching at the discharge end of the troughs from a common trunk pipe, a liquid conductor disposed transversely over the supply ends of the troughs and provided with means of allowing the liquid to flow at any desired rate into each trough, and each steam pipe provided with a valve to regulate the supply of steam, substantially as set forth.

### No. 32,832. Drain Valve. (*Soupape de drain.*)

The Consolidated Car Heating Company, Wheeling, W. V. (assignee of James F. McElroy, Albany, N. Y.), U. S., 14th November, 1889; 5 years.

*Claim.*—1st. In a valve of the kind described, a supplementary adjustable aperture or slot independent of the valve-disc, whereby a permanent opening is left for the escape of the contained fluid, substantially as described. 2nd. In a valve of the kind described, in combination with the inclined valve seat, of the slot opening into the exit of the valve, of the screw-threaded spindle to adjust the size of said opening, arranged substantially at right angles to the inclined side of the disc, substantially as described. 3rd. In a valve of the kind described, the combination, with the inclined valve seat, of the slot opening into the exit opening of the valve, of the screw-threaded spindle adapted to adjust the size of said opening, of the stuffing box around said spindle, and of the wrench to hold said spindle being substantially at right angles to the in-line face of the disc, substantially as described. 4th. In combination with an angle-valve having an independent adjustable aperture controlled by the screw-threaded spindle passing through the stuffing box, of the inlet pipe H, exit pipe I and non-conducting pipe cover M, the parts being arranged to operate substantially as and for the purpose described.

### No. 32,833. Electric Cut-out.

(*Interrupteur électrique.*)

James L. Kimball and Herbert C. Wirt, Boston, Mass., U.S., 15th November, 1889; 5 years.

*Claim.*—1st. In an electric cut-out, the combination, with a base provided with contact arms secured thereto and to which the line wires may be connected, of a cap or rosette provided with contact arms extended beyond the said cap or rosette, and means to secure positive electrical connection between the contact arms of the cap and base outside of the said cap, substantially as described. 2nd. In an electric cut-out, the combination, with a flat base *a* and contact arms secured thereto and to which the line wires may be connected, screws *a'*, *a''*, secured to said contact arms, and a cap or rosette provided with contact arms *b*, *b'*, extended beyond the sides of the cap and provided respectively with slots to engage the screws *a'*, *a''*, on the contact arms secured to the base, substantially as described. 3rd. In an electric cut-out, the combination, with a base



provided with two sets of contact arms secured thereto to form a main line, and a branch line or circuit, and fuse wires secured directly to the said sets of contact arms to establish electrical connection from the main to the branch line, of a cap or rosette provided with contact arms extended beyond the sides of the cap and adapted to be secured to said base outside of the said cap, substantially as described.

### No. 32,834. Shell. (*Bombe.*)

James J. Moore, Merryville, La., U. S., 15th November, 1889; 5 years.

*Claim.*—In a projectile, the combination of a shell having a longitudinal bore or chamber at its rear end, a breech pin or plug at the rear end of the same, a longitudinally movable cartridge arranged in said bore or chamber, curved springs secured in the sides of the latter and impinging against the sides of the cartridge, thereby retaining the latter in position by frictional contact with said springs, and a percussion cartridge mounted upon a nipple at the front end of said cartridge, substantially as set forth.

### No. 32,835. Posting and Copying Guide.

(*Guide de teneur de livres et de copiste.*)

Harry H. Love, Sacramento, Cal., U. S., 15th November, 1889; 5 years.

*Claim.*—1st. The posting or copying guide consisting of the parallel opaque plates with the transverse rods extending between them, guides in which said rods slide so as to allow the plates to be moved with relation to each other, and set screws whereby they are held at any given point, substantially as herein described. 2nd. The copying guide consisting of the parallel opaque plates with the transverse adjusting rods and set screws, and the hooks or guides fixed at one end of the plates, substantially as and for the purpose herein described.

### No. 32,836. Animal Catcher. (*Piège.*)

Clayton Wisdom, Flat Rock, Mich., U. S., 15th November, 1889; 5 years.

*Claim.*—1st. In an animal catcher, the combination, with a stationary and movable jaw, of the shank B provided with the round socket C and square socket D, and the pole correspondingly formed to detachably engage into these sockets, substantially as described. 2nd. In an animal catcher, the combination, of the stationary jaw A provided with the shank B, the round and square sockets C and D formed therein, the pole M with its end formed to detachably engage in these sockets, the ring E and the movable jaw F provided with the shank H and rope L, all arranged and combined to operate substantially as described.

### No. 32,837. Document and Letter File or Holder. (*Serre-papier.*)

Edmund W. Woodruff, Washington, D. C., U. S., 15th November, 1889; 5 years.

*Claim.*—1st. The combination, with the upright letter holder having an open side, of the lateral file-board or follower operating in planes parallel with the front of the case, substantially as set forth. 2nd. The combination, with the upright letter holder having the open side, of the lateral file-board or follower operating in planes parallel with the front of the case, and a card or leaf index arranged within said holder, with its leaves parallel with the sides of the holder and its marked or indicated edge situated at the top of said holder, substantially as set forth. 3rd. The combination, with the upright letter holder having an open side, of the lateral file-board or follower operating in planes parallel with the front of the case, and a support engaging said follower and adapted to support the same in an inclined position at the side of said holder, substantially as set forth. 4th. The combination, with the upright letter holder having an open side, of the lateral file-board or follower operating in planes parallel with the front of the case, a support engaging said follower and adapted to support the same in an inclined position at the side of said holder, and a slide situated beneath said holder and adapted to sustain the same when drawn out, substantially as set forth. 5th. The combination, with the cabinet or case A, of the document and letter holders of uniform appearance, said document holder being provided with a file-board or follower operating in planes at right angles to the front of the holder, and the upright letter holder having an open side and a lateral follower operating in planes parallel with the front of the holder, substantially as set forth. 6th. As a means for filing papers, the combination, with the cabinet or case A of the document holder provided with a file-board or follower operating in planes at right angles to the front of the holder, and the upright letter holder having an open side and provided with a lateral follower operating in planes parallel with the front of the holder, said holders being interchangeable, substantially as set forth. 7th. The combination, with the case or cabinet, of a slide engaging the same and provided with a longitudinal slot or space and having a lateral recess *e'* at the rear end of the slot or space, whereby it is adapted to receive and sustain, when drawn out, either the document or letter holder, substantially as set forth. 8th. The combination, with the case or cabinet having a shelf *a* and the holders, of the slides E arranged contiguously to, and adapted to keep each other in place on said shelf, and retaining devices which hold said slides to the shelf but permit their reciprocation, substantially as set forth. 9th. The combination, with the shelf *a*, of the slide E having a longitudinal space with a lateral recess *e'*, retaining devices which hold said slide to the shelf but permit its reciprocation, and the holder provided with a stop which fits said space, and a lateral arm *g* adapted to engage the under side of the slide, substantially as set forth. 10th. In a file or document holder, the combination, with the file box and the follower or file-board,

of a lever pivoted to said board and extending rearwardly therefrom, a cross-head or projections which engage the file box, and toggles adapted to depress the free end of the said lever, substantially as set forth. 11th. In a file or document holder, the combination, with the file box having a clamp-groove and the follower-board, of a plate secured to said board and provided with projections adapted to engage said clamp-groove, an outwardly extending lever pivoted to said plate and adapted to bear at its free end upon the file box, and toggles adapted to depress said lever, substantially as set forth. 12th. The combination, with the file box having a clamp-groove and the file-board, of a lever pivoted to the latter and having a guiding projection *g'*, toggles for depressing said lever, and projections connected with the file board for engaging the under side of said clamp-groove, substantially as set forth. 13th. The combination, with the file-board and levers for clamping the same, of a plate secured to said file-board forming a pivotal bearing, and provided with an enlargement or projection seated in the file-board for resisting pressure parallel with the board. 14th. The combination, with the cabinet or shelf, of a file box or holder, a slide mounted on said shelf, a tongue provided upon said slide and adapted to fold parallel therewith or to stand upwards therefrom, and means carried by the said holder, whereby the latter is engaged and held by said tongue, substantially as set forth. 15th. The combination, with the shelves, of a slide mounted upon the lower shelf, a tongue pivoted and adapted to fold upon the slide, and a file box provided with means for the engagement of said tongue, the file box having side pieces, the ends of which extend from the top of the front of the box in a direction parallel with its bottom, and which are adapted to engage the bottom of the upper shelf to prevent the premature tilting of the file box, substantially as and for the purpose set forth.

### No. 32,838. Brake Shoe for Railroad Cars.

(*Sabot de frein pour les chars de chemins de fer.*)

George B. Ross, Buffalo, N. Y., U. S., 15th November, 1889; 5 years.

*Claim.*—1st. A brake shoe having those portions of its face which operate on the wheel tread or come in contact with the rail provided with a recess extending the whole length of the shoe and having inwardly projecting portions, the points *e'* of which project from opposite sides of, and slightly past the centre of the groove *a'*, substantially as and for the purposes described. 2nd. A brake shoe having the side *c* provided with a series of openings *e'*, to reduce the wearing surface on that side of the shoe, so as to compensate for the wearing of the edge *b'* of the wheel by the action of frogs and switches, substantially as described.

### No. 32,839. Electro-Magnetic Dispatch Apparatus or Portelectric.

(*Appareil électro-magnétique à dépêches ou portélectrique.*)

John F. Williams, Mount Vernon, N. Y., U. S., 15th November, 1889; 5 years.

*Claim.*—1st. The combination, with the guide A, the continuous rail B and the sectional rail B' secured in said guide, the continuous conductor F and the helices C, C', C'', C3, mounted on said guide, of a wheel carriage F, the wheels of which engage the rails B, B' and are in metallic contact with the same and with each other, and suitable connections between the helices, the conductor E, the rails B, B' and a generator of electricity, substantially as described. 2nd. In an electro-magnetic dispatch apparatus or portelectric, a carriage F provided at each end with a pair of wheels, which are insulated from each other, and a switch mechanism for bringing the wheels at each end in metallic connection, substantially as described.

### No. 32,840. Chain Link. (*Maillon de chaîne.*)

Irving Brown, Cleveland, Ohio, U. S., 15th November, 1889; 5 years.

*Claim.*—1st. A chain link having the ends of the metal piece bent back and overlapping each other, and interlocking with that portion of the metal piece lying intermediate of the bent back portions, substantially as set forth. 2nd. A chain link having the end portions of the metal piece bent back and overlapping each other, the extreme ends thereof being bent about that portion of the metal piece that is intermediate of the bent back portions, substantially as set forth. 3rd. A chain link having the ends of the metal piece bent back and overlapping each other, and having a shoulder formed in that portion of the metal piece located intermediate of said bent back portions, the extremities of said ends interlocking with said shoulder, substantially as set forth. 4th. A chain link having the ends of the metal piece bent back and overlapping each other, and respectively interlocking by loops with that portion of the metal piece lying intermediate of said bent back portions, each interlocking loop located further from the end of the link from which it was bent than is the companion interlocking loop, substantially as set forth. 5th. A chain link having the ends of the metal piece bent back and overlapping each other, and having a shoulder formed in that portion of the metal piece located intermediate of the bent back portions, said bent back portions interlocking by loops respectively with opposite faces of said shoulder, each interlocking loop located further from the end of the link from which it was bent than is the companion interlocking loop, substantially as set forth.

### No. 32,841. Machine for Feeding Grain to the Rolls of Roller Flour Mills. (*Appareil d'alimentation des moulins à ble à rouleaux.*)

Henry R. Shaw, St. Catharines, Ont., 15th November, 1889; 5 years.

*Claim.*—1st. The use of the movable casing 2, the distributing doweled bottom board 4, the corrugated boards 3, 3 and the tumbling

board 5, combined substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the tumbling board 5, of the corrugated distributor 3, 3 and the adjustable tube feed regulator 2, with the doweled bottom board 4, substantially as and for the purpose hereinbefore set forth.

### No. 32,842. Hay Sling. (*Embrelage à foin.*)

Wentworth G. Ricker, Rochester, N. Y., U.S., 16th November, 1889; 5 years.

*Claim.*—1st. The combination, with the carrier, the suspending-rope and the loose pulley thereon, of the sling having the loop at one end, and at the other a casting carrying a roller mounted in an open sided recess, and a link or loop adapted to be connected to the pulley on the rope, substantially as described. 2nd. The combination, with the carrier, the suspending-rope and the pulley thereon, of the sling having the loop at one end, and at the other a casting having an open-sided recess, and a link or loop adapted to be connected to the pulley on the rope, substantially as described. 3rd. In a hay-sling, the combination, with the loop at one end, of the casting at the other having the open sided recess, and the connecting link or loop, substantially as described. 4th. A hay-sling constructed in two parts with a detachable coupling between them, one of the sling ends having a loop thereon, and the other provided with a casting having an open-sided recess, and a connecting link or loop, substantially as described. 5th. The combination, with a hay-sling constructed in two parts, of a detachable coupling for connecting them embodying a movable bolt, a rope for operating it, and a guide-loop on one section of the coupling so located relatively to the direction of movement of the bolt that a pull on the rope will retract the bolt and disengage the sections of the coupling, substantially as described. 6th. In a coupling of the character described, the combination, with one section embodying the base-casting having the perforations for guiding the bolt, and the recess over which the bolt is adapted to project, the perforated lever having the extended end, the bolt passing through it, the recess into which the lever end projects, and the spring operating on the bolt, of the co-operating section having the hook or projection entering the recess on the other section, substantially as described. 7th. In a coupling of the character described, the combination, with the one section having the base-casting having the perforations for guiding the bolt, and the perforated lever having the projecting portion engaging the casting loosely, the bolt passing through the lever and engaging therewith, and the spring for operating said bolt, of the co-operating coupling-section adapted to be held by the bolt when projected by the spring, substantially as described. 8th. In a coupling of the character described, the combination, with the one section embodying the base-casting having the perforations for guiding the bolt, the perforated lever having the projecting portion engaging the casting loosely, the bolt passing through the lever and engaging therewith, the spring for operating said bolt, a loop or eye on the casting, and a cord attached to the lever for operating the same passing through said loop, of a co-operating coupling-section held in engagement by the bolt when projected by the spring, substantially as described. 9th. In a coupling of the character described, the combination, with the one section embodying the base-casting having the recess therein for the engagement of the co-operating section, and the bolt projecting over said recess, of the co-operating coupling-section having the hook or lug thereon adapted to engage with the recess in the other section, substantially as described.

### No. 32,843. Follower or Form for Boots or Shoes. (*Forme de chaussure.*)

George H. Clark, Campello, Mass., U.S., 16th November, 1889; 5 years.

*Claim.*—The heelless follower or form herein described, it comprising the toe portion *a*, instep portion *b* and shank portion *c*, substantially as described.

### No. 32,844. Machine for Rolling Land. (*Rouleau d'agriculture.*)

Wilson McCredie, South Dorchester, Ont., 16th November, 1889; 5 years.

*Claim.*—1st. The combination of the frames of the rolls A and A with the main frame M M, M' M', by means of the couplings C, C, C and C, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the frame of the roll A' with the main frame or the tongue S, T and the coupling C', substantially as and for the purpose hereinbefore set forth.

### No. 32,845. Sled. (*Traineau.*)

Samuel L. Allen, Cinnaminson, N. J., U.S., 16th November, 1889; 5 years.

*Claim.*—1st. A sled having laterally bending runners, substantially as and for the purposes described. 2nd. A sled having laterally bending runners elastic in a horizontal plane, substantially as and for the purposes described. 3rd. In a sled, the combination, with laterally bending runners, of standards secured to said runners, cross benches secured to said standards, and a sled body secured to the rearmost cross bench but free to slide over the forward bench, substantially as described. 4th. In a sled, a laterally bending runner frame, in combination with a sled body secured to said runner frame near the rear of the same, substantially as and for the purposes described. 5th. In a sled, a laterally bending runner frame, in combination with a sled body secured to said runner frame near the rear of the same, and a suitable steering device, whereby the lateral bending of the runner frame is accomplished either by the hands or feet, substantially as described. 6th. In a sled having laterally bending runners, a steering device consisting of a connecting bar

secured to said runners, in combination with a steering bar pivoted to the sled body and connected with the said connecting bar, and a foot or handle bar secured to the steering bar, substantially as described. 7th. In a sled having laterally bending runners, a steering device consisting of a connecting bar secured to said runners, in combination with a steering bar pivotally secured to the sled body and to said connecting bar, and a foot or handle bar, substantially as described. 8th. In a sled, a laterally bending runner frame, in combination to a sled body secured to said frame near the rear end of the same, a connecting bar G, a steering bar pivoted to the sled body and to the connecting bar, and a foot or handle bar R secured to the steering bar, substantially as described. 9th. In a sled having laterally bending runners, a steering device consisting of a connecting bar, a steering bar pivoted to the body of the sled and to the connecting bar, and a foot or handle bar secured to the steering bar, substantially as described. 10th. A sled provided with a detachable oscillating seat pivoted near its centre, substantially as described. 11th. A sled provided with an oscillating spring seat supported near its centre on elastic sleeves K and held by regulating bolts *k*, substantially as and for the purposes described. 12th. A sled provided with one piece runners having the bent portion *a*, substantially as and for the purposes described. 13th. In a sled having a laterally movable cross bench, the straps O' in combination with the bar O and the said cross bench, substantially as and for the purposes described.

### No. 32,846. Harness Saddle. (*Sellette.*)

Emil Vogtsberger, Austin, Texas, U.S., 16th November, 1889; 5 years.

*Claim.*—The within described improvements in harness saddles consisting of the central arched portion *a* having the central perforation and side notches *f, f*, the hook *d* having the screw *c* and nut *g* and lugs *e, e*, and the jockey's C, C, loops *b, b*, shaft-bearer D and the metal loop *s*, said jockey's hinged to the arch at *b*, and the pads A, A, the whole combined and arranged as shown and described.

### No. 32,847. Seeding Machine. (*Semoir.*)

Willard A. Van Brunt, Horicon, Wis., U.S., 16th November, 1889; 5 years.

*Claim.*—1st. In a seeding machine, a frame consisting of a single piece of a pipe, substantially as set forth. 2nd. In a seeding machine, a frame consisting of a single piece of pipe bent substantially U-shaped, substantially as set forth. 3rd. In a seeding machine, the combination, with a frame, of a drag-bar, holders mounted on the frame and having projections therein to enter holes in the frame, and drag-bars pivoted to the holders, substantially as set forth. 4th. In a seeding machine, the combination, with a frame, of holders mounted thereon, the said holders being open at one side and having holes therein, through which bolts or similar devices are passed to hold them in position and tighten them on the frame, and depending ears on their lower sides, substantially as set forth. 5th. In a seeding machine, the combination, with a frame consisting of a single U-shaped piece of pipe, of removable drag-bar holders having projections which enter the frame, and means for tightening the holders on the frame, and drag-bars pivoted to the holders, substantially as set forth. 6th. The combination, with a frame, drag-bar holders, and drag-bars pivoted thereto, of a compound lever having connection with the drag-bars, whereby they are raised or lowered, substantially as set forth. 7th. The combination, with a frame, and drag-bars pivotally connected therewith, of a compound lever, the parts of which are pivoted together so that one has movement independent of the other, and means of connection between the lever and the drag-bars, substantially as set forth. 8th. The combination, with a frame, and drag-bars pivoted thereto, of a compound lever having connection with the drag-bars, one part of the lever being pivoted to the frame and having a toothed segment thereon, and the other part being pivoted to said portion, and having a latch adapted to engage the teeth of the segment, substantially as set forth. 9th. The combination, with a frame, tongue and drag-bars pivoted to the frame, of a segment held on the tongue, said segment having a stop on one side, teeth on its opposite side, and a track on its edge, a lever pivoted to the segment, and having a toothed segment which rides on the track, a second lever pivoted to the first lever and having a latch to engage the teeth on the segment, and means of connection between the levers and drag-bars, substantially as set forth. 10th. The combination, with a frame and drag-bars pivoted thereto, of an oscillating axle, levers thereon having yielding connection with the drag-bars, and a compound lever for oscillating the axle, substantially as set forth. 11th. The combination, with a frame, drag-bars pivoted thereto, an oscillating axle, levers adjustably secured to the axle and having loose and yielding connection with the drag-bars, a lever pivoted to the frame, and a lever pivoted to said lever, and connecting rod extending from the latter to the levers on the axle, substantially as set forth. 12th. The combination, with a frame, and drag-bars pivoted thereto, of tooth holders adjustably and yieldingly connected with the drag-bars, and having caps on their upper ends to receive the unused ends of the teeth, substantially as set forth. 13th. The combination, with a frame composed of a single U-shaped pipe, holders secured thereon, and drag-bars pivotally connected with the holders, of tooth holders pivoted to the drag-bars, said holders having caps thereon to receive the unused ends of the teeth, substantially as set forth. 14th. The combination, with a frame, of grain hopper and truss rods for supporting the hopper through the middle, substantially as set forth. 15th. The combination, with a frame, of grain hopper supported thereon, said hopper having a bracket plate therein, and truss rods extending from the ends beneath the bracket plate, substantially as set forth. 16th. The combination, with a frame, of a grain hopper having metal end-logs projecting downwardly therefrom and supported on the frame, a bracing plate inside the hopper, truss rods extending from the ends of the hopper beneath the bracing plate, and means for tightening the rods, substantially as set forth. 17th. The combination, with a frame, hopper therein, and drag-bars, of grain pockets, force feed wheels adapted to be adjusted to limit the discharge of grain, and



means for stopping the feed of grain simultaneously with the raising of the drag-bars, substantially as set forth. 18th. The combination, with a frame, drag-bars, hopper, and force feed mechanism, of an oscillating axle gearing for communicating motion therefrom to the feeding mechanism, and means, whereby the feeding is stopped simultaneously with the raising of the drag-bars, substantially as set forth. 19th. The combination, with a frame, drag-bars, hopper and feed mechanism, of an axle having a gear wheel loosely mounted thereon, and a cam lever fixed thereon, a gear wheel on the feed mechanism, and a spring actuated plate carrying a gear wheel which normally meshes with the wheel on the axle, but which is thrown out of mesh by the cam lever, substantially as set forth. 20th. The combination, with the main frame, hopper, oscillating axle, drag-bars, tongue secured to the frame and connected with the axle, and a compound lever for oscillating the axle, of feeding mechanism, and gearing connected with the latter, and the axle whereby the feeding is stopped simultaneously with the rocking of the axle and raising of the drag-bars, substantially as set forth.

### No. 32,848. Coffin Lid. (*Couvercle de cercueil.*)

Winslow Kerr, Toronto, Ont., 16th November, 1889; 5 years

*Claim*.—1st. A coffin-lid having an adjustable glass D held in guide-bars C and locked by a catch E, substantially as and for the purpose specified.

### No. 32,849. Device for Connecting the Plates of one Electric Battery with another Battery or Batteries and with a Switch Board or Transmitting Device. (*Appareil pour raccorder les plaques d'une batterie électrique avec une autre batterie ou des batteries et avec un commutateur ou un appareil de transmission.*)

The United Electric Improvement Company, Gloucester, N. J., (assignee of Walter F. Smith, Philadelphia, Penn.), U.S., 16th November, 1889; 15 years.

*Claim*.—1st. The herein described device for connecting electric batteries, consisting of a vertical divided male thimble having lateral strips attached to each half thereof, a female thimble and a cap fitted to the ends of said male thimble, and said device adapted to receive a material for preventing interruption of the current through the same, substantially as and for the purpose set forth. 2nd. The herein described device for connecting electric batteries, consisting of a male thimble having strips attached thereto, a female thimble gaskets interposed between said female thimble and strips, and said thimble adapted to receive and hold mercury or analogous material, substantially as and for the purposes set forth. 3rd. The herein described device for connecting electric batteries, consisting of a male thimble having lateral strips with a female thimble secured thereto, and a plug mounted in said male thimble with a conductor, substantially as and for the purposes set forth. 4th. The herein described device for connecting electric batteries, consisting of a male thimble having secured thereto a cup capable of containing mercury or other material, a gasket interposed between said cup, and lateral strips formed integral with said male thimble, and a plug having a flexible conductor, substantially as and for the purposes set forth. 5th. The herein described device for connecting electric batteries, consisting of a divided male thimble having a tapering lower portion and lateral strips or ribbons, a female thimble fitting snugly onto said male thimble, and a plug connected with said male thimble having a flexible conductor, substantially as and for the purposes set forth. 6th. The herein described device for connecting electric batteries, consisting of a divided male thimble having a cup and a cap secured thereto, and with lateral ribbons or strips formed integral with said male thimble, and said parts coated with a conducting material, substantially as and for the purposes set forth. 7th. The herein described device for connecting electric batteries, consisting of a divided male thimble with lateral ribbons or strips, a female thimble fitted thereto and adapted to contain mercury or other material, and said parts coated with electrolysis with nickel or other material, substantially as and for the purposes set forth. 8th. The herein described device for connecting electric batteries, consisting of a divided male thimble with strips or ribbons, a female thimble secured thereto, a gasket interposed between said strips or ribbons and the female thimble, and the parts of the device coated with a conducting material, and a plug with a conductor, substantially as and for the purposes set forth. 9th. The combination, of two or more batteries, each composed of a series of plates or elements having lugs or terminals connected with a device, consisting of a male thimble with lateral strips or ribbons, a cap and a cup secured to the respective ends of said thimble and adapted to receive a material for preventing the interruption of the electric current or currents through said device. 10th. The combination, with two or more batteries, of a device consisting of a male thimble with strips, a cup secured to said thimble, and a plug having a flexible conductor connected with a switch-board or transmitting device, substantially as and for the purposes set forth. 11th. The combination, with two or more batteries, of a device having a male thimble with lateral strips, a female thimble, a gasket or gaskets interposed between said strips and female thimble, and said female thimble arranged in connection with said male thimble to receive and hold mercury or other material, and a plug having a flexible conductor, substantially as and for the purposes set forth.

### No. 32,850. Stove. (*Poêle.*)

The D. Moore Co., Hamilton, Ont., (assignee of Alpheus M. Blakesley, Rock Island, Ill., U.S.), 16th November, 1889; 5 years.

*Claim*.—1st. In a stove, a circulating air-chamber separated from and extending to a point over and above the fire-pot, the outer wall of the fire-pot forming the inner wall of the air-chamber, substantial-

ly as set forth. 2nd. In a stove, a circulating air-chamber consisting of a section E adjacent to and separated from the fire-pot by the fire-pot wall which forms the inner wall of said section, a section G within the stove, and an inclined section F connecting the sections E and G, substantially as described. 3rd. In a stove, a circulating air-chamber consisting of a section E exterior to and adjacent to the fire-pot, the wall of which forms the inner wall of said section, a section G within the stove-body, and an inclined section F above the fire-pot communicating with the section E, through an opening in the said stove-body, and also connected with the section G, substantially as described. 4th. In combination, with a stove-body, an air-circulating chamber consisting of a lower section E, an upper section G, and an inclined section F connecting the other sections and having a flange c on one end, and an enlarged part or collar on the other end, said collar and flange being at substantially right-angles to each other, and supporting-rings for the sections F and G, substantially as described. 5th. In a stove, the combination, with the cylindrical chamber C, of the top plate, the cover, and the ring D<sup>1</sup> interposed between the top plate and formed with depending flange, and upwardly-extending flange d<sup>3</sup> over which the outer edge of the cap fits, substantially as shown and described. 6th. In a stove, the combination, with the sectional cylinder G, the top plate D and ring D<sup>1</sup> having vertically-extending flanges, of the ring F and the rods b, b<sup>1</sup> engaging said rings and serving to hold the rings and sections together, substantially as and for the purpose specified. 7th. In a stove, the combination, with the cylinder C in sections, the top plate D having central openings d<sup>1</sup>, and depending flange, and the ring D<sup>1</sup> formed with the inner concentric ring d<sup>2</sup>, of the ring F formed with the inner concentric ring f<sup>2</sup>, the upper section G of the circulating flue held in said inner rings, and the rods b, b<sup>1</sup> connecting the rings F<sup>1</sup> and D, substantially as and for the purpose specified.

### No. 32,851. Burglar Alarm.

(*Avertisseur d'effraction.*)

William J. Ackerman and Hobert Brink, Grand Rapids, Mich., U.S., 16th November, 1889; 5 years.

*Claim*.—1st. The combination, in a burglar alarm, of metallic presser bars pivoted to a standard, so that they may have a vertical and a lateral motion and supported on a non-conducting base, a conducting plate so arranged that the back end of the presser bars stands suspended between two metallic surfaces, a spring for holding the presser bar in position, metallic plates on the edge of the sash stile connected with the metallic plates C and C<sup>1</sup> and bearing upon the plates E, E<sup>1</sup> on the face of the window jamb, and plates in the window jamb connected with the positive and negative poles of an electric battery and with alarm bells, substantially as and for the purpose set forth. 2nd. The combination, in a burglar alarm, of a presser bar pivoted to a standard in such a manner that it may have a vertical or a lateral opening, a conducting plate for the support of the presser bar will stand suspended between two metallic surfaces, a spring for holding the presser bar in position, an adjusting screw, a catch to hold the presser bar against the feed of the sash stile, a non-conducting base for the support of the presser bar and the conducting plates, and spring metallic plates secured to the edge of the sash stile and connected with the metallic plates C and C<sup>1</sup>, a plate attached to the window jamb at the upper end of the plates on the sash stile, and plates attached to the window jamb at the lower end of and in contact with the plates on the sash stile, connected by wires with an electric battery and alarm bells, substantially as and for the purpose set forth. 3rd. The combination, in a burglar alarm, of a presser bar pivoted to a standard, which is supported upon a non-conducting base, a spring for holding the presser-bar in position, a metallic plate for completing the electric circuit through the metallic plates on the edge of the sash stile, having a metallic connection with the plates C and C<sup>1</sup> and with plates on the face of the jamb, and metallic plates on the jamb connected with the positive and negative poles of an electric battery and with alarm bells, with a metallic spring inserted into the window jamb back of the sash lock, the upper end of which will be brought in contact with metallic plates that are connected with an electric battery and alarm bells, when the lock bolt is thrown back, substantially as and for the purpose set forth. 4th. The combination, in a burglar alarm, of a metallic spring secured in the window jamb where the sash lock enters, so situated that the drawing of the bolt will bring it in contact with metallic plates, and metallic plates secured to the jamb directly over the ends of the spring and connected with an electric battery and alarm bells, substantially as and for the purpose set forth. 5th. The combination, in a burglar alarm, of a metallic spring attached to the jamb to be acted upon by the sash lock, and plates attached to the jamb and connected with an electric battery and bells, with plates attached to the edge of the sash stile considerably longer than the plates on the jamb, and a plate on the jamb back of the upper end of the plates on the stile, said plate being formed to complete an electric circuit with the others, substantially as and for the purpose set forth. 6th. The combination, in a burglar alarm, of plates secured to the window jamb and connected with an electric battery and bells with corresponding plates on the sash stile, and a connecting plate on the jamb arranged to complete an electric circuit when the sash is being raised, substantially as and for the purpose set forth. 7th. The combination, in a burglar alarm, of metallic plates secured to the jamb and connected with an electric battery and alarm bells, and metallic plates secured to the edge of the sash stile, and a presser bar with a metallic presser bar pivoted to a standard that is secured to a sash stile, a spring for holding the presser bar in position, a connecting plate at the back end of the presser bar, so situated that the end of the bar will be suspended between two metallic surfaces, the presser bar and the plates being connected with the plates D and D<sup>1</sup> respectively by electrical conductors, and an adjusting device for the presser bar, substantially as and for the purpose set forth. 8th. The combination in a burglar alarm, of metallic plates secured to the window jamb and connected with an electric battery and bells, and metallic plates secured to the sash stile with a spring between the sash stile and stop, substantially as and for the purpose set forth. 9th. The combination, in a burglar alarm, of metallic plates secured

to the window jamb and connected with an electric battery and alarm bells, plates secured to the edge of the sash stile, and a connecting plate secured to the jamb at the upper ends of the plates on the stile, with a spring between the sash stile and the stop, substantially as and for the purpose set forth. 10th. The combination, in a burglar alarm, of plates on the jamb connected with an electric battery and bells, plates on the sash stile connected with the plates on the jamb and with a presser bar, a presser bar connected with plates upon the sash stile supported in the sash stile upon a non-conducting base and pivoted A, a standard and a connecting plate with a spring between the sash stile and stop, substantially as and for the purpose set forth. 11th. The combination, in a burglar alarm, of metallic plates secured to the window jamb and connected with an electric battery and alarm bell, with plates on the sash stile, a connecting plate on the jamb at the upper end of the plates on the stile, a spring back of the sash lock to connect with the plates E and E', a presser bar secured upon the sash stile, conducting plates connected with the presser bar and with the plates on the sash stile, and a spring between the sash stile and the stop, substantially as and for the purpose set forth.

**No. 32,852. Fare Collector for Street and other Railway Cars.** (*Récepteur des billets pour les chars de tramways et de chemins de fer.*)

Arthur W. Berne and Brownlee W. Taylor, New Orleans, La., U. S., 16th November, 1889; 5 years.

*Claim.*—1st. In automatic passenger fare collector, such as described, the metal fare case with a funnel or bin-shaped opening E, in combination with gravity traps 1 and 2, lever plate C and glass B, as set forth. 2nd. In an automatic passenger fare collector, such as described, the metal fare case with a funnel or bin-shaped opening E, in combination with gravity traps 1, 2, 3 and 4, and receptacle H, as set forth.

**No. 32,853. Automatic Valve.**

(*Souape automatique.*)

Palmer A. Montgomery, Chicago, (assignee of Joseph Clapp, Evanston), Ill., U.S., 16th November, 1889; 5 years.

*Claim.*—1st. The combination, with the supply and distributing pipes of an automatic fire extinguishing system, of a valve arranged to act against the flow of water in the supply-pipe, a protruding valve stem, a bent lever pivoted to the frame work of the valve shell, a set screw in pivotal contact with the end of said valve stem, a gravity actuated tripping mechanism for releasing said bent lever, a diaphragm valve in operative connection with said tripping mechanism, and means for introducing compressed air therein in common with said distributing pipes, substantially as shown and described. 2nd. The combination, with the supply and distributing pipes of a fire extinguishing system, of the valve D enclosed within a suitable shell stem *d*, bent lever K, set screw *n* secured within a revoluble cross-bar, weight *k*, toothed link *l*, dog *m*, weighted bar *o*, diaphragm *p* in operative connection with the bar *o*, and a source of compressed air for normally raising said diaphragm and filling the distributing pipes, substantially as shown and described. 3rd. The combination, with a valve and valve stem, of a weighted oscillatory lever for normally holding the valve upon its seat, and a supplemental lever pivoted to the frame, and having one end connected with said valve stem while the other is in operative proximity to said weighted lever, whereby the falling of the latter when released may force the valve from its seat, substantially as shown and described. 4th. The combination, with the valve stem *d*, of a bent oscillatory lever tripping mechanism for holding the same in a normal position, and adjusting screw *n* secured within a loose cross-bar pivoted within said bent lever, substantially as shown and described. 5th. The combination, with a valve stem arranged to protrude through the case within which it is placed, of a flexible diaphragm within and attached to said case and to the valve stem respectively, substantially as shown and described.

**No. 32,854. Animal Trap.** (*Piège.*)

The Oneida Community, Community (assignee of Harry E. Kelley, Niagara Falls), N. Y., U.S., 16th November, 1889; 5 years.

*Claim.*—As an improved article of manufacture, the trap jaws C, C, formed of blanks of sheet metal bent into bow shape, and crimped transversely to prevent broad gripping faces, substantially as set forth and shown.

**No. 32,855. Clasp Plate.** (*Porte d'arquée.*)

The Syracuse Specialty Manufacturing Company (assignee of Austin R. Dickinson), Syracuse, N. Y., U. S., 16th November, 1889; 5 years.

*Claim.*—As an improved article of manufacture, a transversely-slotted clasp plate formed of a metal blank with solid longitudinal rolled marginal portions of greater thickness of metal than the longitudinal central portion, as set forth.

**No. 32,856. Thill Coupling.**

(*Armon de limonière.*)

George W. Lee, Homeworth, Ohio, and Herbert T. Gould, Perry, N. Y., U.S., 16th November, 1889; 5 years.

*Claim.*—1st. The combination, of the coupling iron, with a bifurcated thill iron and a locking plate placed in the bifurcation of said thill iron and engaging the arms thereof, substantially as and for the purpose specified. 2nd. The combination of the coupling iron and the bifurcated thill iron, with a locking plate in the bifurcation of said thill iron, and the spring bar connected to the plate and con-

trolling the same, constructed and arranged substantially as specified. 3rd. The combination of the coupling iron and the stub shaft, with a bifurcated thill iron embracing said shaft, and a locking plate placed in the bifurcation of said thill iron, and engaging the arms thereof, all substantially as set forth. 4th. The combination of the coupling iron and a bifurcated thill iron *d* with a locking and spreading plate G, for said thill iron, constructed and arranged substantially as specified. 5th. The combination of the coupling iron, the bifurcated thill iron and the locking and distending plate, with the key for operating said plate to distend the thill iron, substantially as and for the purpose specified. 6th. The combination of the coupling iron, the stub shaft secured thereto, and the bifurcated thill iron engaging said stub shaft with the locking plate for said thill iron and its controlling spring bar, substantially as specified. 7th. The combination of the stub shaft, having concentric corrugations in its ends, with a bifurcated thill-iron having heads recessed to embrace the ends of said shaft, said recesses being concentrically corrugated at bottom, substantially as specified. 8th. The combination of the coupling iron having a sleeve and set screw, with a stub shaft perforated, as described, and secured in said sleeve, and a bifurcated thill iron engaging said stub shaft, substantially as and for the purpose set forth. 9th. In a thill coupling, the combination of the coupling iron, the stub shaft and the bifurcated thill iron engaging said shaft with the locking and distending plate in the bifurcation of said shaft, the spring engaging the same, and the releasing key, all substantially as described. 10th. The combination of the coupling iron, the stub shaft secured to a sleeve of said iron, and a bifurcated thill iron having recessed heads on its arms, engaging said sleeve with a plate placed between the arms of the thill iron and engaging the same, and the spring bar seated in a recess in the shank of the thill iron and engaging said plate, all substantially as described.

**No. 32,857. Nut Lock.** (*Arrête-écrou.*)

James Harris and Charles B. Brown, Hamilton, Ont., 16th November, 1889; 5 years.

*Claim.*—1st. In combination with a square oval necked or other shaped bolt, of a washer formed on its outer face, with a series of ratchet shaped elevations and depressions, and a main nut having its inner face formed with corresponding ratchet-faced elevations and depressions, so that, when the washer is placed on a bolt and the nut screwed on the end until the two ratchet-faced surfaces come in contact, a nut lock is formed, substantially as and for the purpose specified. 2nd. A nut lock, consisting of the combination of an oval necked bolt A or other irregular shape, a washer C having its outer surface formed with ratchet-shaped elevations *f* and depressions *g*, an oval or other opening *e* to fit the bolt, and a main nut D provided with a circular-threaded opening *i*, and its inner face formed with a series of ratchet-shaped elevations *h* and depressions *j* to correspond with and fit in the similarly constructed ratchet-shaped face of the washer C, to form a nut-lock when the washer is placed on a bolt, and the nut screwed up to it and locked, substantially as and for the purpose specified. 3rd. A nut lock, consisting of the combination of an oval, square-necked, or other irregular shaped bolt, the metal portion of the plate through which the bolt passes, formed with ratchet-shaped elevations and depressions, and a main nut having its inner surface formed with corresponding ratchet-shaped elevations and depressions, which, when screwed on the bolt until it impinges forcibly on the ratchet surface of the plate, forms a nut lock, substantially as and for the purpose specified.

**No. 32,858. Electrically Controlled Elevator.** (*Ascenseur contrôlé par l'électricité.*)

Otis Brothers and Company, New York, (assignees of Rudolph C. Smith, Yonkers), N. Y., U.S., 16th November, 1889; 5 years.

*Claim.*—1st. The combination, with the cage, and starting and stopping device, and controlling electro-magnets of an elevator, of circuits including said magnets, and extending to the cage, and a circuit-breaker in two parts, one connected with an operating-handle within the cage, and the other connected with the stopping and starting device to be moved with the latter, to break the circuit, as the said device attains its desired position, substantially as described. 2nd. The combination, with the cage stopping and starting device, and controlling electro-magnets of an elevator, of electric circuits, including said magnets, a circuit-breaker consisting of two parts movable about a common centre, one capable of being moved by the attendant, and the other connected to move with the stopping and starting device, substantially as described. 3rd. The combination, with the cage stopping and starting device, and controlling magnets and circuits of an elevator, of two disks, one carrying two contacts in each circuit with one of the magnets, another carrying a contact in circuit with both magnets, arranged substantially as described, to permit the latter contact to be brought into connection with either of the former, one of the disks being connected with the stopping and starting device to move therewith, substantially as set forth. 4th. The combination, with the controlling magnets of an elevator, of a circuit-breaker in circuit with said magnets, and consisting of two disks, one carrying two contacts 15, 16, and the other carrying a contact 18, and with a peripheral non-conducting material cut away to permit the contact 15 or 16 to meet the contact 18 at one point on the revolution of either disk, substantially as set forth. 5th. The combination, with the cage stopping and starting device, its pulley *b*, the controlling electro-magnets and circuits, of a circuit-breaker in the cage, consisting of independent disks, carrying contacts and a cable passing round a drum connected with one of said disks, round guide pulleys and round the pulley *b*, substantially as set forth. 6th. The circuit-breaker combined with the cage and stopping and starting device of an elevator, and consisting of two parts, one provided with an operating handle, the other provided with a pointer, and connected with the stopping and starting device to move therewith, substantially as set forth.

**No. 32,859. Bearing for Car Axles.***(Coussinet pour les essieux des chars.)*

Edward Leslie, Orangeville, Ont., 18th November, 1889; 5 years.

*Claim.*—1st. In a car-axle bearing, the combination, with the flat key fitting into the casing, provided with a central aperture, of an intermediate plate held on the under side of the said key, and the circular offset fitting into the aperture formed in the said key, substantially as described. 2nd. In a car axle bearing, the combination, of a flat key, fitting into the casing, a central aperture formed therein, an intermediate plate on the under side of the said flat key, and with a semi-cylindrical concave bearing on the under side, and downwardly-extending flanges formed on the side of said plate, and an axle-brass fitted between said flanges and provided with a semi-cylindrical convex bearing on its upper side, substantially as described. 3rd. In a car-axle bearing, the combination, of a flat key fitted in the casing, a central aperture formed therein, an intermediate plate bearing against the under side of the key, and provided with a circular offset, fitting into the opening in the key, having on its under side a semi-cylindrical concave recess, downwardly-extending flanges, and an axle-brass having its bearing on the bottom of the intermediate plate, and provided on its upper side with a semi-cylindrical convex surface, and arranged within the downwardly-extending flanges, substantially as described. 4th. In a car-axle bearing, the combination, with the box or casing, of a key fitted in the casing, and provided with a central opening, an intermediate plate bearing against the bottom of the key, and having a circular hub fitting within the aperture formed in the key, the said intermediate plate being provided with an oil-hole, and the semi-cylindrical concave under surface, and an axle-brass fitted to bear against the under side of the intermediate plate, and provided with a central conical oil aperture, substantially as described.

**No. 32,860. Astigmatic Eye Piece for Optical Instruments.** *(Verre oculaire astatique pour les instruments d'optique.)*

Joseph Kornblum, John A. Brashear and Park Painter, Allegheny, Penn., U.S., 19th November, 1889; 5 years.

*Claim.*—1st. The combination, with the eye-piece or ordinary primary lens of optical instruments, such as telescopes, opera glasses, etc., of a semi-cylindrical secondary lens, capable of rotation on its axis within the secondary lens holder, substantially as and for the purposes described. 2nd. The combination, with the eye-piece or ordinary primary lens of a telescope, opera-glass, or similar optical instrument, of a secondary lens or eye-glass of a semi-cylindrical shape, set in a frame or secondary lens holder, so as to be rotatable on its axis therein, such secondary lens holder being pivoted to the instrument, to permit the secondary lens being turned in or out of the line of vision, substantially as described. 3rd. In a binocular telescope, lorgnette, or opera-glass, the combination, with the ordinary object glass, and eye-glass at each end of the instrument, of a semi-cylindrical lens set near to, and substantially parallel with the eye-glass, and set in a circular frame, capable of rotation on its axis, in an annular frame or auxiliary lens holder, which is pivoted to the frame of the instrument, so as to be readily turned into or out of the line of vision of the instrument, as and for the purposes described. 4th. In combination with the eye and object glasses of a telescope, or similar optical instrument, and the frame carrying the same, an annular lens holder for carrying a secondary astigmatic lens, within which frame said lens is capable of being turned on its axis, and a graduated scale for indicating the angle of astigmatism when the primary and secondary lenses are adjusted in use, substantially as described.

**No. 32,861. Padlock.** *(Cadenas.)*

Philip G. Woodward, Stamford, Conn., U.S., 19th November, 1889; 5 years.

*Claim.*—1st. A padlock consisting of a casing and shackle, a dog in the shape of a bell-crank lever, having one arm bearing up against one end of the shackle to throw it out of the casing when unlocked, and which is acted upon by the shackle to lock the latter, and the other arm of the dog, having a projection adapted to engage the other end of the shackle to lock it, and to be disengaged to unlock it, and a series of tumblers having a series of springs engaging one arm of the dog, and acting to throw the other arm of said dog out of engagement with the inner end of the shackle, said tumblers having a series of irregularly placed slots, adapted to engage an arm on the locking arm of the dog, substantially as described. 2nd. A padlock consisting of a casing 1, a shackle 6, having an end 5, movable in and out of the casing, a dog 2 in the shape of a bell-crank lever, having a projection 4, bearing up against the end 5, of the shackle 6, and a projection 7, adapted to engage a notch 8 in the shackle 6, pivoted tumblers 11, having springs 12, engaging a projection 14 on one of the arms of the dog 2, and a slot 10, adapted to engage an arm 9, on the dog 2, the tumblers 11 being located adjacent to a keyhole 16 in the casing 1, substantially as described.

**No. 32,862. Thermo-Cauter and Apparatus for Administering Anæsthetics.***(Thermo-cautère et appareil pour administrer des anesthésiques.)*

William H. Beach, Bridgenorth, Eng., 19th November, 1889; 5 years.

*Claim.*—1st. The combination, with a thermo-cauter, of a cylindrical reservoir for volatile liquid, said reservoir having inlet and outlet tubes projecting axially within it from opposite ends, and respectively in connection with the pneumatic bulb and with the cauter, said reservoir forming the handle for the thermo-cauter, substantially as specified. 2nd. The combination, with a thermo-cauter, at a cylindrical reservoir for volatile liquids, said reservoir having air

inlet and air and vapor outlet tubes projecting axially within it from opposite ends, and terminating within a short distance from each other, the said reservoir serving as the handle for the cauter, and being connected thereto through a non-conducting block, substantially as specified. 3rd. The combination, of the herein-described cylinder, closed at one end and provided with an inwardly-projecting outlet tube at the other end, with an enema for the administration of a local anæsthetic, as described. 4th. The combination, with an inhalation mouth piece, of a portable receiver to contain anæsthetic liquid, consisting of a glass bulb, provided with concentric inlet and outlet tubes, arranged substantially as described, for the admission of air and for conveying the vapors where required.

**No. 32,863. Device for Holding and Dipping Pills, etc.** *(Appareil pour saisir et plonger les pilules, etc.)*

John B. Russell, Detroit, Mich., U.S., 19th November, 1889; 5 years.

*Claim.*—1st. In mechanism for dipping pills, a chambered dipping-bar, having seats for the pills, which have atmospheric connection with an exhaust chamber in said bar, substantially as described. 2nd. In a mechanism for dipping pills, a dipping-bar, having seats for the pills, and provided with passages forming atmospheric connection between said seats, and an interior exhaust-chamber formed in said bar, and a tubular connection entering said chamber, and having a flexible tube or section, to permit the movement of said bar when the chamber is exhausted, substantially as described. 3rd. In combination, with the bar B, and tubes C, the tapering tube F, and the flexible tube G, connected with a suction apparatus, substantially as and for the purposes set forth.

**No. 32,864. Game Bat.** *(Battoir de jeu.)*

James Oneil, New York, N.Y., U.S., 19th November, 1889; 5 years.

*Claim.*—1st. A game bat, wherein the frame is made up of wood and a pyroxyline compound. 2nd. A game bat, wherein the frame is made of alternating layers of wood and a pyroxyline compound. 3rd. A game bat, wherein the frame is made up of alternate layers of wood and a pyroxyline compound, and wherein the handle is wound with a cord or strip formed from such compound.

**No. 32,865. Lamp for Burning Petroleum and Similar Fuel.** *(Lampe à brûler le pétrole et autre combustible semblable.)*

Alexander J. Eli, London, Eng., 19th November, 1889; 5 years.

*Claim.*—1st. In a lamp, such as described, the use of a divided wick tube, the upper portion of which is capable of being projected beyond the extremity of the wick, substantially as described. 2nd. In a lamp, such as described, the combination, with a divided wick tube, of a cap, such as F, in manner and for the purpose substantially as shown and described. 3rd. In a lamp, such as described, a weight lever, such as M, fulcrumed on a universal joint, such as L, and adapted to bear when the lamp is inclined against a movable part, such as J, for the purpose of actuating extinguishing devices, in manner substantially as described. 4th. In a lamp, such as described, the combination, with a divided wick tube, of rod H, sliding weight J, and universal lever weight M, the whole operating in manner and for the purpose substantially as shown and described.

**No. 32,866. Aerial Apparatus for Navigating the Air and for towing Vessels and Vehicles over Water and Land.** *(Appareil de navigation aérienne et pour remorquer les vaisseaux et les voitures sur l'eau et sur terre.)*

David Thayer, Boston, Mass., U.S., 19th November, 1889; 5 years.

*Claim.*—1st. An aerial apparatus for navigating the air, comprising a series of aeroplanes or kites connected together and provided with draft ropes, a clog or retarding device attached to the lower ends of the draft ropes to maintain a constant tension thereon, and a car or carriage attached to, and suspended from said draft ropes and adapted to be carried or wafted thereby through the air above the level of the water, land, or ice over which it is passing, substantially as set forth. 2nd. In an aerial apparatus of the character described, the combination of a series of aeroplanes or kites connected together and provided with raft ropes, a clog or retarding device attached to said draft ropes to maintain a constant tension thereon, a car or carriage suspended from said draft ropes and made movable thereon, and a tackle, whereby the car can be moved toward and from the kites to vary its height above the level of the water, land, or ice over which it is passing, substantially as set forth. 3rd. In an aerial apparatus of the character described, the combination, of a series of aeroplanes or kites arranged in a horizontal row and pivoted or hinged together, as described, said kites being provided with draft ropes, a clog or retarding device attached to the lower ends of said shaft ropes and acting to maintain a constant tension thereon, a car or carriage attached to, and suspended from said draft ropes, and controlling ropes or braces extending from said car or carriage to the two outer or side kites of the row, whereby they can be turned or inclined at an angle to the central kite to which they are hinged, substantially as and for the purpose described. 4th. In an aerial apparatus of the character described, a system of aeroplanes or kites arranged in horizontal rows or tiers, one slightly above and beyond the other, said kites being provided with guy-ropes K and draft ropes D, the latter attached at their lower end to a clog or retarding device, in combination with a car or carriage suspended from said draft ropes, and controlling ropes or braces attached to the right and left hand kites of the system, all operating substantially in the manner and for the purpose set forth. 5th. In an aerial apparatus of the character described, the combination, with a horizontal row of kites provided

with draft ropes D, and hinged or pivoted together as described, of the cross-bars H hinged together at *g*, and having the controlling ropes or braces *d* attached to the outer ends of the outer cross-bars, substantially as and for the purpose set forth. 6th. In an aerial apparatus of the character described, the combination, with a horizontal row of kites hinged or pivoted together, as described, and having the cross-bars H secured thereto and hinged together at *g*, and provided with braces *p*, attached to the outer ends of the outer cross-bars, of the bar L secured to the upper side of the central kite and forming a rest or stop for the right and left hand kites hinged thereto when said braces are slackened, substantially as set forth. 7th. In an aerial apparatus of the character described, the combination, with an aeroplane or kite provided with a draft rope attached to a clog or retarding device, of a balloon secured to said kite and adapted to sustain the same in a position to receive the force of the wind, substantially as described. 8th. In an aerial apparatus of the character described, the combination, with a series of connected kites arranged in rows or tiers, as described, and provided with draft ropes, a clog or retarding device attached to the lower ends of said draft ropes, and a car or carriage attached to and suspended from said draft ropes, of balloons attached to the upper tier of kites and adapted to sustain the same above the water, land, or ice in a position to receive the force of the wind when turned by means of their braces, substantially as set forth. 9th. In an aerial apparatus of the character described, a kite provided with a steadying weight I suspended from its lower end by a cord *m*, looped from the lower corners of the kite, substantially in the manner and for the purpose described. 10th. In an aerial apparatus of the character described, the combination, with the kite frame *c* and its covering *d*, of the lacing *e* adapted to form a backing for said covering, substantially as set forth.

**No. 32,867. Method of and Apparatus for Utilizing Peat Fibre.** (*Mode d'utiliser la fibre de tourbe et appareil pour cet objet.*)

George H. Béraud, Maestricht, Holland, 19th November, 1889; 5 years.

*Claim.*—1st. In the beating engine, the combination of two or more sets of beating arms at the same or different levels. 2nd. The combination, with the sets of beating arms, of one or more exhausting fans or equivalent devices. 3rd. In combination with the sets of beating arms and the exhausting fans or equivalent devices, the perforated plates of wire, or other gauze or net, between the chamber in which the beating arms revolve, and the passage to the exhausting fan or equivalent device. 4th. In combination with the sets of beating arms, the movable perforated plates of wire, or other gauze or net, in the lower part of the chamber in which the beating arms revolve. 5th. The revolving arms and plates by which the peat fibre to be treated is fed into the beating engine. 6th. The revolving arms and plates by which the peat fibre is delivered from the engine after having been treated. 7th. The method of combining the revolving arms and plates by which the peat fibre is fed into the beating engine with the revolving arms and plates by which it is delivered from the engine. 8th. The combination, with the beating engine described and shown, of the process of treating the peat fibre delivered from such engine with alkaline or caustic salts, substantially as and for the purpose described. 9th. The apparatus for so treating and for washing the peat fibre consisting of an external drum or perforated plate of wire gauze provided with internally projecting arms and revolving in a tank or vessel, in combination with internal arms or plates revolving independently and separated from the outer drum by an inner cylinder of perforated plate or wire gauze, and with suitable openings for the admission and discharge of the water or solutions used, and of steam. 10th. The process of bleaching the peat fibre in the apparatus described, by means of chloride of lime or other bleaching agent. 11th. In the breaking machine, the combination of the rollers by which the peat fibre is fed to the machine, with the knife shaped plate over the edge of which the fibres are drawn by the revolving toothed cylinder. 12th. In the breaking machine, the combination, with the revolving toothed cylinder, of perforated plate of wire gauze below the cylinder, the passages from a blowing fan or equivalent device for delivering the cleaned fibre and the perforated plate of wire gauze above the cylinder communicating with an exhausting fan, or equivalent device, above the cylinder. 13th. In the machine for finishing and classifying the peat fibre, the combination, with the revolving drum or cylinder having radial or saw-shaped teeth and rollers for feeding in the fibre, of the dividing plate *s*, the fan *t* delivering a current of air at the back of the machine through the passage *t*, below the machine or through the dividing plate *s*, the revolving beaters or plates *y*, the chamber *z* divided by plates *c* and having a manhole *x*, and the exhausting fan or equivalent device *w*, all arranged and operating substantially as described. 14th. In the improved carding engine for carding the peat fibre prepared as described, the metal plate supporting the film of fibre as it is delivered by the doffing comb and conducting it to the compressing cylinder. 15th. In combination with the revolving compressing cylinder F, the rising and falling roller J, the endless band or apron G and the adjustable rollers H, arranged and operating substantially in the manner and for the purpose described. 16th. In combination with the drum B of the carding engine, the revolving cleaning cylinder D, the grating or wire gauze P<sub>1</sub>, and the channel P communicating with an exhausting fan or equivalent device, substantially as described. 17th. In the finishing carding engine illustrated in Figs. 5 and 6, the combination, with the card cylinder J, or the two doffing cylinders K, K', doffing combs L, L', and compressing and rubbing rollers M, M', guides N, N', and winding cylinders O, O', 18th. In the finishing carding engine, the guiding plate S or tube S', for conducting the carded fibre to the rollers M, M'. 19th. In the finishing carding engine, the combination of the card cylinder J with the two doffing cylinders K, K', having alternate strips of carding teeth round their circumference, the doffing combs or strips L, L', and the sets of rollers M, M', of india rubber or gelatine, one or both rollers in each set moving backward and forward longitudinally whilst it revolves, substantially as and for the purpose described.

**No. 32,868. Apparatus for Sifting and Sorting Meal, Flour and the like.** (*Appareil pour sasser et séparer les farines et objets semblables.*)

Carl Haggemacher, Budapest, Hungaria, 19th November, 1889; 5 years.

*Claim.*—1st. The sifting or sorting machines with one sieve or several communicating sieves having a swinging or swaying (not a shaking) motion imparted to them, the employment of propelling or conveying bars or slats *y* arranged on the surfaces of the sieves or sieve bottoms, for the purpose of forwarding by jerking action, and also of distributing the substance to be sifted over the sieve proper, and also for the purpose of forwarding the substances or materials on the sieve bottom, substantially as set forth. 2nd. The arrangement of channels 9, 9, for the cleaning material (if such is used) in such a manner that these channels are made to return to their starting points and the mentioned cleaning material moves either always above the same sieve or sieve bottom, the bottoms of these channels consisting partly of a wide meshed tissue which lets pass all the substances accumulated above the sieve or sieve bottom, except the cleaning material itself, or in such a manner that the cleaning material passes from one sieve or sieve bottom to another lying below it, and is finally brought back to the inlet of the substances to be sifted, substantially as set forth. 3rd. The arrangement of the sieves and sieve bottoms, and combined as described for the purpose set forth.

**No. 32,869. Device for Controlling Fluid Supply.** (*Appareil pour régler l'alimentation de l'eau.*)

Edmund R. Ware, Chicago, Ill., U. S., 19th November, 1889; 5 years.

*Claim.*—1st. The combination of a combustion chamber, a fuel supply, a feed regulator, the reversely operating electro-magnets, the thermostat, and the electric circuits connecting the thermostat with the reversely operating magnets for actuating the fuel regulator, to alternately increase and diminish the heat, substantially as set forth. 2nd. The combination of a combustion chamber, a fuel supply, a fuel regulator for increasing and diminishing alternately the amount of fuel, a supplemental continuous supply of fuel, the electro-magnet, the thermostat and the electric circuits connecting the electro-magnets for operating the fuel regulator, substantially as set forth. 3rd. The combination of the furnace fuel supply pipe, the valve in the feed pipe, electro-magnets connected with the valve and the thermostat, substantially as set forth. 4th. The combination of the combustion chamber, the fuel supply, the pilot pipe, the fuel regulator, the electro-magnets, the thermostat, and the electric circuits connecting the thermostat with the electro-magnets, substantially as set forth. 5th. The combination of the feed pipe, the electric-magnets, the valve in the feed pipe, the contact plates, a switch mounted on the plug of the valve, and the electric circuit, whereby the plug of the valve serves to move the switch and is utilized as part of the circuits, substantially as set forth. 6th. The combination, with the valve in the fuel supply pipe, of a pivoted two-ended switch, and the contact plates with each of which the switch is made to engage alternately, whereby the contact plates, the switch and the valve constitute parts of the electrical circuits, substantially as set forth. 7th. In a device for controlling the supply fluids, the combination of an electro-magnet, an armature pivoted near the same, a valve controlled by such armature, a yoke attached to said valve, an insulated contact plate upon which one end of said yoke rests, the yoke and plate so related that, when the electro-magnet current is sent through such plate and yoke and electro-magnet, the latter will be energized, the armature drawn to open or close the valve as the case may be, and the end of the yoke be moved off of the plate, so as to immediately break the circuit and thus to prevent the latter from wasting. 8th. In a device for controlling the supply of fluid to a furnace, the combination of an electro-magnet with a circuit embracing said magnet, a thermostat, a battery, a contact plate and a movable yoke adapted to engage said contact plate in one position, a valve to the plug of which such yoke is secured, and an armature pivoted in front of the electro-magnet and connected with and controlling the plug, the parts arranged that, when the thermostat closes, the circuit a current is instantly sent through to energize the magnet and draw the armature, and by so doing immediately turns the plug to open or close the valve and breaks the circuit by moving the yoke from the contact plate. 9th. In a device for controlling supply of fluid to a furnace the combination of two oppositely placed electro-magnets with an armature pivoted between them, a valve controlled by said armature, a yoke on the plug of said valve, two contact plates, one of which is always in contact with one end of the yoke, a thermostat having contact points on opposite sides and two electric circuits, each of which includes the yoke, battery and thermostat, while one includes also one contact point, one electro-magnet and one contact plate so that, when the thermostat is inclined to either side sufficiently to reach the contact point *a*, a circuit is establishing through one of the electro-magnets, the armature is immediately drawn to open or close the valve and simultaneously the circuit is broken by the movement of the yoke which carries its point off the contact plate.

**No. 32,870. Gas Battery.** (*Pile à gaz.*)

Ludwig Mond, Northwich, and Carl Langer, London, Eng., 19th November, 1889; 5 years.

*Claim.*—1st. A gas battery, having as electrolyte a liquid impregnated and absorbed by a solid porous substance, substantially as described. 2nd. In a gas battery, a solid porous substance impregnated with an electrolyte liquid at or near ordinary temperature, and covered on each side with one or more substances capable of absorbing the gases employed, and exposed on the one side to the one gas, and

on the other to the other gas used. 3rd. In a gas battery, a solid porous non-conducting material impregnated with an electrolyte liquid at or near ordinary temperature, and coated on each side by a conducting material capable of absorbing gases in its pores, such as described. 4th. In a gas battery, the combination of a solid porous non-conducting material impregnated with an electrolyte liquid at or near ordinary temperatures, a porous conducting material covering the same, and a gas absorbing material covering or impregnating the said porous conducting material, substantially as described. 5th. In a gas battery, in combination with a solid porous substance impregnated with an electrolyte liquid, at or near ordinary temperatures, and covered on each side with gas-absorbing material, a porous metallic conducting material, in contact with or permeating the gas absorbing material on each side, and connected with the poles of the battery. 6th. In a gas battery, the combination of a porous non-conducting substance, a liquid electrolyte impregnating the same, a gas absorbing coating on each side of said porous substance, with a good conductor of electricity on each side in the form of thin metallic foil gauze or perforated plates permeable to the gases employed, and in frequent contact with the absorbent coating over its whole surface, whereby the electricity is taken and conducted away from numerous points at small distance from each other, and thus the internal resistance is reduced and the work done by the battery is increased. 7th. In a gas battery, the combination of a non-conducting porous plate impregnated with an electrolyte, a coating on each side of it of conducting and gas-absorbing material, such coatings being insulated from each other but connected with opposite poles of the battery, and an electro-negative gas bathing one side coating, and an electro-positive gas the other side coating. 8th. A gas battery, formed of electrolytic plates coated on each side with conducting and gas-absorbing matter, the sides being insulated from each other and connected with opposite poles and of chambers between the plates, each alternate chamber being filled with an electro-negative gas and the others with an electro-positive one. 9th. In a gas battery, in combination with an electrolytic plate, having two gas-absorbing electrically-conducting layers, one on each side of the electrolytic plate, a conductor connected with one of the poles of the battery fixed on each side of the electrolytic plate, and electrically connected with the absorbing conducting layer, nearly or quite all round. 10th. In a battery, having as its electrolyte a liquid permeating and absorbed by a porous non-conducting solid material, the combination of the said electrolyte with a coating on each side of gas absorbing materials, a gas chamber on each side of the said electrolyte, supplied respectively each one with one of the gases used, and means for the periodic interchange of the two gases. 11th. The combination of the insulating plates R, conductors A embedded therein, and electrolyte panels M covered on each side with gas-absorbing and conducting material, said material on each side being in electrical contact with the conductor A on that side. 12th. As an element of a gas battery, the combination of a non-conducting frame R, porous non-conducting plates M, permeated by a liquid electrolyte, and coated on each side by a gas-absorbing and conducting layer insulated from the layer on the other side, conductors A respectively all round the plates on each side, and each connected with one pole, each in electrical contact with the conducting layer on its own side, and said layers being exposed, one to an electro-negative and the other to an electro-positive gas. 13th. In a battery, a series of non-conducting frames R, plates M formed of the electrolyte, and a conducting gas-absorbing layer on each side, conductors A on each side, each connected with its respective pole and with the absorbing conducting layer on its own side, poles P, P<sup>1</sup>, positive gas passages O and positive gas spaces G<sup>2</sup>, G<sup>4</sup>, G<sup>6</sup> negative gas passages H and negative gas spaces G<sup>1</sup>, G<sup>3</sup>, G<sup>5</sup>, outside enclosing case E and distance pieces K, forming with frames R said gas chambers G<sup>1</sup>, G<sup>2</sup>, all combined substantially as described. 14th. A battery, composed of a series of porous plates M permeated with an electrolyte liquid at or near ordinary temperatures, and coated on each side with a gas absorbing and conducting layer, the layers facing one way being insulated from the layers facing the other way, and a series of spaces between the plates, one alternate set of which is exposed to an electro-negative gas, and the other to an electro-positive one. 15th. In a gas battery, the combination of a series of frames R carrying the electrolytes, two alternating series of chambers between them, G<sup>1</sup>, G<sup>3</sup>, etc., and G<sup>2</sup>, G<sup>4</sup>, etc., passages Q, plaster ends V and the outer frame-work Z, Z<sup>1</sup>, etc., permeated only by the gas passages Q, H, substantially as described. 16th. The process of obtaining electricity by means of two gases, such as oxygen and hydrogen, which consists in causing said gases to each come in contact at or near ordinary temperatures, with a layer of gas-absorbing material itself in contact with the electrolyte, the two layers of gas-absorbing materials being each insulated from the other of them, and each of them connected with one of the poles of the battery, the two gases being interchanged periodically, substantially as described. 17th. The improvement in the process of obtaining electricity, which consists in restoring the working power of the electrolyte and counteracting polarization by periodically interchanging the two gases, so that the one shall occupy the places which previous to the interchange were occupied with the other, substantially as described. 18th. The improvement in the process of obtaining electricity by means of a gas battery, which consists in passing such a quantity of air or dry gas through the apparatus as to carry off the water or other easily evaporated liquid formed by the action of the battery.

### No. 32,871. Steam Engine. (Machine à vapeur.)

Samuel E. Jarvis, Lansing, Mich., U. S., 19th November, 1889; 5 years.

*Claim.*—1st. In an engine of the kind described, the combination, with the oscillating piston rod, of an oscillating stuffing box provided with an enlarged bore for the lateral play of the piston rod, and a ball and socket joint between the inner end of the stuffing box and the cylinder head, the center of motion of said ball and socket joint being located inside the cylinder, substantially as described. 2nd. In an engine of the kind described, the combination of the stuffing box terminating in a ball and socket, bearing at its inner end the cylin-

der head provided with a conical inward projection terminating in a socket bearing at its inner end, and the enlarged bore in the stuffing box to provide for relative angular play between the stuffing box and piston rod, substantially as described. 3rd. In an engine of the kind described, the combination, with the oscillating stuffing box, of the cylinder head provided with a conical inward projection, and of a ball and socket joint between the inner end of the stuffing box and the cylinder head, said joint having its center of motion located at or near the centre of the cylinder, substantially as described. 4th. In an engine of the kind described, the combination of the cylinder provided with the inwardly-projecting head, the stuffing box forming a ball and socket joint therewith, and provided with the enlarged bore, and the two-part piston head provided with a ball and socket joint between its parts, substantially as described. 5th. In an engine of the kind described, the combination of the inwardly projecting conical head E, the stuffing box F having a ball and socket joint therewith, the nut G having a ball and socket joint with the stuffing box, and the piston head D consisting of an annular outer part and an inwardly recessed part secured to the piston rod, and having a ball and socket joint with said outer part, substantially as described.

### No. 32,872. Overhead Oil Lamp.

(Lampe à huile suspendue.)

John H. Ross and Edward E. Atkins, Birmingham, Eng., 19th November, 1889; 5 years.

*Claim.*—1st. An annular oil reservoir, situated above a reflector, and carrying an open framing to support a central chimney and a ring to support a deflector and glass globe. 2nd. From the oil reservoir, three or more wick tubes or groups of wick tubes converging towards the centre, so as to present around outside of the base of the chimney a circular wick or a circular row of wicks having the ends directed downwards. 3rd. Within the perforated lower part of the chimney, a refractory cylinder within the wick, in combination with an air deflector outside the wick. 4th. The chimney fitted to slide upwards and to be retained in its raised position so as to give access for kindling the lamp. 5th. The ring of asbestos or porous mineral supported in contact with the ends of the wicks, so as to form an incombustible terminal to the wick.

### No. 32,873. Record and Reproduction of Sound or Sounds. (Impression et reproduction du son ou des sons.)

Gianni Bettini, New York, N.Y., U.S., 19th November, 1889; 5 years.

*Claim.*—1st. The method of recording and reproducing sound, which consists in taking vibrations of a diaphragm or other body at several points, communicating them to a common or central point, causing this point to make a record, and then from this record causing vibrations of the common or central point, communicating them to several points of the diaphragm or other body capable of vibration, producing sound waves. 2nd. In a device for recording and reproducing, or for recording alone or reproducing alone, articulate or other sound or sounds, the combination of a body capable of vibrating two or more conductors suitably applied thereto, capable of conveying vibrations from the body, said conductors connecting with a unitary or functionally single part or focus capable of making a record or of passing over a record already made. 3rd. An apparatus for recording and reproducing articulate or other sound or sounds comprising a diaphragm or other body capable of vibration, and having different parts thereof under a separate uniform tension, and a vibration conductor, consisting of a body having a common or central point or place, at which point is placed a projection designed to make a record, and arms or projections extending from the central point and bearing upon all the divisions of the diaphragm.

### No. 32,874. Dinner Pail. (Potager.)

Charles H. Bailey, Rock Island, Qué., 20th November, 1889; 5 years.

*Claim.*—1st. In a drinking pail, the combination of the liquid chamber B, the filling and drinking tube C and the vent tube G, substantially as described. 2nd. In a dinner pail, the combination of the main pail A, the septum *a*, the air-tight screw cap *a'*, with the drinking and filling tube C and vent tube G, substantially as described. 3rd. The combination of the filling and drinking tube C, the liquid chamber B, the septum *a*, the screw cap *a'* and vent tube G, substantially as described. 4th. The combination of the main pail A, vessels F, E, L, K and I, the liquid chamber B and the tubes C and G, substantially as described.

### No. 32,875. Machine for Finishing the necks of Glass Bottles and Similar Articles. (Machine à finir les goulots des bouteilles et autres objets semblables.)

Charles N. Brady, Washington, Penn., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. In a machine for finishing the necks of fruit jars, glass bottles and similar articles, the combination, with a set of laterally moving jaws to press the outside of the neck, of a rotatively moving set of pivoted jaws for moulding the inside of the neck. 2nd. In a machine for finishing the necks of fruit jars, glass bottles, and similar articles, the combination of a set of laterally moving jaws to press the outside of the neck, a rotatively moving set of jaws for moulding the inside of the neck, and a rotatively moving disk to form the mouth or lip of the bottle. 3rd. In a machine for finishing the necks of fruit jars, bottles, and similar articles, the combination, of a set of laterally moving jaws to press the outside of the neck, a rotatively or continuously moving set of jaws for moulding the inside of the neck, and means for simultaneously operating the two sets of jaws. 4th. In a machine for finishing the necks of



fruit jars, bottles, and similar articles, the combination, of a shaft B, collar D mounted thereon, inner jaws pivoted to said collar, a clutch collar in the rear of collar D and connecting with said inner jaws, an arm G connecting with said clutch collar, and a set of laterally moving outer jaws surrounding said inner jaws. 5th. In a machine for finishing the necks of fruit jars, bottles and similar articles, the combination of a rotatively or continuously moving set of pivoted inner jaws, a vertical support adjacent to said inner jaws, and a set of outer jaws working on said mortised support. 6th. In a machine for finishing the necks of fruit jars, bottles, and similar articles, the combination of a rotatively or continuously moving set of pivoted inner jaws, a mortised support adjacent to said inner jaws, a set of outer jaws working on said mortised support, a slotted ring in the rear of said outer jaws, pins secured to said outer jaws and engaging with said slotted ring. 7th. In a machine for finishing the necks of fruit jars, bottles, and similar articles, the combination of a rotatively or continuously moving set of pivoted inner jaws, a mortised support adjacent to said inner jaws, a set of outer jaws working on said mortised support, a slotted ring in the rear of said outer jaws, and engaging with said slotted ring, an ear on said ring, a rod F passing through said ring, and an inclined collar secured to said rod and engaging with said ear.

### No. 32,876. Heating Drum. (*Poêle sourd.*)

Thomas Phillips, Orillia, Ont., 20th November, 1889; 5 years.

*Claim.*—1st. In a heater drum, the combination of the smoke flue A C D, interior hot air chamber E provided with horizontal deflecting plates F, and openings G, and exit pipes I, substantially as and for the purpose specified. 2nd. In a heater drum, the combination of the smoke flue A C D, interior hot air chamber E provided with deflecting plates E, openings G, exit hot air pipes I and cold air duct H, substantially as and for the purpose specified.

### No. 32,877. Manufacture of Aluminium and Apparatus therefor. (*Fabrication de l'aluminium et appareil pour cet objet.*)

Curt Netto, Newcastle-upon-Tyne, Eng., 20th November, 1889; 5 years.

*Claim.*—1st. The manufacture of aluminium from the compounds of the same with chlorine, bromine, iodine, fluorine or the double compounds of aluminium with the aforesaid bodies, and potassium or sodium, by means of the metal of the alkalies or alkaline earths, 2nd. The process wherein the sodium or other decomposing metal is immersed either in a solid or a liquid state in previously molten cryolite or other aluminium compound. 3rd. The process wherein the molten aluminium compound to be decomposed is introduced into the molten decomposing metal, substantially as described. 4th. The process wherein the aluminium compound is first melted or fused in a crucible, and the sodium is then introduced into the same which is then closed and repeatedly inverted, substantially as described. 5th. The process wherein the aluminium compound is first melted or fused in an iron or steel vessel mounted upon axles or trunnions, and the sodium is then introduced and the vessel rotated or oscillated, substantially as described. 6th. The process in which the heated or molten aluminium compound is allowed to fuse the sodium placed under an aluminium grid at the bottom of the converter, substantially as described. 7th. The process wherein the aluminium compound is first melted or fused and sodium then introduced under pressure, substantially as described. 8th. The apparatus comprising the crucible A, the cover B provided with the pins b or projections and tongs d, whereby the said crucible may be kept closed and repeatedly inverted, substantially as and for the purpose above specified. 9th. The apparatus comprising the cylindrical vessel A mounted upon trunnions a, and provided with the inlets a', f, and outlets j, p, substantially as described. 10th. The process wherein the extraction of practically pure aluminium by fractional reduction is effected. 11th. The treatment of the cryolite or other aluminium compound by a decomposing metal in a vessel lined with basic material, as and for the purpose specified.

### No. 32,878. Pipe Wrench. (*Clé à tuyau.*)

John W. Adams, Detroit, Mich., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. In a pipe-wrench, the combination of a stationary jaw, of an eccentrically journalled jaw, substantially as described. 2nd. In a pipe-wrench, the combination of a stationary jaw and an eccentrically journalled roller jaw, provided upon its face with sharp teeth or their equivalent, substantially as described. 3rd. In a pipe-wrench, the combination of a stationary jaw and an eccentrically journalled roller jaw, provided with ratchet teeth upon its face, and a holding spring or dog, substantially as described. 4th. In a pipe-wrench, the combination, with the stationary jaw A, provided with the handle B, the ears E, the roller jaw C, eccentrically journalled therein and provided with ratchet teeth upon its face, and the holding spring or dog, all arranged to operate substantially as described.

### No. 32,879. Commutator Bar for Dynamo Electric Machines. (*Barre de commutateur pour les machines dynamo électriques.*)

Charles E. Billings, Hartford, Conn., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. A commutator bar having two arms and composed throughout of one single piece of unalloyed copper, as set forth. 2nd. A commutator bar having two arms and composed throughout of one single piece of unalloyed copper, the fibre and grain of which is everywhere parallel with the axis of the arm, substantially as set forth. 3rd. As an article of manufacture, a full sized commutator bar for dynamo-electric machines, which has two arms whose longi-

tudinal axes form an angle one with the other, and which is composed throughout of one single piece of unalloyed copper of an almost perfectly homogeneous molecular structure, the fibre or grain of the copper being so arranged as to be everywhere parallel with the axis of the arm and of the greatest possible density, substantially as and for the purpose described. 4th. As an article of manufacture, a full sized commutator bar for dynamo-electric machines, which bar, as to its shape, has two arms whose axes make an angle one with the other, one of which arms has suitable projections at its extremities by which it may be clamped to the armature shaft, while the other arm has at its outer extremity a suitable lug or projection by which it may be connected to the armature coils, and which bar, as to its structure, consists of one single piece of unalloyed copper almost perfectly homogeneous throughout the fibre or grain of the copper, being so arranged as to be everywhere parallel with the axis of the arm and of the greatest possible density, substantially as and for the purpose described.

### No. 32,880. Game. (*Jeu.*)

George F. Newland, Detroit, Mich., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. A game consisting of a game-board A divided by circles, radial lines and diagonal lines, substantially as shown, with men or characters resting at, and designed to be played from the points of intersection of said radial and circular lines, substantially as shown and described. 2nd. The combination, with the board A provided with circular radial and diagonal lines, of orifices at the points of intersection of the circles and radial lines and, in connection therewith, characters, in the nature of pegs designed to be set into and played from said orifices, substantially as shown and described.

### No. 32,881. Manufacture of Sheet Metal Signs. (*Fabrication des enseignes de métal en feuilles.*)

Alois Winkler, Vienna, Austria, 20th November, 1889; 5 years.

*Claim.*—1st. Sheet metal signs having letters and representations of objects embossed on them, which letters and representations are printed in one or more oil colors, substantially as described. 2nd. The method of making poly-chromatic embossed sheet metal signs by embossing the sheet metal plate between a suitable punch and a yielding support, coating the embossed plate with a thin layer of varnish color, inking the letters by means of a printing roller, and applying color to the embossed representations of objects by means of impressions on unsized tissue paper taken from lithographic stones and pressed into the said representations with the aid of a moistened felt roller, substantially as described. 3rd. In the method of making poly-chromatic embossed sheet metal signs referred to in the preceding claims, the use of a punch composed of cast iron types, substantially as described. 4th. In the method of making poly-chromatic embossed sheet metal signs referred to in the preceding claims, the use of a punch cast in zinc by means of a sand mould prepared from a pattern, which consists of letters cut out of sheet zinc, and of raised representations of objects carved in wood, these letters and representations being cemented to a plate, substantially as described.

### No. 32,882. Damper Regulator. (*Régulateur de registre.*)

Charles G. Jewett, Howell, Mich., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. In a damper regulator, the combination, with a heater, and its radiating circuits, of an independent regulating circuit, a vessel in said circuit through which the water circulates, a drum in said circuit enclosing the motive agent, valves for disconnecting said regulating branch from the heater, a pipe communicating with the drum, and a valve communicating with the drum to control the motive agent therein, substantially as described. 2nd. The combination, with the circulating water apparatus, of a vessel located outside of said heater, inlet and outlet pipes connecting said vessel with the heater to form an independent circulating branch thereof, valves G for disconnecting said vessel from the heater, a drum enclosed within the vessel and containing a motive agent, the pipe I communicating with the drum, and the valve L in said pipe controlling communication between the outer air and the drum, substantially as described. 3rd. In a heating system, in combination with a receptacle within said system, of a closed vessel containing an expansive fluid within said receptacle and included within the system, and connections, such as the valve L, for increasing or diminishing the quantity of such fluid, substantially as and for the purpose specified.

### No. 32,883. Saw Gummer, Shears and Punch Combined. (*Élampe à scie, cisailles et découpoir combinés.*)

Luke Riley, Sault Ste. Marie, Mich., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. In a combined saw gummer, punch and shears, the combination of the bed plate A, the parallel transverse guides C, the recesses H formed therein on opposite sides, the lower dies D and I adapted to be secured in said guides, the power lever J pivotally secured in suitable supports above the bed plate, and the longitudinal lever K mounted between the supports below the power lever, and adapted to carry exchangeably the gumming, punching and shearing dies, substantially as described. 2nd. In a combined saw gummer, punch and shears, the combination, with the lever K carrying the movable dies, and its actuating power lever J, of the bed plate having the parallel transverse guides C provided with the notches H upon opposite sides, and of the bed die D adjustably and removably secured therein, substantially as described.

**No. 32,884. Floor Jack. (Serre-joint.)**

Joseph Dix, Abbottsford, Wis., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. In a floor jack, the combination, with a body provided with a nose at its forward end, having a transverse groove, a central longitudinal essentially T-shaped slot, and a cam rebate produced in its upper face contiguous to the nose and intersecting the said slot, of an essentially T-shaped jack bar having notches in one side and provided with a recess at its forward end, an essentially hook-shaped dog pivoted in the jack bar engaging the walls of the cam rebate, a transversely slotted shoe secured to the said dog, and a handle also pivoted to the jack bar vibrating in the recess of the shoe, detachable spikes passing through the said jack bar, and a spring-actuated pawl engaging the notches of the bar, substantially as shown and described. 2nd. In a floor jack, the combination, with a body having a nose integral with its forward end, grooved transversely and provided with a recess in its upper face contiguous to the groove, a cam recess formed in the upper face of the said body contiguous to the nose, an essentially T-shaped jack bar reciprocating longitudinally in said body, provided with notches in one face near its rear end, and a recess in its forward end, and a spring-actuated pawl engaging the notches of the jack bar, of an essentially hook-shaped dog pivoted in the forward end of the jack bar engaging the forward walls of the rebate, a transversely recessed shoe secured to the said dog, a handle vibrating in the recess of the said shoe, a friction roller engaging the hub of the dog and shoe, and a second friction roller engaging the outer cylindrical surface of the said dog, spikes loosely projected through the jack bar, and a spring engaging the contiguous surfaces of the spikes, substantially as shown and described. 3rd. In a floor jack, the combination, with a body provided with a cam rebate in its upper face, and a nose contiguous to the said cam rebate provided with a transverse groove, and an inclined central recess in its upper face contiguous to the groove, of an essentially T-shaped jack bar sliding longitudinally in the body, having a recess in its forward end, an essentially hook-shaped dog pivoted to the jack bar engaging the forward walls of the said rebate, a shoe having a transverse recess fixed to the upper face of the dog, a handle also pivoted to the jack bar vibrating in the recess of the shoe, friction rollers engaging the front and rear of the said dog, spikes passing through the said jack at an inclination toward the rear, a spring engaging the contiguous faces of the spikes, and a pawl pivoted to the upper face of the body engaging one face of the jack bar at or near its rear end, all combined to operate substantially in the manner and for the purpose specified.

**No. 32,885. Compound Tap or Cock.***(Robinet composé.)*

Henry C. Willmott, George Gillett, London, and Charles E. Frank, Clifton, Eng., 20th November, 1889; 5 years.

*Claim.*—1st. In a compound tap or cock, the combination, with the plug casing A, of a branch D provided with screw union a, the taper-plug B provided with the large direct passage b, the smaller passage c communicating between the branch D and said passage b, and the smaller passage f with apertures g, g', communicating with, and forming a direct discharge from the branch D, the double tapered flanged sleeve or collar C fitting upon the plug B and within the casing A, and having in the sleeve apertures d and e, corresponding to the apertures g and c, and the branch D, substantially as set forth. 2nd. In a compound tap or cock, the combination, with the plug casing A, of a branch D, the taper plug B provided with large direct passage b, and the smaller passages c and f, the double tapered flanged sleeve or collar C at one end upon the plug B and within said casing A, having apertures d and e and notches k in the rim of the flange, the chambered handle E, with spring pin l adapted to engage the notch k, said handle secured upon the end of said plug B, substantially as set forth. 3rd. In a compound cock or tap, the double tapered plug B, substantially as shown and described. 4th. In a compound tap or cock, the combination of a plug casing A having a branch D, with the screw union a, and a check g at one end, a tapered plug B having a large direct passage b, and the smaller passage a and c communicating with the branch D, and the passage b, and the set screw p, substantially as set forth.

**No. 32,886. Shoe Vamp. (Empeigne de chaussure.)**

Cyrille Rouette, Yamachiche, Qué., 20th November, 1889; 5 years.

*Résumé.*—Une chaussure ayant l'empeigne E, la platine A et les morceaux B et D, le tout tel que décrit et pour les fins indiquées.

**No. 32,887. Magazine Fire Arm.***(Arme à feu à magasin.)*

Charles P. N. Weatherby, New York, N.Y., U.S., 20th November, 1889; 5 years.

*Claim.*—1st. The combination, in a fire arm, of a barrel open at the breech, a movable breechblock, an inclined cartridge chamber extending downward in the stock at an angle to the line of the barrel and with a straight inclined forward face 5, and a carrier parallel to the line of the barrel and movable in said chamber upon an inclined guideway, substantially as described. 2nd. The combination, with the barrel stock having an inclined chamber, carrier in said chamber parallel with the line of the barrel, and inclined guideway for a slide connected with the carrier, substantially as set forth. 3rd. The combination of the barrel open at the breech, and stock having an inclined chamber, and an inclined face  $\gamma$ , and a carrier in said chamber parallel to the line of the barrel, and inclined guideway therefor, substantially as set forth. 4th. The combination, with the longitudinally movable breech block having a terminal slot or recess, of an L-shaped dog, one arm extending into said recess and bearing with its inner end only against the forward face of the recess in the block, and the other arm extending forward and provided with a catch at its outer end, substantially as set forth. 5th. The combination of the

barrel stock having an inclined cartridge chamber, case for holding the cartridges adapted to said chamber, spring arranged to bear upon and eject the case, and movable catch 2 arranged to bear upon and hold the case in position, substantially as set forth. 6th. The combination of the barrel stock having an inclined chamber, horizontal carrier supported to move in an inclined direction in said chamber, and case located in said chamber and having a lower and a side edge opening for the passage of the carrier, substantially as described. 7th. The combination, with the barrel, stock, and chamber of a magazine gun, of a closing piece located below the barrel and movable into position to close and open the cartridge chamber, and provided with a projecting operating arm, substantially as set forth.

**No. 32,888. Soldering Iron. (Fer à souder.)**

James H. Ferns, Montreal, Que., 21st November, 1889; 5 years.

*Claim.*—1st. The combination, with the gas tube, of a heating chamber attached to said tube, and provided on the inner side of its rear portion, with ribs forming flame passages between them, and with a socket in its front portion, and a soldering copper or point detachably secured in said socket of the heating chamber, substantially as set forth. 2nd. The combination, with the gas tube, of a heating chamber surrounding the end of said tube and provided with internal flame passages extending rearwardly on the outer side of said tube, a soldering point detachably secured in the front portion of the heating chamber and closing the same, and a deflector surrounding the gas tube in rear of the heating chamber, substantially as set forth.

**No. 32,889. Device for Securing Shades, Maps, and other like objects to Rollers. (Appareil pour assujétir les stores des fenêtres, cartes géographiques et autres choses semblables aux bâtons.)**

Philander A. Harris, Paterson, N.J., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. In a shade or map roller, the combination of the roller, the shade or map attached thereto, and a flexible band or cord attached to the roller, and also the shade or map, the point of attachment of said cord to the latter being just before the shade or map is entirely unwound nearer perpendicularly to its point of attachment to the roller than to the point measured along the shade or map where the latter is attached to the roller, whereby the cord is drawn taut and strain upon the shade or map at its points of attachment to the roller is prevented, substantially as shown and described. 2nd. In a shade or map roller, the combination of the roller, the shade or map attached thereto, and a flexible band or cord suspended upon said roller, and having its ends attached to the shade or map, the points of attachment of said cord to the latter being just before the shade or map is entirely unwound nearer perpendicularly to the points where the said cord is tangent to the sides of the roller than to the point measured along the shade or map where the latter is attached to the roller, whereby the cord is drawn taut and strain upon the shade or map at its points of attachment to the roller is prevented, substantially as shown and described. 3rd. In a shade or map roller, the combination of the roller A with its attached shade or map B, and the band or cord C, one end of the latter being attached to the roller A, and the other end to the shade or map B, the latter points of attachment being just before the shade or map is entirely unwound nearer to the point of attachment of the cord to the roller than to the point measured along the shade or map where the latter is attached to the roller, whereby the cord is drawn taut and strain upon the shade or map at its points of attachment to the roller is prevented, substantially as shown and described. 4th. In a shade or map roller, the combination of the roller A, with its attached shade or map B, and the band or cord C, which latter is hung upon the roller A, and has both its ends attached to the shade at the same place, the latter points of attachment being just before the shade or map is entirely unwound nearer to the points where the said cord is tangent to the sides of the roller than to the point measured along the shade or map where the latter is attached to the roller, whereby the cord is drawn taut and strain upon the shade or map at its points of attachment to the roller is prevented, substantially as shown and described. 5th. In a shade or map roller, the combination, of the roller A, with its attached shade or map B, and the band or cord C, the latter passing obliquely over the roller and having its ends attached to the shade or map at different points upon the same, the latter points being just before the shade or map is entirely unwound nearer perpendicularly to the points where the said cord is tangent to the sides of the roller than to the point measured along the shade or map where the latter is attached to the roller, whereby the cord is drawn taut and strain upon the shade or map at its points of attachment to the roller is prevented, substantially as shown and described.

**No. 32,890. Combined Door Lock and Hinge. (Serrure-penture de porte.)**

Louis Binsfeldt and John Chateau, Detroit, Mich., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. A combined door-lock and hinge, consisting of vertical rods normally extended and adapted to enter suitable apertures in the threshold and top-rail of a door-frame, combined with a latch arranged at right angles to said rods to engage the extended ends thereof, substantially as described. 2nd. A combined door-lock and hinge, consisting of two pairs of vertical rods, a spring adapted to normally expand them, suitable apertures in the threshold and top rail, and spring catches adapted to engage with the extended ends of the rods, substantially as described. 3rd. In a combined door lock and hinge, the combination, of two pairs of vertical rods normally extended by a spring beyond the top and bottom of the door, the notches, such as J, J', in said extended portions, the spring latches

K' adapted to engage in said notches, and suitable latch mechanism for operating the vertical rods, substantially as described. 4th. In a door provided upon both edges, with vertical grooves, caps or mouldings, two pairs of spring-actuated rods in said grooves adapted to be used as a lock or hinge for the door, combined with spring catches movable at right angles to said rods, substantially as described.

**No. 32,891. Process and Apparatus for the Manufacture of Sulphate of Lead Pigment.** (*Procédé et appareil pour la fabrication du sulfate de blanc de plomb.*)

James B. Hannay, Loch Long, Scotland, 21st November, 1889; 5 years.

*Claim.*—1st. In the process for the manufacture of sulphate of lead, volatilising suitable lead ore containing sulphur in a producer furnace, simultaneously producing combustible gas and then burning the gas and oxidising the fumes, substantially as herein described. 2nd. The herein described process for the manufacture of sulphate of lead pigment, the said process consisting of the following successive steps of operation, first, volatilising suitable lead ore containing sulphur, and, at the same time, producing combustible gas mingled with the fumes of the mineral, secondly, admitting air to a combustion chamber so as to effect combustion of the gases and oxidise the fumes, thirdly, by means of a steam injector, forcing the gaseous products and oxidised fumes through water, or acidulated water, in a condenser in which the sulphate of lead is deposited, and finally, washing and drying the sulphate produced. 3rd. For the manufacture of sulphate of lead pigment by the process above referred to, apparatus consisting of a volatilising furnace or gas producer, or several of these, a combustion chamber with suitable inlets for air, vertical and horizontal flues leading from the combustion chamber to a steam injector and condenser, all operating in combination substantially as described.

**No. 32,892. Sound Recording Tablet.** (*Tableau recordant les sons.*)

Charles S. Tainter, Washington, D.C., 21st November, 1889; 15 years.

*Claim.*—As an article of manufacture, a graphophone tablet composed of a flat plate or disk of metal, having a turned up edge and a layer of wax or a waxy composition thereon, substantially as described.

**No. 32,893. Tractor.** (*Pavé sans fin.*)

George H. Edwards, Chicago, Ill., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. The combination, substantially as hereinbefore set forth, of an endless track provided with a suitable folding truss, and one or more driving wheels gear connected with the endless track. 2nd. The combination, substantially as hereinbefore set forth, of a wheeled truck and an endless track provided with a suitable folding truss, and gear connected with one or more of the truck wheels about which it is arranged to pass. 3rd. An endless track, for the purpose set forth, provided with a folding truss, whereof the chord of extension comprises a series of pivoted links F, having oblique slots, as and for the purpose described. 4th. The combination, with the endless slatted track, of the triangular braces E arranged in pairs upon alternate slats, the braces E' arranged in pairs upon the intervening slats, and the chord links F connected with said braces by pivotal and sliding connections, as set forth. 5th. The combination, with the endless slatted track, of the braces E and E', the links or arms G by which the slats are hinged together in endless series, and the chord links F connected with the inner ends of the braces, substantially as described. 6th. The combination, with the endless slatted track of a folding truss comprising flanged braces E, flanged braces E', chord links by which the inner ends of the braces are connected together, and connections which are arranged at the outer ends of the braces, and which serve to hinge the slats together in endless series. 7th. The combination, with the endless track, of a folding truss comprising braces E provided with teeth D, and one or more wheels adapted for engaging said teeth, substantially as described. 8th. The combination, with the endless track, of a folding truss comprising braces between the two chords thereof, chord links F and pivots provided with sleeves which extend through slots in the chord links.

**No. 32,894. Counter Skiving Machine.**

(*Machine à chanfreiner les contreforts.*)

Edgar F. Belding, Fitchburg, Mass., U. S., 21st November, 1889; 5 years.

*Claim.*—1st. In a counter skiving machine, the oscillating mold  $a^2$  and the independent spring-actuated presser feet combined with the reciprocating feed wheels between the said presser feet and the knife substantially as described. 2nd. In a counter skiving machine, the oscillating mould feed wheels and knife, combined with mechanism, substantially as described, to give a quick return crank motion for the said mould, as and for the purpose specified. 3rd. In a counter skiving machine, the mould and feeding device and presser feet combined with the knife and the rocking or knife tilting holder to which this is adjustably attached, substantially as described. 4th. In a counter skiving machine, the rocking or tilting holder to which it is adjustably attached, and means, substantially as described, for rocking and tilting said holder, substantially as described. 5th. In a counter skiving machine, the mold feeding devices and presser feet combined with the knife, the knife holder movable by mechanism, substantially as described, on an axis parallel with the axis of the mold, and also on an axis at right angles to the aforesaid axis, substantially as described. 6th. In a counter skiving machine, the mold-feeding devices and presser feet combined with the knife, the holder to which

said knife is adjustably attached, and means, substantially as described, for rocking or tilting said holder on an axis at right angles to the axis of the mold, substantially as described. 7th. In a counter skiving machine, the mold feeding devices and presser feet combined with the counter holder composed of the posts 2, 3, 4, 5, made adjustable longitudinally and transversely, substantially as described. 8th. In a counter skiving machine, the mold feeding devices and presser feet combined with the counter feeding blades  $e, e'$  and the carrier to which said blades are adjustably attached, substantially as described. 9th. In a counter skiving machine, the mold-feeding devices and presser feet combined with the counter feeding blades carrier therefor, and mechanism, consisting of the sector link and slotted crank arm to give the quick return crank motion, substantially as described, for the said carrier, substantially as set forth.

**No. 32,895. Hinge.** (*Charnière.*)

Alexander H. Milne, Victoria, B.C., 21st November, 1889; 5 years.

*Claim.*—1st. The combination of the wings A, B and A', B', with the connecting link C, D, in such a manner that the upper surfaces of all three are flush, as shown and described for the purposes set forth. 2nd. The combination of the flats E and E', with the plates A and A', as shown and described for the purpose set forth.

**No. 32,896. Machine for Watering or Sprinkling Lawn.** (*Machine à arroser le gazon.*)

Philip Grant, Guelph, Ont., 21st November, 1889; 5 years.

*Claim.*—1st. The hollow conical piston A, with its packing rings or flanges, and valve  $k$ , in combination with the cylinders B, with its holes G and valve H, and in combination with the tank C, so fixed therein as above described. 2nd. The combination and attachment of the lever E with the hollow conical piston A, substantially as and for the purpose hereinbefore set forth.

**No. 32,897. Steam Boiler Furnace.**

(*Foyer de chaudière à vapeur.*)

William R. Roney, Chicago, Ill., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. The combination, with a furnace fire-box, provided with an inclined grate, of an arch projecting from the front wall of the fire-box above the grate, and extending in a position substantially parallel with the grate over the upper part only thereof, and forming a coking chamber practically distinct from the hopper and over the head of the grate only, while the lower part of the same inclined grate beyond the arch affords room for a bed of incandescent fuel external to the coking chamber, substantially as described. 2nd. The combination, with a furnace fire-box, provided with an inclined grate, of an external feed hopper arranged to deliver upon the extreme upper end of the grate, an arch or hood H, Figs. 1 to 13 projecting from the front wall of the fire-box over the grate, and extending rearwardly and downwardly over the upper part of the grate and forming an interior coking chamber practically distinct from the hopper, and an arch I, Figs. 1 to 13, projecting forwardly from the rear of the fire-box, above and clear of the arch H and terminating forward of the rear margin of the said arch H, and at a distance from the front wall of the fire-box, substantially as described. 3rd. An inclined furnace grate, composed of a series of rocking transverse non-fingered bars, having wide and flat upper surfaces, and provided with trunnions which rest upon suitable supports, said rocking bars being arranged with the rear edge of each bar overhanging the front edge of the bar beneath it, with a vertical space between the lapping portions of adjacent bars to allow of the desired rocking motion, and altogether forming a series of horizontal steps or shelves adapted to be tilted on their trunnions to advance the fuel, substantially as described. 4th. An inclined furnace grate, composed of a series of transverse bars having flat and broad upper surfaces mounted in position, wherein the rear edge of each bar overhangs the front edge of the subjacent bar, a vertical space being provided between the overlapping portions of the bars affording room for the desired rocking movement, and the front edges of the interlapping bars being provided with an upwardly projecting rib, substantially as described. 5th. The combination of an inclined grate, composed of transverse rocking bars provided with depending arms, a magazine arranged to feed upon the upper end of the grate and provided with a vibrating follower, a rotating eccentric or crank shaft, a connecting bar uniting the grate bar arms, a pitman connecting the crank or eccentric with the said connecting bar, and a connection uniting the crank or eccentric with the vibrating follower, substantially as described. 6th. The combination, with an inclined grate, composed of transverse rocking bars, and a magazine arranged to deliver upon the upper part of the grate and having a vibrating follower, of a rotating eccentric or crank shaft, an adjustable connection of the crank or eccentric with the magazine follower, and an adjustable connection of the crank or eccentric with the grate-bars, substantially as described. 7th. The combination, with the rocking grate-bars and reciprocating bar connected therewith, of an oscillating part or arm having a uniform range of movement, and a rod connecting the reciprocating bar with the said oscillating part or arm, and having adjustable connection with the latter, whereby the bars may be given a variable range of oscillation, substantially as described. 8th. The combination, with the rocking grate bars and connecting bar uniting said grate bars, of a power-vibrated part or arm, as  $J^6$ , Fig. 13, having a uniform range of movement, and provided with a connecting rod attached to said reciprocating bar, passing through the aperture in the vibrating arm, and provided with adjustable shoulders or nuts on opposite sides of said arm, substantially as described. 9th. The combination of transverse rocking grate bars hinged inclined supporting bars for said grate bars, a connecting bar uniting said grate bars, a vibrating arm, as  $J^5$ , Fig. 13, and a connecting rod united with the connecting bar and provided with adjusting nuts for engagement with the said vibrating arm, substantially as described. 10th. The combination, with an inclined grate having movable bars and with a magazine arranged to deliver upon

the upper part of the grate and provided with a vibrating follower, of a rotating crank or eccentric shaft, having actuating connection with the grate bars, a vibrating vertical arm, as J<sup>5</sup>, Fig. 13, an adjustable connection of said arm with the follower, and an actuating connection of said crank shaft with the vibrating arm, substantially as described. 11th. The combination, with the rocking bars of an inclined furnace grate and feed magazine provided with a vibrating follower, of a rotating crank or eccentric shaft, a vibrating vertical arm, as J<sup>5</sup>, Fig. 13, an adjustable connection of said arm with the follower, a connection of the arm with the crank-shaft, and an adjustable connection of the crank shaft with the grate-bars, substantially as described. 12th. The combination, with the rocking bars of an inclined grate and with a feed magazine provided with a vibrating follower, of a rotating crank or eccentric shaft, a vibrating vertical arm connected with both the follower and with the crank shaft and an adjustable actuating connection of the crank shaft with the grate bars, substantially as described. 13th. The combination, with an inclined furnace grate having transverse rocking bars, an elevated magazine and a fixed cross-plate at the head of the grate, of a follower located opposite the feeding opening of the hopper and pivoted at its upper part, and a bottom plate of the hopper flexibly connected with the follower and resting movably upon said fixed plate, substantially as described. 14th. In a furnace grate, comprising transverse rocking grate bars, inclined supporting bars for said grate bars, and supports for the inclined bars, the said inclined bars being provided at their upper ends with hinged connections with their support. 15th. The combination, with an inclined grate B, Figs. 14 to 18, of a foot-grate which is concaved from front to rear and has its front and discharging portion practically in line with the inclined grate, said foot-grate being supported on a transverse axis arranged to allow the front of said grate to be lowered and raised, substantially as described. 16th. The combination, with an inclined grate B, Figs. 14 to 18, of a grate C which is concaved from front to rear and is supported on a transverse axis beneath and at the rear of the middle of the grate, substantially as described. 17th. The combination, with an inclined grate B, Figs. 14 to 18, of a foot grate C which is concaved from front to rear, a cross-beam C<sup>1</sup> beneath and pivotally supporting the foot grate, an arm C<sup>2</sup> connected with the grate C, whereby the grate may be operated at pleasure. 18th. The combination, with rocking grate bars, a lever J, Figs. 14 to 18, provided with an aperture J, and a screw-threaded connecting rod I passing through the aperture J and provided with adjustable nuts on opposite sides of the lever, of a sleeve I<sup>2</sup> embracing the rod I between the nuts thereon

### No. 32,898. Vehicle. (*Voiture.*)

Jacob G. Kenyon, Port Kenyon, Cal., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. In a vehicle, the combination of a wheel and an axle or spindle with which it is connected so as to rotate together, and an opposing wheel of smaller diameter having an axle or spindle connected with it so as to rotate together, said axles or spindles passing the one above the other and journalled in separate boxes near each side, substantially as described. 2nd. In a vehicle, opposing wheels, each having an independent axle so connected with it that wheel and axle shall rotate together, said axles passing each other, in combination with suitable bearings carried by the vehicle frame on each side and in which the wheel on hub-ends of the axles are journalled, and adjustable boxes also carried by the vehicle frame on each side and in which the outer ends of said axles are journalled, substantially as described. 3rd. In a vehicle, opposing wheels, each having an independent axle so connected with it that wheel and axle shall rotate together, said axles passing each other and having on their outer end a ball, in combination with the vehicle frame, the bearing plates carried thereby on each side and having the spherical sockets for the reception of the ball-ends of the axles, and the cylindrical sockets for the reception of the hub-ends of the axles, substantially as described.

### No. 32,899. Electric Cartridge and Primer.

(*Cartouche et amorce électriques.*)

Selden A. Day, Bowling Green, Ohio, U.S., 21st November, 1889; 5 years.

*Claim.*—1st. In an electric primer or cartridge, the combination of a metal cup arranged with its open side toward the front and adapted to constitute one of the electrodes of the cartridge, with a tubular insulating sheath around said cup adapted in use to electrically separate said cup from the other electrode of the cartridge, whereby, in the firing of the cartridge, the sides of said cup are adapted to expand and force the insulating sheath against the primer seat to form a gas-check. 2nd. The combination, with a cartridge shell having a turned-in neck to form a primer seat, of a metal cup placed in said seat with its open side toward the front, and an insulating sheath intervening between said cup and neck. 3rd. The combination to form an electric primer, of a tubular insulating sheath, a conductor within it consisting of a metal cup arranged with its open side toward the front, and an outer conductor consisting of a metal tube surrounding said sheath and electrically separated thereby from said cup. 4th. In an electric primer or cartridge, the combination, of a tubular insulating sheath, an inner metallic conductor within said sheath, an outer metallic conductor exterior to said sheath, and an incandescing conductor having one end confined between the sheath and one of said conductors, and its other end electrically connected to the other of said conductors. 5th. In an electric primer or cartridge, the combination of a tubular insulating sheath, an inner metallic conductor within said sheath, an outer metallic conductor exterior to said sheath, and an incandescing conductor having its one end confined between the sheath and the inner conductor, and its other end confined between the sheath and the outer conductor, whereby its ends are brought into electrical connection with said conductors. 6th. The combination to form an electric primer, of a tubular insulating sheath, a tubular outer metallic conductor surrounding said sheath, an inner metallic conductor inclosed by said sheath and of less length

than the sheath, so that the latter projects forward beyond it and forms a recess, and an incandescing conductor having its one end confined between the sheath and the inner conductor, and its other end confined between the sheath and the outer conductor, and arranged to cross said recess. 7th. The combination to form an electric primer, of a tubular insulating sheath, a tubular outer metallic conductor surrounding said sheath, an inner metallic conductor inclosed by said sheath and recessed on its forward side to form a powder cavity, and an incandescing conductor having its one end confined between the sheath and the inner conductor, and its other end confined between the sheath and the outer conductor and arranged to cross in front of said powder cavity. 8th. In an electric cartridge or primer, the combination of a tubular insulating sheath, an inner metallic conductor within said sheath, an outer metallic conductor exterior to said sheath, and an incandescing conductor consisting of a fine wire having a flattened end confined flatwise between the sheath and one of said conductors, and its other end electrically connected to the other of said conductors. 9th. The combination to form an electric primer, of a tubular insulating sheath, an inner metallic conductor within said sheath, an outer metallic conductor exterior to said sheath, and an incandescing conductor having the form of a flat ribbon and arranged with its one end confined flatwise between the sheath and the inner conductor, and its other end confined flatwise between the sheath and the outer conductor.

### No. 32,900. Vehicle Seat. (*Siège de voiture.*)

Joseph F. Goodrich, New Haven, Conn., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. A jump-seat for vehicles having an independently-movable back, and means for supporting such back in a horizontal position independent of the adjustments of other parts of the vehicle, substantially as set forth. 2nd. A jump-seat for vehicles having an independently-movable back, and means for supporting such back in horizontal position and disconnected from it to permit it to be used as a seat, or as a back independent of the adjustments of the other parts of the vehicle, substantially as set forth. 3rd. The combination, in a vehicle, with a seat, of a jump-seat adapted to be used by itself and to be jumped over, and upon, the other seat, and having a movable or hinged back, and means for supporting such back in a horizontal position to form a seat, substantially as set forth. 4th. A jump-seat for vehicles, having a hinged back and a frame pivoted to the seat and to the vehicle body, and supporting the seat in its ordinary position, and the seat back when the seat is jumped forward and the back turned down to form a seat, substantially as set forth. 5th. A jump-seat for vehicles, having a hinged back, and pivotal frame pivoted to the seat and to the vehicle body, and having seat-bearings upon which the seat rests when in its normal position, and arms which support the seat in such position, and the seat-back when the seat is jumped forward, and the back turned down to form a seat, substantially as set forth. 6th. A jump-seat for vehicles, having a hinged back, and two light skeleton metal frames pivoted to such seat and to the vehicle body, and adapted to support the seat when in its ordinary position, and its back when the same is turned down to form a seat, substantially as set forth.

### No. 32,901. Carbon Contact or Commutator Brush. (*Interrupteur de charbon ou aigrette de commutateur.*)

Charles J. Van Depoele, Lynn, Mass., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. The combination, with a sectional commutator, of commutator brushes bearing upon the surface thereof and formed of carbon or other similar unyielding material. 2nd. The combination, with a commutator cylinder formed of separated insulated segments, of commutator brushes bearing upon the surfaces thereof, and formed of carbon or other similar unyielding material and of a width greater than the distances between the commutator or segments, substantially as described. 3rd. The combination, with an electro dynamic machine, of commutator brush boxes and movable supports therefor, carbon commutator brushes free to move within said boxes, adjustable spring, actuated forms for pressing the carbon brushes against said commutator, substantially as described. 4th. The combination, with an electro dynamic machine, of commutator brush-boxes and radially moving support therefor, carbon commutator brushes free to move within said boxes, and a follower or followers for pressing the carbon brushes against the commutator, substantially as shown and described. 5th. The combination, with a commutator of an electro dynamic machine, of commutator brush boxes arranged radially with respect thereto, circumferentially moving supports therefor, resilient arms connecting the brush-boxes and their supports, and a link connecting said supports, whereby they may be rotated simultaneously in opposite directions, and the brushes moved away from, or toward, the commutator, substantially as described. 6th. The combination, with an electro dynamic machine, of commutator brush-box, resilient arms attached to, and extending from, said boxes, and being longitudinally adjustable in pivoted supports, connections between the said pivoted supports, whereby the said supports may be rotated simultaneously in opposite directions, and the brush-boxes moved away from, or toward, the commutator, and a hand lever connected to one of the pivotal supports having a spring detent, whereby the pressure of the brush-boxes upon the commutator cylinder may be increased or diminished as desired, substantially as described. 7th. The combination, with an electro dynamic motor and the commutator cylinder thereof of an arm pivoted radially with respect thereto, rotating supports upon said arm, resilient arms projecting therethrough and longitudinally adjustable in said supports, commutator brush-boxes secured to the ends of said resilient arms, a link uniting said rotating supports, and a hand lever secured to one of said supports, whereby the same may be rotated simultaneously in opposite directions and the brush-boxes moved away from, or toward, the commutator cylinder, substantially as described.

**No. 32,902. Hame Fastener.***(Couprière d'attelles.)*

Frederick R. Bostwick, Toronto, Ont., (assignee of Samuel J. Wilson, Minneapolis, Minn., U. S.), 21st November, 1889; 5 years.

*Claim.*—1st. The combination of the grooved case A, the hook *a*, the lever B, the hook C, and a spring D fitting into a recess formed in the end of the hook C, substantially as described and for the purpose set forth. 2nd. The combination of the grooved case A, the hook *a*, the keeper *a'*, the lever B, the hook C, and a spring D formed on the end of the lever B, and fitting into a recess formed in the end of the hook C, substantially as and for the purpose set forth. 3rd. The combination of the grooved case A, the hook *a*, the keeper *a'*, the lever B, the hook C, the bolt E, and a spring D formed on the end of the lever B, and fitting into a recess formed in the end of the hook C, substantially as and for the purpose set forth. 4th. The combination of the grooved case A, the hook *a*, the keeper *a'*, the lever B, the hook C, the bolt E, the ratchet *b'*, the rivet *a''*, and a spring D formed on the end of the lever B, and fitting into a recess formed in the end of the hook C, substantially as and for the purpose set forth. 5th. The combination of the grooved case A, the hook *a*, the keeper *a'*, the lever B, the hook C, the bolt E, the ratchet *b'*, the rivet *a''*, and a spring D fitted with presser coils *c'*, *c'*, fitting into a recess formed in the end of the hook C, substantially as and for the purpose set forth.

**No. 32,903. Loom for Weaving Narrow Ware Fabrics.***(Métier à tisser les tissus étroits.)*

Joseph W. Green, Jr., and The Glendale Elastic Fabrics Company (assignees of George C. Moore), Easthampton, Mass., U. S., 21st November, 1889; 5 years.

*Claim.*—1st. The combination, in a loom, of a positively operated shuttle-driving bar reciprocating in the lay, and positively operated harnesses actuated by cams and levers arranged below the same and connected therewith by rigid links. 2nd. The combination, in a loom, of a lay reciprocating horizontally in straight or right line guides, a shuttle-driving bar reciprocating in said lay, and a cam lever and pitman for positively operating said shuttle-driving bar. 3rd. The combination, in a loom, of a lay reciprocating horizontally in right line guides, a positively operated shuttle-driving bar reciprocating in said lay, and positively operated harnesses actuated by cams, levers and links arranged below the same. 4th. A loom frame, having its upper portion constructed as described, so that the tension weights for the warp rolls may hang within the space occupied by the base of the loom frame. 5th. The combination, with the lay and its operating mechanism, of the grooved bars or rails *a* attached to the lay, the anti-friction rolls *a'* fitting in the grooves of said rails, and the loom frame by which said rolls are supported. 6th. The combination, with the lay and its operating mechanism, of a shuttle-driving bar fitted to reciprocate in the lay, a lever pivoted near its center, a pitman connecting said lever with said driving bar, a cam for operating said lever and a shaft by which said cam is carried. 7th. The combination, with the lay and its operating mechanism, of a shuttle driving bar fitted to reciprocate in said lay, a lever, a pitman positively connecting said lever with said driving bar, said lever being provided with bowls or anti-friction rolls, a flange cam, the edge of which is received between said bowls or rolls, and a shaft by which said cam is carried. 8th. The combination, with the lay and its operating mechanism, of a shuttle driving bar fitted to reciprocate in said lay, a lever having a roller slide provided with bowls or anti-friction rolls, a pitman positively connecting said lever with said driving bar, a plate or bracket having a guiding slot in which said roller slide works, a flange cam, the edge of which is embraced by said bowls or anti-friction rolls, and a shaft by which said cam is carried. 9th. The combination, with the lay, provided with cam slots, and the shuttle-driving bar reciprocating in said lay, of the vibrating shuttle-driving pins having universal joint connections with said driving bar. 10th. The combination, with the cam-slotted lay and its operating mechanism, of the shuttle-driving bar fitted to slide back and forth in said lay operating mechanism for said driving bar, the ball-headed pins having elliptical or flattened portions, the plates attached to said bar and having sockets to receive the heads of said pins, and slotted projections for guiding said pins in their back and forth vibrations. 11th. The combination, with the lay, having the cam slots *c'*, of the shuttle-driving bar *C'*, having the plates *c'*, *c'*, the former having the slotted projections or standards *c'*, the shuttle driving pins *c'*, having elliptical or flattened portions *c'* and ball-heads *c'*, the latter socketed in said plates and the shuttles *F* having the open slots *F'* to receive the end of said pins. 12th. The combination with the tension pulleys *g'*, having in their inner sides round holes to receive the studs on which they can turn, and having in their outer sides square holes for the reception of square warp beam shafts, of friction bands or straps passing around said pulleys, and tension levers with which said straps are connected. 13th. The combination, with the warp beam supporting standards, provided with round studs, of the tension pulleys having on their inner sides round holes to fit said studs and on their outer sides square holes, the square warp beam shafts fitting in said square holes, the tension levers supported by said standards, the friction bands connected with said levers and passing around said pulleys, the pulleys *g'*, the weighted brackets or blocks *g''* by which said pulleys are carried, and which are arranged below the longer or outer ends of said levers, and the overhead guide pulleys *g* over which the warps pass. 14th. The combination, with the lay and its operating mechanism, of the sliding bar *F'*, the bell crank lever operatively connected with said lay and sliding bar, and having a series of collars *F'*, the pawls *F'* pivoted to said collars, the shafts *F'* having ratchet wheels *F'* and worms *F'*, the worm wheels *F'*, the take-up rolls *F'*, with which said worm wheels are connected, and the pressure rolls *F'*. 15th. The combination, with the machine frame, of the bearing plates *m*, having the curved slots *m'*, the warp guide rolls *L* journaled in said plates, the brackets *m'* and the bolts *m'* passing through said curved slots and adjustably securing said bearing plates to said brackets. 16th. The combination, with

the harnesses, of the grooved harness operating cams and their actuating mechanism, two connected levers for each harness, one of said levers being positively operated in both directions by one of said grooved harness cams, and the other of said levers being positively connected with and operated by the first-named lever, and rigid links or bars connecting the outer ends of said levers with the harness frames at or near the outer ends of the latter. 17th. The combination, with the harness cams and their operating mechanism, of the harnesses *n*, the connected harness operating levers *n'*, *n'* and the rigid links or bars *n'* connecting the outer ends of said levers with the harness frames, each of said links or bars being formed in two parts, and right and left-hand screws adjustably joining said parts together. 18th. The combination, with the square warp beam shafts *h*, of the tension pulleys *h'* attached to said shafts, the metallic friction bands *h'* passing around said pulleys, and the weighted levers *h'* to which said bands are attached. 19th. A loom shuttle, provided with a detachable cop-holding spindle and an enclosed bottom. 20th. The combination, with the shuttle body *F*, of the spindle *3* having a tang *5* provided with a hook *6* and a downwardly extending projection *7*, and the locking plate *8* having the recess or slot *9*, and the cross-bars *11* and *12* bridging the front of said recess or slot. 21st. The combination, with the shuttle body *F*, of the wire support *16*, the tension bow spring *14*, having notched or forked ends embracing said supports, and the pin *17*. 22nd. The combination, with the shuttle body *F*, of the tensions device consisting of the wire support *16*, the bow springs *14* and *15* and the pin *17*. 23rd. The combination, with the shuttle body *F*, of the tube *19* attached thereto, the take-up spring *18* and the plug *20* for removably securing said spring in said tube. 24th. A loom shuttle, provided on its under side, near its opposite ends, with slots opening to the front of the shuttle, combined with a shuttle driving bar having driving pins with universal joints. 25th. The combination, with a loom shuttle body, of a tensions device consisting of two coils of wire, one of said coils being stationary relative to the body of the shuttle, and a spring arm by which the other of the said coils is carried, whereby it is free to move towards and from the said stationary coil. 26th. The combination, with the shuttle body, of the frame consisting of the fixed and movable arms *23* and *24*, the latter being a spring arm, and the coils *25* and *26* attached to the said arms.

**No. 32,904. Brake Shoe.***(Sabot de frein.)*

Joseph Pollock and Edward G. Gregory, Selma, Ala., U. S., 21st November, 1889; 5 years.

*Claim.*—1st. The combination, with the brake-shoe or other article, of the rods and perforated plate, as and for the purposes described. 2nd. The combination, with a shoe or other article, of the rods provided with shoulders near their rear ends, substantially as described. 3rd. The combination of the brake shoe or other article and the rods, the latter being provided with a coating of boiled linseed oil and mineral point, as and for the purpose described.

**No. 32,905. Roll Wrapping Paper Holder.***(Porte-papier à enveloppe enroulé.)*

Frank C. Helm, Chicago, Ill., and George F. Griffith, Dayton, Ohio (assignees of Guy L. Kennedy, Chicago, Ill.), U. S., 21st November, 1889; 5 years.

*Claim.*—1st. In a roll paper holder and printer, the combination of the type cylinder with the impression roller and inking roller, the cylinder being supported by the rollers, substantially as specified. 2nd. In a roll paper holder and printer, the combination of the type cylinder with stationary journaled impression and inking rollers by which the cylinder is supported, substantially as specified. 3rd. The combination, with the paper roll cylinder or shaft, and the standard in which it is journaled, of the brake, consisting of a clamp acting to exert friction upon the standard, substantially as specified. 4th. The combination, with the paper roll cylinder or shaft of a roll paper holder, of a friction device consisting of a socketed button, having an axial screw projecting through the side standard of the holder, and a thumb-nut on said screw clamping said standard, substantially as specified. 5th. The combination, with the paper roll cylinder, the type cylinder and the smoothing roller of the knife consisting of a longitudinally grooved wood strip, and a blade inserted in such groove, substantially as specified. 6th. The combination, with a roll paper holder, of a knife, consisting of the longitudinally grooved wood strip and the sheet metal blade held in such groove, substantially as specified. 7th. The combination, with the knife and the type cylinder of the supporting wire *n*, substantially as specified. 8th. The roll paper holder, printer and cutter, consisting of a paper cylinder, a stationarily journaled impression roller, a stationarily journaled inking roller, a type cylinder supported between said impression and inking rollers, and a knife, substantially as specified. 9th. The roll paper holder, printer and cutter, consisting of a stationarily journaled paper cylinder, a stationarily journaled smoothing roller acting also as an impression roller, a type cylinder and inking roller and a knife, the smoothing roller being below the plane of the paper cylinder and the paper being passed around it with an abrupt change of direction, substantially as specified. 10th. The roll paper holder, printer and cutter, consisting of the paper cylinder, a smoothing and impression roller, a printing cylinder, an inking roller, a paper-supporting wire *n* and a knife, all the parts being constructed and relatively arranged as set forth, substantially as specified. 11th. In a printing paper holder, a type cylinder supported between the impression and the inking rollers, and held against end play by flanges *f* and *g*, in combination with said rollers, substantially as specified. 12th. The combination, with the paper roll cylinder, the impression roller and the knife, of the type cylinder receiving its actuating power from the paper and the impression roller, substantially as specified. 13th. The printing paper holder, consisting of a paper roll cylinder, printing mechanism actuated by the passage of the paper, and a securing knife, substantially as specified. 14th. The combination of the type cylinder, having yielding type *P* with the impression and inking rollers, substantially as specified.



**No. 32,906. Folding Machinery for Printing Presses.** (*Machine à plier pour les presses d'imprimeries.*)

The Opinion Manufacturing Company, Bradford (assignee of George W. Kendall, St. Albans), Vt., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. The combination, with the folding blades C, D, E and the pairs of folding rollers and sets of tapes of the reciprocating bar H, and the respective devices for giving motion to the folding-blades in succession by the movement of the reciprocating bar H, substantially as set forth. 2nd. The combination, with the folding blades C and the rollers and tapes, of the frame C<sup>1</sup> carrying such blade, the connecting rod C<sup>2</sup>, rock shaft C<sup>3</sup>, arms C<sup>4</sup> and C<sup>5</sup> and the latch C<sup>6</sup>, and slide H carrying the same and giving motion to the parts, substantially as set forth. 3rd. The combination, with the folding blade D and the slides and link for supporting the same, of the reciprocating slide H, and the inclined spring latch 62 upon the same for actuating the folding blade, and the rollers and sets of tapes for conveying away the sheets, substantially as set forth. 4th. The combination, with the folding blade F and rollers 30, 31, of the slide H, the rock-shaft F<sup>1</sup>, arms F<sup>2</sup>, F<sup>3</sup>, and latch C<sup>6</sup> on the slide for giving motion to the blade F upon the return movement of the slide H, substantially as set forth. 5th. The combination, with the trough L for receiving the folded sheets, the follower N and means, substantially as specified, for reciprocating said follower, of the lever O<sup>1</sup>, the link O<sup>2</sup> connecting the follower to said lever O<sup>1</sup>, the sheet supporter O pivoted to the lever O<sup>1</sup>, the lifter P connected to the sheet-supporter O, and pins for the lifter to take against, substantially as and for the purposes specified.

**No. 32,907. Quilting Machine.**

(*Métier à piquer.*)

Eli W. Broadbent, New York, N. Y. (assignee of Alfred Faulkner, Jersey, N. J.), U.S., 21st November, 1889; 5 years.

*Claim.*—1st. In a quilting machine, the combination, with a needle bar composed of parallel sections, of needles having heads arranged between said sections, said heads being provided with flanges extending beneath the sections of the needle bar and at right angles to the direction of the length thereof, and clamping devices for securing said sections together, substantially as specified. 2nd. In a quilting machine, the combination with a needle-bar of a number of needles secured thereon and capable of adjustment in the direction of the length of the bar, a number of loopers, a bar upon which said loopers are adjustably secured, so as to be adjustable in the direction of the length of the bar, and mechanism for imparting a longitudinal reciprocation to said bar, substantially as specified. 3rd. In a quilting machine, the combination, with reciprocating needles of a non-rotary looper-bar, a number of loopers arranged on said bar all of said loopers having hooks extending approximately parallel with the axis of said bar and mechanism for imparting a longitudinal movement to said bar, substantially as specified.

**No. 32,908. Slop Pail or Commode.**

(*Seau à rinçures ou siège d'aisance.*)

Henry Carter and Louise Augustin, Pontiac, Mich., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. The combination of the pail, the spring-catches secured thereto upon opposite sides near the top, and the seat removably retained within the top by the spring-catches and seated therein on an annular shoulder, and the cover secured to the seat and having the hinged and stationary portion, substantially as described. 2nd. In a commode, the combination of the pail A, the spring-catches C secured thereto and provided with the handles B, and the hook D engaging into a recess on top of the pail, the seat F removably supported on a shoulder inside of the pail and level with the top thereof, the recesses H on top of the seat, and the cover consisting of the part J secured to the seat, and the hinged portion I, substantially as described.

**No. 32,909. Gauge Cock.** (*Robinet-jauge.*)

Ezra F. Landis, Lancaster, Penn., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. The cock-stem D having the following functional elements, the threaded end, the angular shoulder, the pivoting lugs d, the face a<sup>1</sup> with the boss, and outlet orifice along the upper edge, the downwardly acting deflector b<sup>1</sup> and the downwardly projecting lower edge, substantially as and for the purpose hereinbefore set forth. 2nd. The compressing hood or disk C having the following functional elements, the side opening c, the perpendicular walls c<sup>1</sup>, the curved portion c<sup>2</sup> the central orifice c<sup>3</sup>, and the perpendicular lugs c<sup>4</sup>, substantially as and for the purpose hereinbefore set forth. 3rd. The metallic body A integral therewith, the valve-seat A<sup>1</sup> provided with the pins a and adapted to turn axially on the clamping bolt E, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the body A and the valve-seat A<sup>1</sup>, having the pins a, with removable valve-face B adapted to turn axially on the bolt E, substantially as and for the purpose hereinbefore set forth. 5th. The combination of the body A, the valve-seat A<sup>1</sup> the pins a and the valve-face B, with the compressing hood or disk C having the side opening c, the walls c<sup>1</sup>, the curved portion c<sup>2</sup>, the central orifice c<sup>3</sup>, and the lugs c<sup>4</sup>, substantially as and for the purpose hereinbefore set forth. 6th. The combination of the body A, the valve-seat A<sup>1</sup>, the pins a, the valve-face B, and the compressing hood or disk C, as described, with the clamping bolt E, and the button screw e forming the hand lever G, substantially as and for the purpose hereinbefore set forth. 7th. The combination of the cock-stem D, as hereinbefore described, with the hand lever G, as hereinbefore described, the two pivotally joined by the pin F forming my multiple valve-face gauge-cock, substantially as and for the purpose hereinbefore set forth.

**No. 32,910. Composition of Matter to be used for making Hair Grow on the Human Skin.** (*Composition de matières pour faire pousser les cheveux.*)

Clemens Groos, Riverside, N. J., U.S., 21st November, 1889; 5 years.

*Claim.*—The herein described composition of matter to be used for making hair grow on the human skin, and consisting of water, alcohol, and the pollen of pine blossom, combined in the proportions specified.

**No. 32,911. Hydro-Carbon or Crude Petroleum Burner.** (*Foyer à hydrocarbures ou à pétrole cru.*)

Wilson S. More, Janestown, N. Y., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. In a hydro-carbon or crude petroleum burner, the combination of a retort provided with opening for the admission of crude oil and for the escape of the oil and the gases emitted therefrom, into a fire-pot provided with ventilating openings, substantially as shown and described. 2nd. In a petroleum burner, the fire-pot C having perforated sides and the perforated air tube I, substantially as shown and described. 3rd. In a petroleum burner, a perforated fire-pot having a central perforated air tube to which is attached a flame spreader, substantially as herein shown and for the purpose set forth.

**No. 32,912. Rod Mill.** (*Laminoir.*)

Henry Roberts, Pittsburg, Penn., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. In a wire-rod mill, the combination, with the main mill-floor having an inclined surface which extends in a plane transversely to the rolls, substantially as described, of a series of rolls arranged on different lines of feed, whereby the propelling force of the rolls and the gravity of the loop are utilized to cause the loop to travel freely over the floor, substantially as and for the purposes described. 2nd. In a rod-mill, the combination, with the rolls, and a receiving mill-floor, of an open guide-trough or channel sunk in the mill-floor and extending from the rolls, substantially as and for the purposes specified. 3rd. In a rod-mill, the combination, with two sets of rolls arranged on different lines of feed, and the mill-floor, of an open sunken guide-trough or channel arranged on the delivery side of the primary rolls and leading therefrom, for the purpose of guiding the primary branch of the loop, substantially as and for the purposes specified. 4th. In a wire-rod mill, the combination, with the main mill-floor having an inclined surface extending in a plane transversely to the rolls, substantially as described, of a series of rolls arranged on different lines of feed, whereby the propelling force of the rolls and the gravity of the loop are utilized to cause the loop to travel freely over the floor, and a guide extending along the said inclined main floor transversely to the delivery side of the primary rolls, and adapted to guide the primary branch of the loop, substantially as and for the purposes described. 5th. In a rod-mill, the combination, with two sets of rolls arranged on different lines of feed, of a mill-floor having a downwardly and obliquely inclined guide extending along said floor from the delivery side of the primary rolls, substantially as and for the purposes described. 6th. In a rod-mill, the combination, with the rolls of a plate-fender arranged in the line of the feed, substantially as and for the purpose specified. 7th. In a rod-mill, the combination, with two sets of rolls arranged on different lines of feed, of a plate-guard or fender arranged in the circuit between the rolls, substantially as and for the purposes specified. 8th. In a rod-mill, the combination, with two sets of rolls arranged in different lines of feed, of an inclined plate-guard or fender arranged in the circuit between the rolls, substantially as and for the purposes described. 9th. In a wire-rod mill, the combination, with two sets of rolls arranged on different lines of feed, of a single branch guide-trough or channel having a flat bottom extending along the mill-floor from the delivery side of the primary set of rolls only and transversely therefrom, and the mill-floor at the side of said guide-trough or channel, whereby the primary branch of the loop is confined and guided and permitted by the flat bottom to have a free course, restricted laterally by the sides of the trough or channel while the return branch is permitted to travel freely on the floor outside the limits of the channel, substantially as and for the purposes specified.

**No. 32,913. Wire Rod Mill.**

(*Laminoir à fil de fer.*)

Henry Roberts, Pittsburg, Penn., U.S., 21st November, 1889; 5 years.

*Claim.*—1st. In a wire-rod mill, the combination, with two sets of rolls arranged to have different lines of feed, and an inclined sub-floor leading to and from said pairs of rolls, and a covering floor arranged over said inclined sub-floor, substantially as and for the purposes specified. 2nd. In a wire-rod mill, the combination, with two sets of rolls arranged to have different lines of feed, of an over-feed regulator leading from the rolls to the floor, an inclined receiving floor, and a curved projection or stop arranged on said floor at or near the end of the loop-path, substantially as and for the purposes described. 3rd. In a wire-rod mill, the combination, with two sets of rolls arranged to have different lines of feed, of an inclined sub-floor, an upper or covering floor, and a loop-stop arranged on the sub-floor under the covering floor, substantially as and for the purposes specified. 4th. In a wire-rod mill, the combination, with two sets of rolls arranged to have different lines of feed, of an inclined loop-trough having at one side an open passage and at the other a partially covered passage, substantially as and for the purposes described. 5th. In a wire-rod mill, the combination, with two sets of rolls arranged to have different lines of feed, of a loop-trough provided with lateral steps or risers, substantially as and for the purposes specified. 6th. In a wire-rod mill, the combination, with the rolls

of a longitudinal inclined guide-trough having a laterally inclined side, substantially as and for the purposes specified. 7th. In a wire-rod mill, the combination, with two sets of rolls, of a loop-trough having a gutter 11, and a plate 12 which partially covers said gutter, substantially as and for the purposes specified.

### No. 32,914. Secondary or Electric Storage Battery. (*Batterie secondaire ou accumulateur électrique*)

Hiram H. Carpenter, New York, N.Y., U.S., 21st November, 1889; 5 years.

**Claim.**—1st. A perforated electrode for secondary or electric storage batteries, composed of cerussite made into compressed tablets and enclosed in a perforated case composed of lead or any alloy thereof. 2nd. A perforated electrode for secondary or electric storage batteries made or composed of cerussite, substantially as described. 3rd. An electrode for secondary or electric storage batteries perforated through and through with a multiplicity of small holes, composed entirely of active matter with a conducting support or case also perforated, as and for the purpose intended, substantially as described. 4th. An electrode for secondary or electric storage batteries composed of cerussite and perforated, as herein described, in combination with a perforated envelope or case having a post made integral therewith, substantially as described.

### No. 32,915. Broom Clasp. (*Ligature de balai*)

Mary C. Eichhorn, Brookline, Mass., U.S., 21st November, 1889; 5 years.

**Claim.**—1st. A device for maintaining the straws composing the body of a broom in proper position, consisting of a rod or bar adapted to extend through the broom from side to side, and provided with projections to engage the straws of the broom, and means for clamping or binding the straws upon the rod or bar, as set forth. 2nd. The combination, with the rod or bar a provided with laterally-extending teeth or tines and having on the ends the transverse bars *d*, of the band or strap *e*, substantially as set forth.

### No. 32,916. Cuff Adjuster. (*Agrafe poignet*)

Frederick M. Symonds, Melton Mowbray, Eng., 21st November, 1889; 5 years.

**Claim.**—The combination of strap adapted to be attached to the wrist band, and studs affixed thereto at a distance from each other to correspond with the length of the link, as set forth.

### No. 32,917. Wire Rope or Cable. (*Câble de fil de fer*)

The B Greening Wire Company, (assignee of Charles A. Herald), Hamilton, Ont., 21st November, 1889; 5 years.

**Claim.**—1st. A wire rope or cable having a core consisting of a flexible wire coil, substantially as set forth. 2nd. A wire rope or cable consisting of a core of coiled wire and enveloping strands, each consisting of a single wire, substantially as set forth. 3rd. A wire rope or cable having strands, each provided with a core of coiled wire, substantially as set forth. 4th. A rope or cable consisting of a core of coiled wire and enveloping strands, each having a core of coiled wire, substantially as set forth.

### No. 32,918. Water Wheel. (*Roue hydraulique*)

Albert P. Brayton, Jr., San Francisco, (assignee of Lester A. Pelton, Nevada), Cal., U.S., 21st November, 1889; 5 years.

**Claim.**—1st. The buckets of water-wheel having the curved bottoms meeting at an apex or sharp ridge in the centre and continuous with the inclined discharge sides, the bucket-fronts curved in the arc of a circle and inclined so as to narrow the buckets from the top toward the bottom, the bottom and dividing ridge also declining from the rear toward the front, as shown and described. 2nd. The buckets of a water-wheel having the curved bottoms meeting at a central apex or sharp ridge, and continuous with the discharge sides, the convex front and the inclined bottoms with the projecting angular lugs fitted to corresponding depressions or notches in the rim in which they are adjusted and retained, substantially as herein described. 3rd. The buckets of a water-wheel with the curved bottoms meeting in a central apex or ridge and continuous with the discharge sides, the convex front and the rear walls inclining backward upon each side of the wheel rim, substantially as herein described.

### No. 32,919. Separator. (*Séparateur*)

John M. Finch, Crookett, Cal., U.S., 23rd November, 1889; 5 years.

**Claim.**—1st. In a separator, the combination of a practically air-tight shell or casing, a disk or wheel mounted therein so as to rotate in a horizontal plane, and having a diameter sufficiently less than that of the shell or casing to leave a surrounding separating chamber in which a horizontally-revolving body of air accompanies said rotating disk or wheel, and a feed-device for directing the material to be separated into the sphere of the revolving body of air, substantially as described. 2nd. In a separator, the combination of a practically air-tight shell or casing and a disk or wheel mounted therein so as to rotate in a horizontal plane, and having a diameter sufficiently less than that of the shell or casing to leave a surrounding separating chamber in which a revolving body of air accompanies said disk or wheel, and a feed-hopper above for directing the material upon the top of said rotating disk or wheel, whereby it is discharged centrifugally over the edge thereof and into the sphere of the revolving body of air, substantially as described. 3rd. In a separator, the combination of a practically air-tight shell or casing and a horizon-

tally-rotating disk or wheel mounted therein, and having a diameter sufficiently less than that of the shell or casing to leave a surrounding separating chamber in which a revolving body of air accompanies the rotating disk or wheel, separate receiving floors or compartments with separate outlets in said surrounding chamber, and a feed-hopper for directing the material upon the top of the rotating disk or wheel, whereby it is directed centrifugally over its edge into the separating chamber and into the sphere of the revolving body of air therein, substantially as described. 4th. In a separator, the combination of a practically air-tight shell or casing having a contracted top-opening, and a horizontally-rotating disk or wheel mounted in said shell or casing leaving a surrounding separating chamber in which a revolving body of air accompanies it, and an annular communicating aperture between its top edge and the edge of top-opening of the shell or casing, a feed-hopper above for directing the material upon the top of the rotating disk or wheel, whereby it is thrown centrifugally outwardly and discharged over its edge and through the annular communicating aperture in the sphere of the revolving body of air, and an adjustable gate or valve for controlling and regulating said communicating aperture and the feed of the material through it, substantially as described. 5th. In a separator, the combination of a practically air-tight shell or casing having a top-opening, and a horizontally-rotating disk or wheel mounted in the shell or casing leaving a surrounding separating chamber in which a revolving body of air accompanies it, and an annular communicating aperture between its top and the edge of the top-opening of the shell or casing, a feed-hopper above having a downwardly-extending neck adapted to direct the material centrally upon the top of the disk or wheel, whereby said material is thrown outwardly by centrifugal force and discharge over its edge through the communicating aperture into the sphere of the revolving body of air, and the inverted pan-shaped gate or valve seated and vertically movable upon the neck of the hopper, and having its rim extending down into the communicating aperture, whereby the feed of material through said aperture is regulated and controlled, substantially as described. 6th. A separator consisting of the combination of the shell or casing, the horizontally-rotating disk or wheel mounted therein and leaving a surrounding separating chamber between its periphery and the wall of the shell or casing in which a revolving body of air accompanies it, and an annular communicating aperture from the top of said disk or wheel into said chamber, a flanged ledge within said chamber, scrapers secured to the disk or wheel, and operating in the bottom of the shell or casing and over the flanged ledge, separate outlets for said ledge and the bottom of the shell or casing, a feed-hopper adapted to direct the material upon the top of the disk or wheel, whereby it is thrown outwardly by centrifugal force and discharged into the surrounding separating chamber, and the vertically-adjustable gate or valve for controlling the communicating aperture from the top of the disk or wheel into the separating chamber, substantially as described.

### No. 32,920. Separator. (*Séparateur*)

John M. Finch, Crookett, and John R. Cross, San Francisco, Cal., U.S., 23rd November, 1889; 5 years.

**Claim.**—1st. In a separator, the combination of a shell or casing having independent discharges or outlets at its base, a rotary cylinder operating freely within the shell or casing, whereby a rotary current or body of air is created and accompanies the cylinder, and a feed-inlet for the material to the casing by which it is directed into the sphere of the uprising portion of the current or body of air, whereby the particles of different specific gravities are separated and are carried to the different discharge outlets, substantially as herein described. 2nd. In a separator, the combination of a shell or casing, a rotary cylinder operating freely within the shell or casing, whereby a rotary current or body of air is created and accompanies said cylinder, a feed inlet for the material for directing it into the uprising portion of the current or body of air, and a fixed shield-plate opposite the feed-inlet and protecting the periphery of the cylinder over its uprising portion, substantially as herein described. 3rd. In a separator, the combination of a shell or casing, a rotary cylinder operating freely within it, whereby a rotary current or body of air is created and accompanies the cylinder, a feed inlet for the material for directing it into the sphere of the uprising portion of the current or body of air, a fixed shield-plate protecting the uprising portion of the cylinder, and an opposing fixed plate forming a passage for the material within the sphere of the current or body of air, substantially as herein described. 4th. In a separator, the combination of a shell or casing having independent discharges or outlets at its base, a rotary cylinder operating freely within the shell or casing, whereby a rotary current or body of air is created and accompanies it, a feed-inlet for directing the material into the sphere of the uprising portion of the current or body of air, and an adjustable valve within the shell or casing and extending into the sphere of the current or body of air for regulating it, substantially as herein described. 5th. In a separator, the combination of a shell or casing having independent discharges or outlets at its base, a rotary cylinder operating freely within the shell or casing, whereby a rotary current or body of air is created and accompanies it, a feed-inlet for directing the material into the sphere of the uprising portion of the current or body of air, and an adjustable valve within the shell or casing at the upper portion of the uprising current or body of air, for regulating the suspension of the material, substantially as herein described. 6th. In a separator, the combination of a shell or casing having independent discharges or outlets at its base, a rotary cylinder operating freely within the shell or casing, whereby a rotary current or body of air is created and accompanies it, a feed-inlet for directing the material within the sphere of the uprising portion of the body or current of air, and adjustable valve within the

shell or casing below the cylinder for regulating the current or body of air, and an adjustable valve within the shell or casing at the upper portion of the uprising current or body of air for regulating the suspension of the material, substantially as herein described. 8th. In a separator, the combination of a shell or casing having a feed-inlet and independent discharge outlets at its base, a rotary cylinder having fan-blades on its periphery journaled in said casing and operating freely therein, whereby a rotary air-current is created, a fixed shield parallel with and protecting the uprising portion of the said cylinder, an adjustable valve journaled centrally within the shell or casing below for regulating the air-current, an adjustable valve journaled at the upper end of the fixed shield within the shell or casing, and the plate G parallel to said shield, substantially as herein described.

### No. 32,921. Metallic Flexible Joint Coupling. (*Manchon métallique flexible de joint.*)

Thomas W. Moran, Louisville, Ky., U.S., 23rd November, 1889; 5 years.

*Claim.*—1st. In a flexible coupling, the hollow hemisphere provided with the central nozzle and the bearing-flange and threaded at its mouth, the hollow sphere provided with the tapped nozzle and opening E and seated eccentrically on the bearing-flange, the meniscoid interspace between said sphere and hemisphere, and the screw cap-piece engaging the threaded portion of the hemisphere, substantially as specified. 2nd. The universal joint coupling for tubes consisting of the coupling hemisphere A, having the nozzle B and set-screw, the sphere C eccentric to the hemisphere, having the nozzle D and the interior opening E, the meniscoid interspace c' between said hemisphere and sphere, the cap-piece F threaded to engage said hemisphere and outstanding to engage said set-screw, and the interior capillary or thread-like oil groove i in the bearing for said sphere, substantially as specified. 3rd. The universal joint coupling for tubes, consisting of the hemisphere A having the threaded nozzle B and the inwardly standing bearing flange I, the oil-orr over thereon, the hollow sphere C ground to fit against the bearing flange f within the hemisphere and eccentric thereto, forming the meniscoid interspace having its narrowest portion at the flange I, and increasing in depth to the axial centre of the inner opening of the nozzle B, and the cap-piece F having the accurately ground inner surface to fit the sphere, and having the threaded portion to engage the threaded portion of the hemisphere, substantially as specified.

### No. 32,922. Oil Feeder. (*Alimentateur d'huile.*)

Robert B. Price, Saint John, N.B., 23rd November, 1889; 5 years.

*Claim.*—1st. The use of the casing D, D, substantially as and for the purposes hereinbefore set forth. 2nd. The use of the shoulder or projection E E, substantially as and for the purposes hereinbefore set forth.

### No. 32,923. Extension Table. (*Table à rallonge.*)

Warren Williams and Charles W. Munz, Detroit, Mich., U.S., 23rd November, 1889; 5 years.

*Claim.*—1st. In an extension-table, the combination, with the frame thereof, of the bars F having an incline thereon, and a receptacle in the stationary part of the table in which the leaves are adapted to be stored, substantially as described. 2nd. In an extension-table, the combination, with the frame, the bars F having inclines, a receptacle in the stationary part adapted to receive the leaves and store them in tiers, and of a detachable hinge between the tiers of leaves, substantially as described. 3rd. In an extension-table, the stationary part having a receptacle, the sliding part of leaves resting upon the extension bars and connected by hinges to each other and to the sliding part, and of leaf-supports K, substantially as described. 4th. In an extension-table of the kind described, a series of leaves hinged together by means of an extensible hinge, of a detachable hinge between the leaves adapted to be stored in different tiers, having a spring-arm i, a spring j, and a slotted catch k, substantially as described. 5th. In an extension-table having a stationary part, and a sliding part having sides b, and top a having moulding o, leaves connected together and adapted to be stored in a receptacle in the stationary part, the ends of the leaves being in line with the ends of the top of the stationary and sliding parts, substantially as described.

### No. 32,924. Paper Bag Holder.

(*Accroche sac de papier.*)

Frank C. Helm, Chicago, Ill., and George F. Griffith, Dayton, Ohio, (assignees of Guy L. Kennedy, Chicago, Ill.), U.S., 23rd November, 1889; 5 years.

*Claim.*—1st. The combination, with a holder adapted to hold a package of bags, of a printing roller so located in the holder as that the bags are drawn over the same as they are pulled from the holder, substantially as specified. 2nd. The combination, with the holder adapted to hold the package of bags, of a printing roller over which the bags are drawn, and the circumference of which conforms to the length of the portion of the bag which comes in contact with such cylinder, substantially as specified. 3rd. The combination, with a holder having a pin upon which the bags are threaded, of a printing device, substantially as specified. 4th. The combination, with a holder adapted to receive a package of bags, and provided with a pressure device, essentially as shown, of a printing roller, over which the bags are drawn when pulled out, substantially as specified. 5th. The combination, with a holder, having a pin upon which the bags are threaded, and a pressure device of a printing roller over which the bags are drawn, substantially as specified. 6th. The combination, with the holder and its printing roller, of a releasable spring device adapted to be swung out of the way when a fresh package of bags is to be inserted, substantially as specified. 7th. The combination, with a holder for the bags having a pin upon which the bags

may be threaded, said pin being adjustable, as set forth, of a printing device, substantially as specified. 8th. A holder for paper bags, provided with long slot bearings for the printing roller, and a series of bearings m for the inker, in combination with such printing roller and inker, substantially as specified. 9th. A holder for paper bags, provided with a slot k, having an upper portion to receive the journals of the printing roller, and another portion having branches to receive the journals of the inker, in combination with such roller and inker, substantially as specified. 10th. The combination, in a holder, of the printing roller, having long slot bearings, and an inker having fixed bearings and sustaining said printing roller, substantially as specified. 11th. The holder, having the pin upon which the bags are threaded adjustable longitudinally, and side guides adjustable transversely, in combination with a printing roller, substantially as specified. 12th. The bag paper holder, consisting of a holder having a pin upon which the bags may be threaded, a pressure device acting to force the bags down upon the type roller, a type roller actuated by the bag as it is drawn out, and an inker, substantially as specified.

### No. 32,925. Steam Engine. (*Machine à vapeur.*)

Nathan H. Edgerton, Philadelphia, and Charles M. Rhodes, Wayne, Penn., U.S., 23rd November, 1889; 5 years.

*Claim.*—1st. The combination, with a steam cylinder B, of a shaft D having bearings in the ends or heads of the cylinder, the reciprocating piston E on and engaging with shaft D, a spirally-formed groove in the periphery of said piston, said groove being located between the packed or steam-tight ends for said piston, and a pin or trundle-head f projecting from one of the cylinder sides into said groove, substantially as set forth. 2nd. In a steam or other engine, a cylinder, a shaft having bearings in the cylinder head or ends, a sliding or reciprocating piston on said shaft, a spirally-formed groove on the periphery of the piston and between its ends, and a pin or trundle-head on the cylinder engaging with said piston groove, for imparting a rotary motion to the piston and shaft as the piston reciprocates on the shaft, substantially as set forth. 3rd. In combination with an engine cylinder B, having closed ends b, the shaft D passing through and having bearings in said ends, a reciprocating piston E having steam-tight or packed ends mounted on said shaft, a spirally-formed groove in the periphery of said piston between its ends, and a pin or trundle-head f passing through the side of the cylinder at or near its transverse center and valves actuated by said shaft, substantially as set forth. 4th. In combination with an engine cylinder, having closed ends b, shaft D, having bearings in said ends b, sliding piston E on and engaging with said shaft, a spirally-formed groove in the periphery of said piston between its ends, a pin or trundle head f passing through the side of the cylinder and engaging with said piston groove, cut-off valves for said cylinder, and actuating mechanism interposed between the valve and said shaft, substantially as set forth. 5th. In combination with an engine cylinder B, a shaft D having bearings in the cylinder heads or ends, and having an angular cross-section between its said bearings, a reciprocating piston E on said shaft having a corresponding angular bore, and exterior or outer packed or steam-tight ends, a spirally-formed groove on the periphery of said piston, between its ends, and cylinder pin f engaging with said piston groove, substantially as and for the purpose set forth. 6th. The combination, with an engine cylinder shaft, of a reciprocating piston E on said shaft, having packed or steam-tight joints, with the cylinder and peripheral spiral groove between said ends, a cylinder pin f for engagement with said piston groove, and valves for the cylinder actuated by said shaft, substantially as set forth.

### No. 32,926. Roller Shade Holder.

The Wyant Manufacturing Company (assignee of Elias Beach), Chicago, Ill., U.S., 23rd November, 1889; 5 years.

*Claim.*—1st. The sheet metal roller shade holder, made semi-circular so as to conform to the surface of the roller and provided at its central portion with stiffening indentations, substantially as specified. 2nd. The sheet metal clamp for roller shades, made semi-circular, so as to conform to the surface of the roller and provided with central transverse indentations, whereby the longitudinal centre of the clamp is rendered stiffer than the edges thereof, substantially as specified.

### No. 32,927. Vehicle. (*Voiture.*)

Culver G. Thyng, Olean, (assignee of George Geddes, Fairmount), N. Y., U.S., 23rd November, 1889; 5 years.

*Claim.*—1st. In a two wheeled vehicle, the combination, with the body part thereof, of the crank arm axle a, substantially as described, the front and rear cross-springs B, B and the combined C and side springs C, C', formed and connected to the cross-springs B, B, substantially as and for the purpose described. 2nd. In a two wheeled vehicle, the combination, with the body part thereof, of the crank arm axle a, substantially as described, the combined C and side springs C and C' formed and connected to the axle A, formed and connected to the drop part of the axle, substantially as described, cross-springs B, B, drop shafts p, and braces 2 connected to the shafts, substantially as and for the purpose set forth.

### No. 32,928. Plaiting Attachment for Sewing Machines. (*Appareil à plisser pour les machines à coudre.*)

Eli W. Broadbent, New York, N. Y., (assignee of Alfred Faulkner, Jersey, N. J.), U.S., 23rd November, 1889; 5 years.

*Claim.*—1st. In an attachment for sewing machines, the combination, with a reciprocating knife or tongue, of a lever for operating said knife or tongue and with which the latter has a pivotal connection, a bearing surface, a spring on the lever for forcing the knife or tongue against said bearing surface and another spring adjacent

to said knife or tongue and adapted to bear thereon, to force the knife or tongue away from the goods when moving in one direction, substantially as specified. 2nd. The combination, with two sewing machines, of two reciprocating knives or tongues, levers for operating said knives or tongues and with which the latter have pivotal connections, bearing surfaces springs on the levers for forcing said knives or tongues against the bearing surfaces, and other springs adjacent to said knives or tongues and adapted to bear against the same, to force the knives or tongues away from said bearing surfaces when moving in one direction, substantially as specified. 3rd. The combination, with two sewing machines, of two knives or tongues having oblique movements in contrary directions, levers for operating said knives or tongues and with which the latter are pivotally connected, bearing surfaces adjacent to each of said knives or tongues, springs on the levers for forcing said knives or tongues against the bearing surfaces, and other springs adjacent to the knives or tongues for moving the knives or tongues away from said bearing surfaces when moving in one direction, substantially as specified. 4th. The combination, with a sewing machine, of a main shaft, a second shaft deriving motion from said main shaft, a cam on said second named shaft, a rock shaft, a bell crank lever on said rock shaft having one of its arms bearing on said cam, and a plaiting knife or tongue upon the other arm of said bell crank lever, substantially as specified. 5th. The combination, with two sewing machines, of a main shaft, a second shaft deriving motion from said main shaft, a third shaft deriving motion from the second named shaft, cams on said second named shaft, a rock shaft, bell crank levers on said rock shaft having one of their arms bearing upon said cams, and plaiting knives or tongues upon the other arms of said levers, substantially as specified. 6th. The combination, with two sewing machines, of a main shaft, a second shaft deriving motion from the main shaft, a third shaft deriving motion from the second named shaft, cams on said second named shaft, a rock shaft, bell crank levers mounted on the rock shaft, one of which levers is loose on said shaft and both of which have arms bearing against said cams, said cams being so constructed and arranged that said levers will be operated alternately in the same direction, and plaiting knives or tongues on the other arms of the levers, substantially as specified. 7th. The combination, with two sewing machines, of a main shaft, a second shaft deriving motion from the main shaft, a third shaft deriving motion from the said second shaft, cams on said second named shaft, a rock shaft, bell crank levers mounted on said rock shaft having arms bearing upon said cams, and plaiting knives or tongues on the other arms of said levers, said second named shaft and the rock shaft being arranged upon opposite sides of the machine, substantially as specified.

### No. 32,929. Refractory Composition.

(Composition refractaire.)

Thomas B. Kerr, Kansas, Kan., U. S., 27th November, 1889; 5 years.

*Claim.*—The herein described composition of matter to be used for lining furnaces, fire boxes, smelting furnaces, and the like, consisting of soap stone, burnt fire clay, soft cold cinder, common sand, cement, common salt and water, in the proportions specified.

### No. 32,930. Moulding plane. (Bouvet.)

Edward D. Johnson, Flagstaff, A. T., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. The combination, with a plane body 10, of formers 24 and 25, a bit 14, an adjusting screw 32 passed transversely through the body 10, into engagement with the inner edge of the bit, a wedged-faced clamping bolt 15, and a screw arranged in connection with said bolt, substantially as described. 2nd. The combination, with a moulding plane back or body, of formers 24 and 25, formed with grooves that are adapted to receive flanges 26, which project from the plane body parallel with its lower edge, set screws by which the formers are clamped to the plane body, a bit 14 which passes downward between the formers, a wedged-face clamping nut, an operating screw arranged in connection with the nut, and a retaining pin arranged in connection with the screw, substantially as described.

### No. 32,931. Reel for Fishing Rods.

(Dévidoir pour les cannes de pêche.)

John M. Kepler, Corry, Penn., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In combination with a fishing-rod or section thereof, a reel journaled within an opening formed therein, said reel being mounted upon and secured to a shaft having a crank arm pivoted thereto, said shaft containing a spring-actuated bolt which engages with notches formed in the crank handle adjacent to its pivot, substantially as and for the purpose set forth. 2nd. In combination with a fishing-pole or section thereof, having a recess in which is journaled, a reel, a cover for said recess, said cover being pivoted and provided adjacent to its pivot with a notch or recess with which a spring actuated bolt engages for holding the cover closed, substantially as shown and for the purpose set forth. 3rd. In combination with a fishing-rod or section thereof, a reel located within a mortise formed in said section, a casing adapted to inclose the reel, said casing having on one side a slot through which the line passes, and opposite thereto a cover and a pivoted crank handle for rotating the reel, said handle being adapted to be turned upon its pivot and enter a recess in the casing to lock the reel against rotation, substantially as and for the purpose set forth. 4th. In combination with a section of a fishing-rod having a mortise within which is located a reel, a casing adapted to be secured around said mortise, inner side plates *b, b*, against which the flanges of the reel abut, said casing having a cover, the slot through which the line passes, openings through which the shaft upon which the reel is mounted passes, and an opening in which the crank handle can be turned, substantially as and for the purpose set forth.

### No. 32,932. Coin Controlled Testing Machine. (Machine d'essai mise en action par une pièce de monnaie.)

Edward J. Colby, Chicago, Ill., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In a testing machine, the combination of a lung-testing apparatus and indicator with locking apparatus, which normally prevents the indicator from moving, a coin guide way, a push to force said coin through the guide way, and a projection from said locking apparatus in the path of such coin, so that, as the coin is forced through its guide way, pressure is applied to said projection by the coin and, with the locking apparatus, released to permit the indicator to move. 2nd. In a testing machine, the combination of a series of testing apparatuses and indicators, suitable connections, a series of discs connected with such indicators, suitable connections between such discs and testing apparatuses, a rock shaft and arms thereon normally locking such discs, a coin guide way and push, and an arm from such rock shaft in the path of said coin, so that, when the coin is pushed through its guide way, the arm is moved, the rock shaft rotated and the discs released so that the indicators can operate. 3rd. In a testing machine, the combination of a stand, lifting handles suspended above the same, a weighing platform fixed thereon, with a vertical case having suitable indicators and levers and rods, whereby pressure applied to said lifting handles or to said platform is registered by the indicators on the case. 4th. In a testing machine, the combination of a lifting machine and weighing machine, and locking devices which prevent said indicators from moving, an arm on such locking devices, a coin guide way into which said arm projects, and a push which forces said coin against the arm, operates the locking mechanism, releases the disc and permits the indicators to register. 5th. In a testing machine, the combination of a lifting machine, a weighing machine and a height testing machine, with indicating discs attached thereto, locking devices which prevent said discs and indicators from moving, an arm on such locking devices, a coin guide way into which said arm projects, and a push which forces said coin against the arm, operates the locking mechanism, releases the discs and permits the indicators to register. 6th. In a testing machine, the combination of a lifting machine, a weighing machine, a height testing machine and a lung testing machine, with indicating discs attached thereto, locking devices which prevent said discs and indicators from moving, an arm on such locking devices, a coin guide way into which said arms projects, and a push which forces said coin against the arm, operates the locking mechanism, releases the disc and permits the indicators to register.

### No. 32,933. Refrigerating Machine.

(Machine à glace.)

Ehregott T. Winkler, Philadelphia, Penn., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In combination with the circulating pipes of a refrigerating machine, a cylinder and piston having two valves Q, Q', and a common passage *q* leading to the pressure pipe, the two valves Q', Q', and a common pipe *q'* leading to the exhaust, whereby the piston is rendered double-acting in connection with the vapor chamber, in the stuffing boxes and pipes leading to the exhaust, substantially as described. 2nd. In combination with the stuffing boxes of a vapor engine, intermediate vapor chamber and pipes leading to the exhaust through the oil cup, substantially as described. 3rd. In a stuffing box of a vapor engine, the sectional packing rings arranged to break joints, as described, in combination with the sleeve *c*, substantially as described. 4th. In combination with the system of pipes and the compressor in the refrigerating apparatus, the valve case having valve chamber about the valve, and pipe from the condenser leading thereto, and means for regulating the valve, all substantially as described. 5th. In combination with the valve, a spring for retracting it, and a piston under pressure of the exhaust pipe tending to close said valve, substantially as described. 6th. In combination, the compressor having a supplemental vapor chamber, the pipe *m* leading therefrom, the receiver F for the escaping gas, the exhaust pipe *e* in communication with said chamber, substantially as described. 7th. In combination, the compressor evaporator and condenser, a regulating valve in connection with a piston 11, a liquid chamber F', a pipe leading from said chamber to the piston casing, and the exhaust pipe *e* communicating with said chamber, substantially as described. 8th. In combination, the compressor, the evaporator and condenser, the regulating valve in connection with the piston 11, the oil cup F having pipe connection with said cylinder, and also with the stuffing box, of the compressor, a pipe *m* for the escape of gas extending from a supplemental vapor chamber of the compressor into the oil cup, and the exhaust pipe *e* communicating with the oil cup, substantially as described.

### No. 32,934. Tobacco Cutter. (Coupe-tabac.)

Théophile Côté, Lévis, Que., 27th November, 1889; 5 years.

*Claim.*—1st. In a tobacco cutter, the hollow cylindrical cutter C having the raised cutting edges C', and the stem D journaled in the shell A, and provided with the folding handle E, substantially as shown and described. 2nd. In a tobacco cutter, the hollow cylindrical shell A having the mouth piece B, and the hollow cylindrical cutter C journaled in it, and provided with the handle E arranged to fold over the mouth piece B, and over the end of the shell A, substantially as herein shown and described.

### No. 32,935. Store Service Apparatus.

(Chien de magasin.)

James R. Haight, Adrian, Mich., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In a store service apparatus, the combination, with a way, a carriage travelling thereon, and a suitable propelling device, of a retarding spring engaging the carriage to retard its

movement when acted upon by the propelling device and arranged to release the carriage when under a predetermined tension, substantially as shown and described. 2nd. In a store service apparatus, the combination, with a way, a carriage travelling thereon, and a suitable propelling device, of a retarding spring provided with a catch engaging the carriage to retard its movement when acted upon by the propelling device, and arranged to release said carriage when said retarding spring is under a predetermined tension, substantially as shown and described. 3rd. In a store service apparatus, the combination, with a way, a carriage travelling thereon, and a suitable propelling device, of a retarding spring engaging the carriage to retard its movement when acted upon by the propelling device, and mechanism for releasing said carriage when said retarding spring is under a predetermined tension, substantially as shown and described. 4th. In a store service apparatus, the combination, with a way, a carriage travelling thereon, and a suitable propelling device, of a retarding spring provided with a catch engaging the carriage to retard its movement when acted upon by the propelling device, and mechanism for releasing the carriage when said retarding spring is under a predetermined tension, substantially as shown and described. 5th. In a store service apparatus, the combination, with a way, a carriage travelling thereon, and a suitable propelling device, of a retarding spring provided with a catch engaging the carriage to retard its movement, when acted upon by the propelling device, and adjustable mechanism for releasing the carriage when said retarding spring is under a predetermined tension, all constructed, arranged and operating, substantially as shown and described. 6th. In a store service apparatus, the combination, with a way, a carriage travelling thereon and a pivoted propelling lever provided with an operating cord and engaging directly with the carriage, of a retarding spring provided with a catch engaging the carriage to retard its movement when acted upon by the propelling lever, and mechanism for releasing the carriage when said retarding spring is under a predetermined tension, all constructed, arranged and operating substantially as shown and described. 7th. In a store service apparatus, the combination, with a way, a carriage travelling thereon, a pivoted propelling lever provided with an operating cord and engaging directly with the carriage, and a concussion spring adapted to engage the propelling lever, of a retarding spring provided with a catch engaging the carriage to retard its movement when operated upon by the propelling lever, and mechanism for releasing the carriage when said retarding spring is under a predetermined tension, all constructed, arranged and operating substantially as shown and described. 8th. In a store service apparatus, the combination, with a standard, a way, a carriage travelling thereon and provided with hooks at its ends, an arm projecting from the standard, a propelling lever pivoted to said arms and provided with an operating cord, and adapted to engage directly with the carriage, of an adjustable block secured to the standard, a retarding spring L secured to said block and having the catch portion / adapted to engage the hook on the carriage, and the inclined guards M extending over the catch portion of the retarding spring, all constructed, arranged and operating substantially as shown and described as and for the purpose set forth. 9th. In a store service apparatus, the combination, with a standard, a way, a carriage travelling thereon, of an arm projecting from the standard, a propelling lever pivoted to said arm and adapted to engage directly with the carriage, and an operating cord secured to the propelling lever and passing over a pulley mounted in the standard, and an operating lever pivoted to the standard and attached to the other end of the operating cord, substantially as shown and described. 10th. In a store service apparatus, the combination, with a standard, a way, a carriage travelling thereon, of an arm projecting from the standard, a propelling lever pivoted to said arm and adapted to engage directly with the carriage and provided with an operating cord secured to the lever and passing over a pulley mounted in the standard, and a concussion spring interposed in the line of the operating cord between the end of the lever and pulley, all constructed, arranged and operating substantially as shown and described.

### No. 32,936. Road Scraper. (*Grattoir de chemin.*)

Hugh O'Hare, Mount Pleasant, Iowa, U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In a road-scraper, the combination of the truck, the reach pivoted thereto and provided at its rear end with a longitudinal series of perforations, a scraper provided centrally with a bolt to afford a pivotal connection with the reach, and rearwardly extending adjusting braces secured to the outer ends of the scraper and provided with bolt holes arranged to register with the holes of the longitudinal series at the rear end of the reach, substantially as described. 2nd. The combination, in a scraper, of a straight beam B provided with a seat D, a scraper C centrally pivoted to the beam, rearwardly extending arms E and F secured to the ends of the scraper and to the rear portion of the beam B, said arms being of different lengths so as to be secured to the beam, at different points, substantially as shown and for the purpose set forth.

### No. 32,937. Clevis. (*Fer d'attelage.*)

Emery M. McVicker, Madison, Wis., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. The combination, with the clevis provided with rigid arms having end apertures, and an independent pin, of the latch or arm pivoted on one of the said rigid arms of the clevis and adapted to be turned upon its pivot, so as to be brought into engagement with the clevis pin, and a spring bearing upon said pivoted latch or

arm and holding the same normally in a position to engage with the clevis pin, substantially as and for the purposes specified. 2nd. The combination, with the clevis body having rigid arms, one of which is cut away as described, and an independent pin, of a spring actuated latch or arm pivoted on said cut away portion and having the form thereof, whereby a flush surface without any projections is provided, substantially as and for the purposes specified. 3rd. The combination, in a clevis, of the body A with rigid arms provided with apertures *a*, one of said arms being cut away, as shown, at *a'*, and having projection A' arranged at one side of the aperture *c* and having a latch in the form of said cut away portion on which it is mounted and abutting normally against the projection A', substantially as and for the purposes specified. 4th. The combination, with the clevis pin, of the clevis body having rigid arms, one of which is cut away as described, a pivoted latch mounted on said cut away portion and having the form thereof, and a spring for actuating said latch, said spring being arranged entirely between the latch and the clevis body and wholly inclosed thereby, substantially as and for the purposes specified. 5th. The combination, with the independent clevis pin, of the clevis body A having rigid arms, one of which is provided with a pivot-post A' and a groove *a'*, the latch C having aperture *c* to receive the pivot-post and groove *a'*, and the spring D coiled around said post and having its ends arranged respectively in the grooves *a'* and *c'*, substantially as and for the purposes specified.

### No. 32,938. Show Case. (*Montre à marchandises.*)

William C. Rood, Quincy, Ill., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. A show case constructed substantially as herein shown and described, the same consisting of a main frame having a sloping glass front, in combination with an inner triangular frame pivoted at the angle near the base of the main frame and provided with supports for goods and adapted to swing back out of the main frame, substantially as and for the purposes set forth. 2nd. The main frame having triangular end pieces and sloping glass front, in combination with an inner triangular frame having a curved support provided with ledges to retain the goods, the inner frame being pivoted at the angle near the base of the main frame and adapted to be swung out from the main frame, substantially as and for the purpose set forth. 3rd. The main casing provided with a spring-arm *h*, rising from the base A, of the main frame, in combination with the inner triangular frame pivoted at the angle near the base of the main frame, so as to be adapted to swing out from said main frame against the spring-arm *h*, substantially as and for the purposes set forth. 4th. The main casing provided with a gong or bell, and the inner pivoted frame provided with a hammer arranged to cause the gong to be struck as the pivoted frame is opened, substantially as shown and described.

### No. 32,939. Collar and Cuff. (*Col et poignet.*)

Henry C. Milligan, South Orange, N. J., U. S., 27th November, 1889; 15 years.

*Claim.*—1st. As an improved article of manufacture, a collar or cuff composed of zylonite or other analogous water-proof material, provided with a permanent fastening comprising two parts or members, one of which is connected to one flap of the collar or cuff and is adapted to engage the other member which is on the other flap of the collar or cuff to lock the two together, substantially as described. 2nd. A collar of zylonite or analogous material provided with a permanent fastening comprising two parts or members, one of which is connected to one flap of the collar or cuff and is provided with a button-shaped extension *a'*, for engaging the button hole in a shirt, and the other member likewise connected to the other flap and adapted to engage the first member to fasten the collar about the person and to the shirt, substantially as described.

### No. 32,940. Tow Boat. (*Remorqueur.*)

Alexander McDougall, Duluth, Minn., U. S., 27th November, 1889; 15 years.

*Claim.*—1st. The hull for a tow boat with a central body nearly square in cross section, with vertical sides and rounded corners and with sharp ends, semi-cylindrical in the lines of the upper section, and with hollowed outlines in the lower section thereof, substantially as set forth. 2nd. In combination with the hull of a tow boat, hatchways arranged in series, sliding hatches composed of a single plate of metal and provided with water-tight packing, screw bolts to fasten said hatches upon the hatchways, and other screw bolts to raise said hatches, so that the same may be moved back and forth without injury to the packing.

### No. 32,941. Hair Dye and onic.

(*Teinture et tonique pour les cheveux.*)

Edward A. Vogt, Freidheim, Mo., U. S., 27th November, 1889; 5 years.

*Claim.*—A compound hair dye and invigorator, consisting of the fluid extracts of green or unripe walnuts and fresh burdock roots, mixed with glycerole of Spanish pepper, in about the proportions set forth.

### No. 32,942. Handle for Metallic Vessels.

(*Anse pour les vaisseaux métalliques.*)

William C. Leavitt, Norway, Mo., U. S., 27th November, 1889; 5 years.

*Claim.*—The handle for metallic vessels, herein described, consisting of a metal handle A, having a bead formed on its lower edge, and a wooden hand-piece B formed with a central longitudinal hole, and a slit leading from the said hole to the surface of the hand-piece to hold the bead and embrace the body of the metal, substantially as specified.



**No. 32,943. Neck Yoke Fastener.***(Ferrule de volée d'avant.)*

Thomas Andress, Pittsville, Wis., U. S., 27th November, 1889; 5 years.

*Claim.*—A neck yoke fastener, consisting of a socketed tip B, having a hook *b* with a tip *b'*, a lug *d*<sup>1</sup>, a guide lug *d*<sup>2</sup>, a latch *B*<sup>1</sup> pivoted to said lug *d*<sup>2</sup>, and a spring *B*<sup>1</sup>, substantially as set forth.**No. 32,944. Veneer Saw.***(Scie à feuille de placage.)*

Dietrich P. A. Mersing, Galatz, Roumania, 27th November, 1889; 5 years.

*Claim.*—In veneer saws, the teeth of which are M-shaped, the surfaces *a*, *b* and *a'*, *b'*, as well as *a*, *c* and *a'*, *c*, which form a sharp angle to one of the surfaces of the saw blade, and the points *a* and *a'* set in opposite directions, substantially as illustrated and described for the purposes set forth.**No. 32,945. Log Lifting and Turning Machine.** *(Machine à soulever et retourner les billots.)*

Flavel Simonson, Batesville, Arkansas, U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In a machine for turning and lifting logs, the combination, with an engine, a rock-shaft, an arm secured to the shaft, a hook pivoted to the free end of the arm, a pitman rod pivotally connecting the hook with the piston-rod of the engine, and guides *r* for regulating the direction of movement of the piston-rod, substantially as and for the purpose specified. 2nd. The combination, in a log-lifting and turning machine, of a log-lifter *c*, a rock-shaft, *e*, an eccentric *f* fastened on the shaft for raising the log-lifter, a straight arm *d* on the shaft, and the engine *h* connected with the arm, substantially as and for the purpose specified.**No. 32,946. Paper Cutter.** *(Tranche-papier.)*

The American Roll Paper Company, (assignee of Leo Ehrlich), St. Louis, Mo., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In a paper-cutter, the arms having varied inclinations, in combination with a roller and knife, substantially as and for the purpose set forth. 2nd. In a paper-cutter, the end pieces provided with arms having varied inclinations at their upper faces, in combination with a knife and a roller having pins or arbors adapted to bear upon the arms substantially as and for the purpose set forth. 3rd. In a paper-cutter, the combination of the end pieces provided with arms having varied inclinations on their upper faces, in combination with the roller and guard-rails, substantially as and for the purpose set forth. 4th. In a paper-cutter, the end pieces having substantially horizontal arms inclined on their upper faces, in combination with a roller supported on said arms, and a knife secured to said arms, substantially as and for the purpose set forth. 5th. In a paper-cutter, the combination of the end pieces provided with arms, knife secured to the outer ends of the arms, guard-rails having bends *l* and located above and in line with the arms, and roller having pins or arbors bearing on the arms, substantially as and for the purpose set forth. 6th. In a paper-cutter, in combination with a knife and a roller, inclined ways upon which said roller is supported, the inclinations of said ways being varied, for the purpose set forth. 7th. In a paper-cutter, the combination, with the roller and the supports therefor, of the pin *l* secured to one support, and the screw *l* secured to the other support, the knife *l* formed with an orifice *l*, and a longitudinal slot leading thereto at one end, for securing the knife to the pin, and a longitudinal opening *l* at the other end for receiving the screw, substantially as described.**No. 32,947. Paper Cutter.** *(Tranche-papier.)*

The American Roll Paper Company, (assignee of Leo Ehrlich), St. Louis, Mo., U. S., 27th November, 1889; 5 years.

*Claim.*—1st. In a paper-cutter, the combination, of the roller support for the roller, arms pivoted to the support, knife, and springs holding the arms in an inclined position, substantially as and for the purpose set forth. 2nd. In a paper-cutter, the combination of the base, ends secured to the base, extensions on the ends, knife secured to the extensions, arms pivoted to the extensions, springs secured to the ends and supporting the arms in an inclined position, and a roller resting on the arms, substantially as and for the purpose set forth. 3rd. In a paper-cutter, the combination of the base, ends secured to the base, extensions on the ends, knife secured to the extensions, arms pivoted to the extensions and having hooks on their outer ends, and projections *l* on the arms, springs secured to the ends and sustaining the arms in an inclined position, and a roller bearing on the arms, substantially as and for the purpose set forth.**No. 32,948. Wood Screw.** *(Vis à bois.)*

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U. S., 27th November, 1889; 15 years.

*Claim.*—1st. As a new article of manufacture, a wood screw, having the point portion thereof provided with a sharpened unthreaded part for entering the wood and centering itself therein, and having the other part of the point portion provided with a thread gradually increasing in width and depth until it forms a part of the normal thread at the base of the point, substantially as hereinbefore described. 2nd. A wood screw having a sharpened cone-shape point portion *p*, provided with a diminishing thread *t*, and a plain or unthreaded part *e* extending from the termination of said thread to the end *e* of the point, substantially as shown and for the purpose hereinbefore described.**No. 32,949. Manufacture of Horse Shoe Nails.** *(Fabrication du clou à cheval.)*

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U. S., 27th November, 1889; 15 years.

*Claim.*—1st. The method herein described of making horse shoe nails from a wire or bar of substantially the size and shape of the body or shank of the nail near the head, by upsetting or forging a head upon an end of the wire in a die of the size and shape required therefor, and by shearing the sides of the opposite end to provide for the tapering point, and by rolling the shank to flatten, elongate and bevel its end to produce the form required and harden the metal. 2nd. As a new article of manufacture, a horseshoe nail formed cold from a wire or bar of substantially the size and shape of the body or shank of the nail near the head, having a head forged or upset and compressed upon an end of the wire in a die of the size and shape required therefor and having the edges of the opposite end sheared, and the sides rolled to flatten, elongate, and bevel the shank to produce the form required and harden the metal.**No. 32,950. Gas Generator.** *(Générateur à gaz.)*

DeWitt Stearns, Des Moines, Iowa, U. S., 23th November, 1889; 5 years.

*Claim.*—1st. In an apparatus for the production of gas from liquid hydro-carbon, the combination of a series of retorts, each composed of connected pipes arranged in pyramidal form and alternately reversed or inverted, substantially as and for the purpose set forth. 2nd. In an apparatus for the production of gas from liquid hydro-carbons, the combination of a series of retorts, each composed of connected pipes arranged in pyramidal form, with steam superheaters placed above the retorts and connected therewith, substantially as and for the purposes set forth. 3rd. A gas burner, having a chamber, the area of a vertical plane of which will gradually reduce by vertical diminution from the lower edge thereof, as such plane is carried from the front toward the rear of such chamber, in combination with a perforated top, covering substantially the whole of such chamber, substantially as and for the purposes set forth. 4th. A gas burner, composed of a rectangular box of refractory material, having an inlet at one end thereof, a chamber, the floor of which inclines upwardly from the inlet side to the rear wall in two planes, the one adjacent to the inlet being at a greater angle to the horizontal plane than the other, and a horizontal top of refractory material provided with outlet orifices at intervals over its entire surface, substantially as set forth. 5th. The combination, with flat tiles of refractory material, provided with a series of parallel slots bevelled at the upper edges, of semi-cylindrical burner nipples of refractory material, having their lower edges tapered to correspond with the bevelled edges of the slots in the tiles, and having transverse slots formed through their rounded parts, substantially as set forth. 6th. In an apparatus for the production of gas from liquid hydro-carbons, the combination with a horizontal burner, having gas orifices through its upper surface, of a fire grate or grates arranged at the side or sides thereof, substantially as and for the purposes set forth. 7th. A mixing chamber for gas-burning furnaces, consisting of a gas supplying pipe extending into a larger pipe to or beyond inlets in the larger pipe for the ingress of air, which inlets are provided with means for varying their size, substantially as set forth. 8th. A mixing chamber for gas-burning furnaces, consisting of a gas supplying pipe extending into a larger pipe to or beyond inlets in the larger pipe for the ingress of air, which inlets are provided with means for varying their size, in combination with the matters set forth and claimed in the third claim hereof, substantially as set forth. 9th. A mixing chamber for gas-burning furnaces, consisting of a gas-supplying pipe extending into a larger pipe to or beyond inlets in the larger pipe for the ingress of air, which inlets are provided with means for varying their size, in combination with the matters specified and claimed in the fourth claim hereof, substantially as set forth. 10th. In a tubular retort, in combination, a series of parallel pipes provided with T-pieces on their front ends, and connecting nipples between each pair of T-pieces, and plugs at the ends of the T-pieces, by the removal of which plugs ready access may be had to the interior of the pipes without disturbing the connecting joints, substantially as set forth. 11th. In combination, a series of retorts, *a*, *b*, *c*, arranged in the same furnace and heated by the same fire, an air-mixing chamber *f*, a burner *d*, *d'*, *d''* and pipe connection *e* between one of said retorts and said air-mixing chamber, all substantially as shown and described. 12th. In combination, a series of retorts *a*, *b*, *c*, arranged in the same furnace and heated by the same fire, an air-mixing chamber, consisting of a gas-supplying pipe extending into a larger pipe to or beyond inlets in the larger pipe for the ingress of air, which inlets are provided with means for varying their size, a burner, constructed as specified and claimed in the third claim hereof, and pipe connection between one of said retorts and said air-mixing chamber, all substantially as shown and described. 13th. In combination, a series of retorts arranged in the same furnace and heated by the same fire, an air-mixing chamber, constructed as specified and claimed in the seventh claim hereof, a burner, constructed as specified and claimed in the fourth claim hereof, and pipe connection between one of said retorts and said air mixing chamber, all substantially as set forth.**No. 32,951. Car Axle Lubricator.***(Boite à graisse.)*

Charles A. Howard, Pontiac, Mich., U. S., 28th November, 1889; 5 years.

*Claim.*—1st. A car axle lubricator, consisting of a single grooved cylinder, supported by a yielding spring frame and adapted to be constantly held in rolling contact with the axle and in combination therewith, a spring impelled collar at the back of the journal box for preventing waste of the lubricant, substantially as described. 2nd. In a car axle lubricator, the combination, with a single spring impelled lubricating roller, of a wiper, consisting of the jaws *l* pivoted at their bottoms, and provided with the tips *h* of leather or other suitable material at their tops, and held in close and yielding con-

tact with the axle by the spring arms *g*, substantially as described. 3rd. A wiper for car axles, consisting of two curved jaws *H* pivoted at their bottoms and supported adjacent to the axle by the yielding spring frame *G*, said jaws provided with the slots *h*<sup>111</sup>, substantially as described.

### No. 32,952. Steam Boiler and Furnace.

(*Chaudière à vapeur et foyer.*)

William S. Post, Boston, and Howard D. Sawyer, West Boylston, Mass., U.S., 23th November, 1889; 5 years.

*Claim*.—1st. In a downdraft steam-generator, the fuel chamber *C* closed tightly at top and provided with a feed-door, and draft-inlet above the grate, and the combustion chamber *D* below the grate extending beneath the water-back with the outlet for the calorific current through the flues *J*, in combination with the water-back *H* traversed by said flues, and with the water-grate *K* having a front water-connection and connected with said water-back, substantially as set forth. 2nd. In a steam-generator, the shell *A*, firepot *B*, and deflecting water-back *H* having vertical flues *J* traversing it, in combination with an inclined water-grate *K*, and a series of water-circulating pipes *L* below said grate adapted to supply water thereto, for the purpose set forth. 3rd. In a steam generator, the fire pot *B* having the oblique water-grate *K* separating the fuel-chamber from the combustion chamber, in combination with the independent water box *M* and the water circulating-pipes *L* through which water is supplied to said grate, substantially as set forth. 4th. In a steam-generator, the combination of the water-back or water leg, and independent water-box *M* with the water grate *K*, and oblique circulating-pipes *L* arranged to act as inclined supports for the water-

box, said tubular grate and pipes both connecting with the water-back or leg and water-box to complete a direct circulation, substantially as set forth.

### No. 32,953. Head Rest. (*Appui-tête.*)

John B. Anderson and John H. Hope, Hamilton, Ont., 23th November, 1889; 5 years.

*Claim*.—1st. As an improved article of manufacture, a head rest comprising opposed hinged side pieces, the two sections whereof are connected by a strip of fabric or equivalent material, and a spring clamp attached to the upper sections of the side pieces and curved downward over the lower sections, substantially as shown and described. 2nd. As an improved article of manufacture, a head rest comprising parallel side bars, each side bar made in two hinged sections, a strip of fabric or equivalent material uniting the opposed sections of each of the side bars, a bracket block secured to the rear of the upper side bar sections, and a spring clamp detachably held in each of the said bracket blocks extending below the hinge connection of the side sections, substantially as shown and described. 3rd. In a head-rest, the combination, with side bars made in two hinged sections, and strips of fabric or similar material uniting the opposed side bars of the upper and lower sections, and a bracket block attached to the rear face of each of the upper side bar sections, of spring clamps having one end removably held in each of the bracket blocks, and the other end curved downward below the hinge connection of the side bars, and a brace bar detachably secured at its extremities to the said bracket blocks, all combined for operation substantially as shown and described.



*CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO  
THE FOLLOWING PATENTS.*

1613. J. CARRUTHERS (assignee), 2nd 5 years of No. 20,643, from the 28th day of November, 1889. Improvements in Devices for Suspending Machinery and obtaining Rotating Centres, 2nd November, 1889.
1614. R. H. ELLIOTT, and W. F. MOULTON, 2nd 5 years of No. 20,495, from the 3rd day of November, 1889. Improvements on Vehicle Hubs, 2nd November, 1889.
- 1614½. R. SCHOFIELD, G. DAVIDSON and T. PENMAN, 2nd 5 years of No. 20,509, from the 4th day of November, 1889. Improvements in Knitting Machines, 4th November, 1889.
1615. AMERICAN ELECTRIC ARMS AND AMMUNITION CO. 2nd 5 years of No. 20,574, from the 19th day of November, 1889. Improvements in Cartridges, 5th November, 1889.
1616. AMERICAN ELECTRIC ARMS AND AMMUNITION CO. 2nd 5 years of No. 20,575, from the 13th day of November, 1889. Improvements in Electric Guns, 5th November, 1889.
1617. DAVY EXCELSIOR IRON FENCE CO. (assignees), 2nd 5 years of No. 20,520, from the 7th day of November, 1889. Improvements in Fence Posts, 5th November, 1889.
1618. A. McDOUGALL, 2nd 5 years of No. 16,808, from the 5th day of May, 1889. Improvements in Tow Boats, 5th November, 1889.
1619. GUELPH CARRIAGE GOODS CO. (assignees), 2nd 5 years of No. 10,710, from the 29th day of November, 1889. Improvements in the Process and Apparatus for Cooling Oil used in the Tempering of Steel, 8th November, 1889.
1620. W. J. SUNNEY, 2nd 5 years of No. 20,704, from the 9th day of December, 1889. Improvements in Horse Collars, 8th November, 1889.
1621. J. ROURK, 2nd 5 years of No. 16,625, from the eighth day of November, 1889. Improvements in the Method of Working Switches and Signals at a Distance, 8th November, 1889.
1622. G. BOIVIN, 2nd 5 ans du No. 20,607, du 29eme Jour de Novembre, 1889. Pour de nouvelles et utiles ameliorations dans la fabrication des chausures ouvertes surle devant, 8eme jour de Novembre, 1889.
1623. SERVICE RAILROAD TIE PLATE CO. (assignees) 2nd 5 years of No. 20,566, from the 12th day of November, 1889. Improvements on Wear Plates for Railroad Ties, 9th November 1889.
1624. G. SINES and A. BRIDGEMAN, 2nd 5 years of No. 20,614, from the 21st November, 1889. Improvements on Nailing Machines employed in the Manufacture of Packing Cases and Boxes, 9th November, 1889.
1625. W. C. LYMAN, 2nd 5 years of No. 20,554, from the 12th day of November, 1889. Improvements on Condensing Heads for the Exhaust Pipe of non-Condensing Engines, 9th November, 1889.
1626. G. C. WETHERBRE (assignee), 2nd 5 years of No. 20,560, from the 12th day of November, 1889. Improvements in Bottles or Cans for Ink and other Liquids, 11th November, 1889.
1627. BOYNTON FURNACE CO., 2nd 5 years of No. 20,934, from the 26th day of January, 1890. Improvements in Hot Air Furnaces, 11th November, 1889.
1628. A. L. IDE, 2nd 5 years of No. 20,939, from the 27th day of January, 1890. Improvements in Steam Engine Governors, 11th November, 1889.
1629. J. J. LAPPIN, 2nd 5 years of No. 20,658, from the 29th day of November, 1889. Improvements in Brake Shoes, 12th November, 1889.
1630. R. P. TREFRY, 2nd 5 years of No. 21,376, from the 20th day of November, 1889. Improvements in the mode of Hoisting, Securing and Discharging an Anchor to and from a Vessel's Bow (being a re-issue of Patent No. 20,605, granted to the said R. P. Trefry), 13th November, 1889.
1631. A. WARNER, 2nd 5 years of No. 10,656, from the 17th day of November, 1889. Improvement in the Preparation of Corned Pork, Hams and Shoulders, 14th November, 1889.
1632. R. F. DAVIS, 2nd 5 years of No. 10,686, from the 21st day of November, 1889. Improvements in Boats, 14th November, 1889.
1633. J. A. MATHIEU, 2nd 5 years of No. 10,663, from the 21st day of November, 1889. Improvements in Apparatus for Distilling Wood and Separating the Products of Distillation, 15th November, 1889.
1634. M. O. SMITH, 2nd 5 years of No. 20,618, from the 25th day of November, 1889. Improvements of Drag Saws, 19th November, 1889.
1635. W. WILMINGTON, 2nd 5 years of No. 20,617, from the 25th day of November, 1889. Improvements in Method of Casting Car Wheels, 20th November, 1889.
1636. C. P. GÉLINAS, 2nd 5 years of No. 20,691, from the 6th day of December, 1889. Improvements in the Manufacture of Wooden Shovels, 20th November, 1889.
1637. J. F. PEASE FURNACE CO., (assignee), 2nd 5 years of No. 20,662, from the 29th day of November, 1889. Improvements in Steam Heaters, 21st November, 1889.
1638. G. A. & E. ASHWORTH, 2nd 5 years of No. 20,626, from the 25th day of November, 1889. Improvements in Carding Engine Cylinders, 22nd November, 1889.
1639. S. TOTMAN, 2nd 5 years of No. 20,754, from the 17th day of December, 1889. Improvements in Machines for Gumming and Sharpening Circular Saws, 22nd November, 1889.
1640. DE LAVAL SEPARATOR CO., (assignee), 2nd 5 years of No. 20,790, from the 9th day of December, 1889. Improvements in Centrifugal Creamers, 28th November, 1889.
1641. C. HAGGENMACHER, 2nd 5 years of No. 32,868, from the 19th day of November, 1889. Improvements in Apparatus for Sifting and Sorting Meal, Flour, and the like, 28th November, 1889.
1642. B. C. MOLLOY, 2nd 5 years of No. 20,795, from the 26th day of December, 1889. Improvements in Amalgamating Gold and Silver Metals and in the Apparatus employed therein, 30th November, 1889.
1643. W. B. & T. LARKIN, 2nd 5 years of No. 20,681, from the 4th day of December, 1889. Improvements on Furnaces for the Manufacture of Sulphate of Soda or Hydrochloric Acid, or for Roasting or Calcining this or analogous purposes, 30th November, 1889.
1644. HOWARD FURNACE CO., (assignee), 2nd 5 years of No. 28,242, from th 27th day of December, 1889. Improvements in Steam Heaters and Hot Air Furnaces combined, 30th November, 1889.

## NOVEMBER LIST OF TRADE MARKS.

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3578. CHRISTOPHER G. HOBSON, of Vancouver, B. C. Canned Salmon, 2nd November, 1889.
3579. LILLIAN VAN NORMAN, of Palenville, Green Co., N.Y., U.S.A. Food for all kinds of Stock, Poultry, Dogs, Rabbits, Birds, Geese, Turkeys, etc., also for Human beings, 2nd November, 1889.
3580. MICHEL LEFEBVRE ET CIE., of Montreal, Que. All kinds of Vegetables and Fruits preserved in the shape of Pickles, Jams or Jellies, 2nd November, 1889.
3581. THE AMERICAN MACHINE COMPANY, of Philadelphia, Pennsylvania, U.S.A. Ice Cream Freezers, 2nd November, 1889.
3582. JOSEPH MIZAEI FORTIER, of Montreal, Que. Cigars, 2nd November, 1889.
3583. THE KINNEY TOBACCO COMPANY, of New York, N.Y., U.S., Manufactured Tobacco, and particularly Smoking Tobacco and Cigarettes, 2nd November, 1889.
3584. ALLEN GARDINER INGALLS, es-qual, of Ottawa, Ont. Money Drawer and Cash Account Recorder, 4th November, 1889.
3585. THE UNITED ASBESTOS CO. (L'd.), of 161 Queen Victoria St., London, England. Soap, 8th November 1889.
3586. JOHN T. ROBISON, of Montague Bridge, King's County, P.E.I. Medicine for Rheumatism, 8th November, 1889.
3587. } TOMBYLL AND MYERS, of Montreal, Que.,  
3588. } Cigars, 8th November, 1889.
3589. MILTON H. BRISETTE, of Montreal, Que. Medicine for Tooth Ache, 12th November, 1889.
3590. WHALEY, ROYCE & CO., of Toronto, Ont. Band Instruments, 13th November 1889.
3592. E. R. DURKEE & CO., of New York, N. Y. U. S. Condiments (table sauce, curry powder, salpicant, flavoring extracts, ground spices, ground mustard, poultry seasoning and celery salt), 14th November, 1889.
3593. E. R. DURKEE & CO., of New York, N. Y. U. S. Salad Dressing and Cold Meat Sauce, 14th November, 1889.
3594. E. R. DURKEE & CO., of New York, N. Y., U.S. Food Products (tapioca, sago, barley, glutina, corn starch, hominy and preparations of rice, oats and wheat), 14th November, 1889.
3595. HIRAM WALKER & SONS, of Walkerville, Essex Co., Ont., Whisky, 16th November, 1889.
3596. ORR, HARVEY & CO., of Toronto, Ont. Boots and Shoes, 21st November, 1889.
3597. JEYES SANITARY COMPOUNDS COMPANY, LIMITED, of No. 43 Cannon Street, London, England. Medical and other Sanitary and Veterinary Preparations, 22nd November, 1889.
3598. BENJAMIN FRANKLIN BELL and ALEXANDER BREMNER, of Tilsonburg, Oxford Co., Ont. Lace Leather, 26th November, 1889.
3599. ROUSSE-BERTRAND FILS, of Grasse, Department of Alpes Maritimes, France, Perfumes and Perfumed Toilet Articles, 28th November, 1889.
3600. PHILIPP HERMANN FAY, of Frankfort-on-the-Main, German Empire. Pastilles, 29th November, 1889.
3601. PETERS, BARTSCH & COMPANY, of Derwent Chambers, Derby, Derby Co., United Kingdom of Great Britain and Ireland. Mixture for Preserving Timber and other Materials, 29th November, 1889.

## COPYRIGHTS.

Entered during the month of November at the Department of Agriculture—Copyright and  
Trade Mark Branch.

5103. IN THE THICK OF IT. which is now being preliminarily published in separate articles in "The Dominion Illustrated," in Montreal, Que. (temporary copyright). Sarah Anne Curzon, Toronto, Ont., 4th November, 1889.
5104. MATRON OR MAID, by Mrs. Edward Kennard (book).
5105. TOILERS OF BABYLON, by B. L. Farjeon (book).  
The National Publishing Co. Toronto, Ont., 5th November, 1889.
5106. THE QUOTATION PUZZLE, or HOW TO READ EACH OTHER'S THOUGHTS. James Calder, Cornwall, Ont., 5th November, 1889.
5107. BELL TELEPHONE COMPANY OF CANADA, EASTERN EXCHANGE, SUBSCRIBER'S DIRECTORY, ONTARIO DEPARTMENT, NOVEMBER, 1889. The Bell Telephone Company of Canada, Montreal, Que., 6th November, 1889.
5108. ACROSS HER PATH. }  
5109. WRONGS RIGHTED. } by Annie S. Swan.  
Wm. Briggs, Toronto, Ont., 8th November, 1889.
5110. MOUNT EDEN. A Romance, by Florence Marryat.
5111. EARTH BORN I by Spirito Gentil.  
John Lovell & Son, Montreal, Que., 8th November, 1889.
5112. AU ROYAUME DU SAGUENAY, VOYAGE DU PAYS DE TADOUSSAC, par J. Edmond Roy, Levis, Que., 8 Novembre, 1889.
5113. JACK'S WEDDING MORN. Song. Words by Clifton Bingham. Music by F. Boscovitz. Chappell & Co., London, England, 9th November, 1889.
5114. ALLAN'S WIFE, by H. Rider Haggard (book). Wm. Bryoe, Toronto, Ont., 11th November, 1889.
5115. NADJY, by Alfred Murray (libretto). The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 14th November, 1889.
5116. THE GATES OF EDEN, by Annie S. Swan (book). Wm. Briggs, Toronto, Ont., 15th November, 1889.
5117. MISTAKEN and MARION FORSYTH, by Annie S. Swan (book). Wm. Briggs, Toronto, Ont., 15th November, 1889.
5118. BRIAR AND PALM, by Annie S. Swan (book). Wm. Briggs, Toronto, Ont., 15th November, 1889.
5119. THE SAILOR'S DANCE. Song. Words and Music by J. L. Molloy. The Anglo-Canadian Music Publishers' Association, (L'd.) London, England, 15th November, 1889.
5120. TORCADOR. Waltz, by Popplewell Royle. The Anglo-Canadian Music Publishers' Association (L'd), London, England, 15th November, 1889.
5121. THE CANADIAN HYMNAL. A Collection of Hymns and Music for Sunday Schools and Social Worship. Wm. Briggs, Toronto, Ont., 16th November, 1889.
5122. THE KIRMESS. Lawn Tennis Dance and Waltz Combined. Prof. John F. Davis, Toronto, Ont., 18th November, 1889.
5123. HISTORY OF CANADA, Vol. III. (1726-1756). With Maps, by William Kingsford, LL.D., Ottawa, Ont., 21st November, 1889.
5124. EVANGEL OF SONG, by J. H. Hathaway, Brantford, Ont., 22nd November, 1889.
5125. THE EQUITABLE PROVIDENT SOCIETY OF ONTARIO (pamphlet). Henry Betts Taylor & Lyman Theophilus Barclay, Whitby, Ont., 22nd November, 1889.
5126. THE CANADIAN MILITIA (lithograph). Charles W. Taylor, Toronto, Ont., 23rd November, 1889.
5127. SHEILA, by Annie S. Swan. Wm. Briggs, Toronto, Ont., 23rd November, 1889.
5128. ST. VEDA'S, or The Pearl of Orr's Haven, by Annie S. Swan. Wm. Briggs, Toronto, Ont., 23rd November, 1889.
5129. PENSÉES SUR L'EUCARISTIE ou Comparaisons entre la vie mortelle de Jesus Christ et sa vie dans l'Eucharistie actuellement en voie de publication par articles dans le journal "L'Evangeline" publié à Digby, Nouvelle Ecosse. François Cinq Mars, Pretre, St. Alexis de Matapediac, Que., 25 Novembre, 1889.
5130. THE CANADIAN HYMNAL. A Collection of Hymns for Sunday Schools and Social Worship. Words Only Edition. Wm. Briggs, Toronto, Ont., 26th November, 1889.
5131. THE PANTRY REGISTER (print). Imrie & Graham, Toronto, Ont., 26th November, 1889.



5132. THE NOBLE THIRTEEN, or Historical Group, Members House of Commons, who voted March 28th, 1889, for Equal Rights and Supremacy of Her Majesty Queen Victoria. Wm. Lough, the younger, Eddyville, Hull, Que., 26th November, 1889.
5133. LE PREMIER LIVRE DE LECTURE—FIRST READER. Part I. }  
5134. LE PREMIER LIVRE DE LECTURE—FIRST READER. Part II. }  
5135. LE SECOND LIVRE DE LECTURE—SECOND READER. }  
5136. LE TROISIEME LIVRE DE LECTURE—THIRD READER. }  
The Copp, Clark Co., (L'd.), Toronto, Ont., 27th November, 1889.
5137. THE MANITOBA CHRISTMAS CARD, 1889 (photograph and poem). Robert Randolph Bruce, Brandon, Man., 23th November, 1889.
5138. A LIFE'S REMORSE, by "The Duchess" (book). The National Publishing Co., Toronto, Ont., 29th November, 1889.
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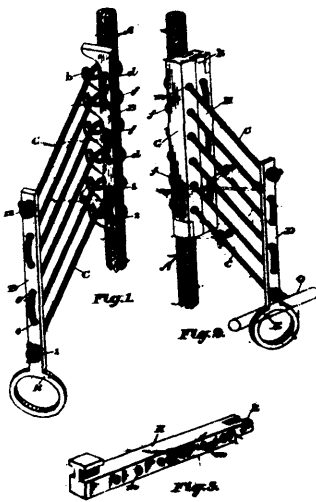
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CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

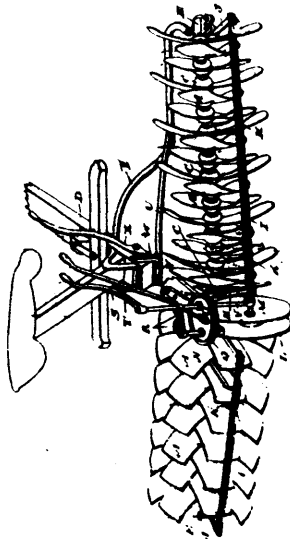
Vol. XVII.

NOVEMBER, 1889.

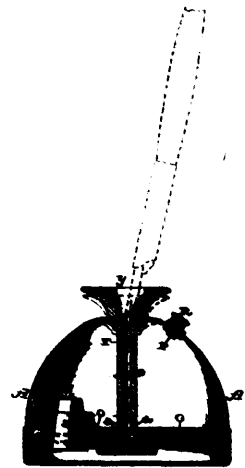
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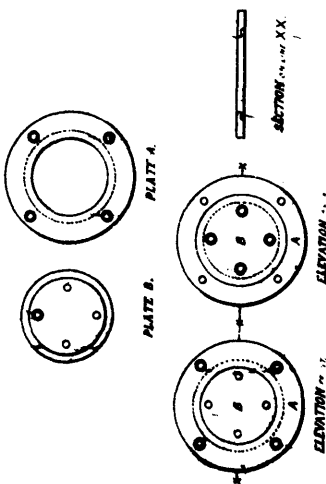
32660 Evans' Rope Grip or Selvage Strop.



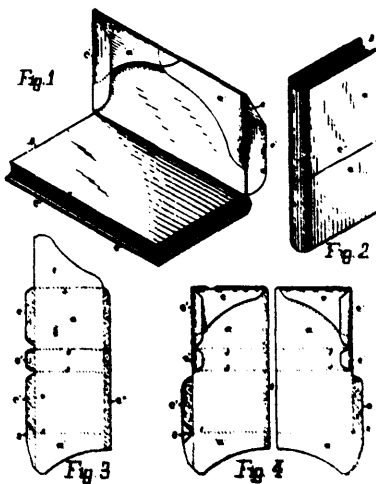
32661 Drader's Rotary Plough.



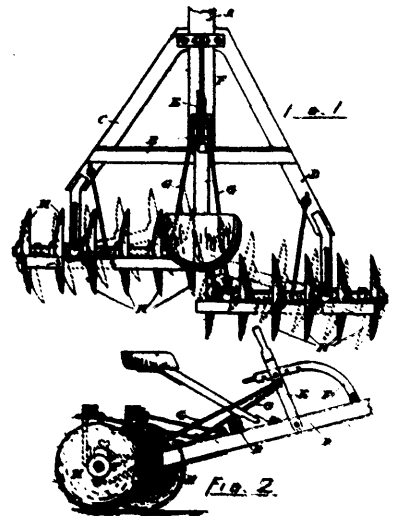
32662 Larkin's Ink Stand.



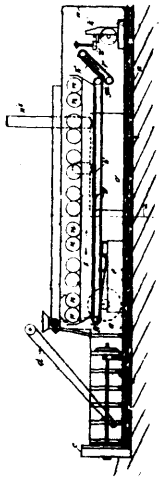
32663 Elliott's Rotary Heel Motor.



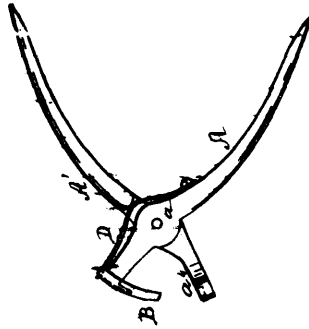
32664 Caryl's Sheath for Book Covers.



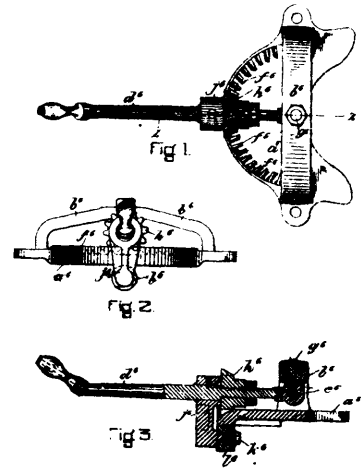
32665 Corbin's Disk Harrow.



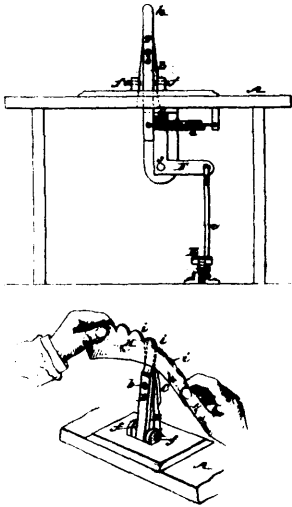
32666 Alkman's Machinery for Manufacturing Peat Fuel.



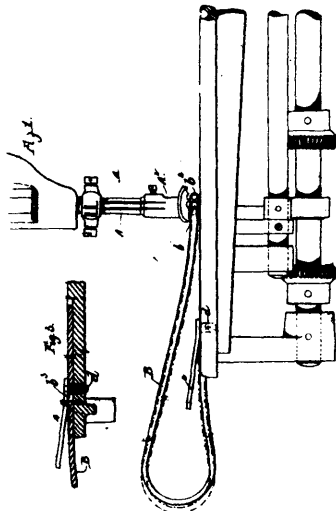
32667 Johnson & White's Stapling Implement.



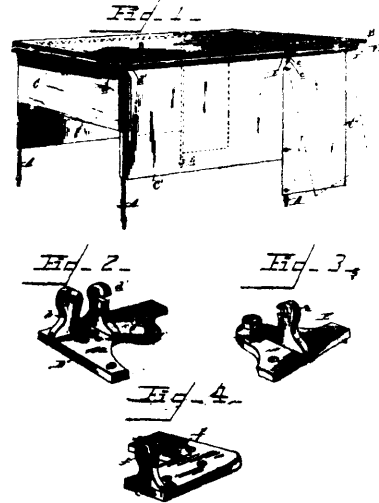
32668 Wood's implement for Fluting boot or Shoe Uppers.



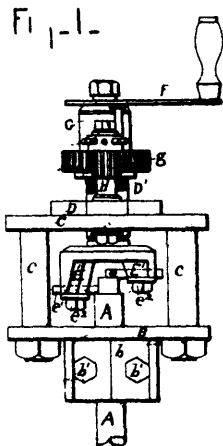
32669 Hall's Scallop Turners.



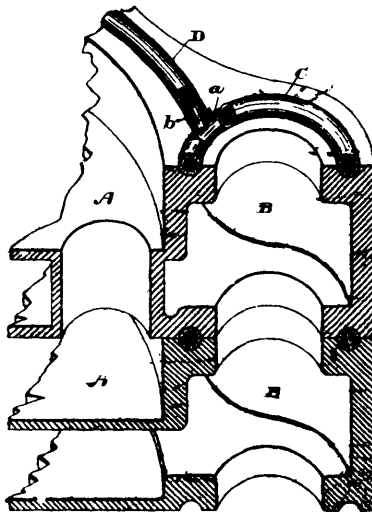
32670 Rossiter's Attachment for Sewing Machines.



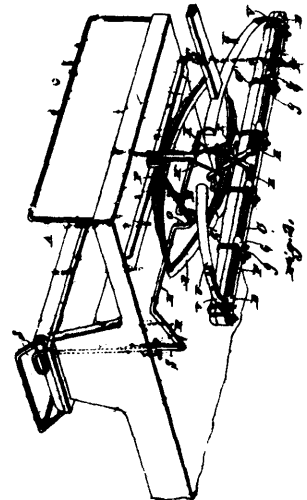
32671 Merrell's Carriage Top



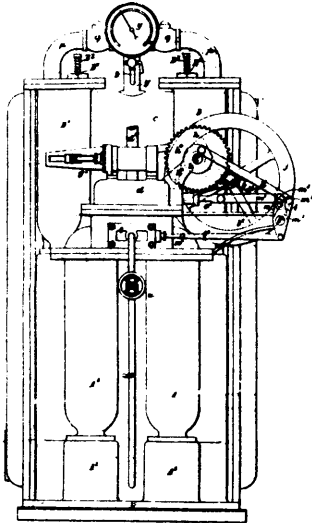
32672 Beardley's Axle Cutter.



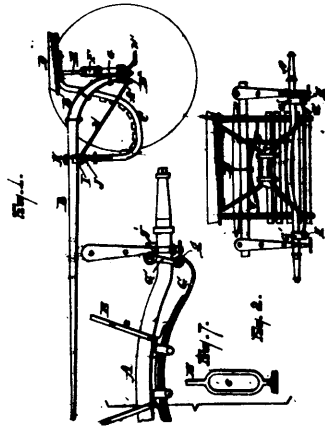
32673 Levey's Joint.



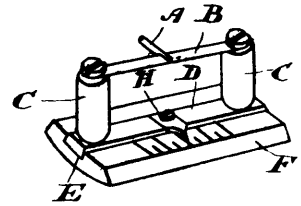
32674 McCormick's Horse Detacher.



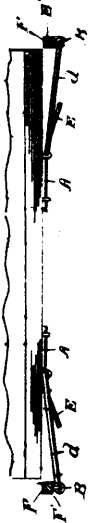
32675 Clarke's Machine for Compressing Air, etc.



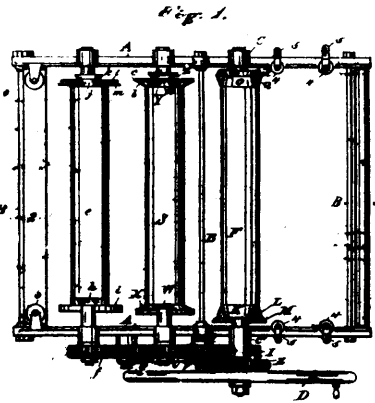
32676 Hill's Road Cart.



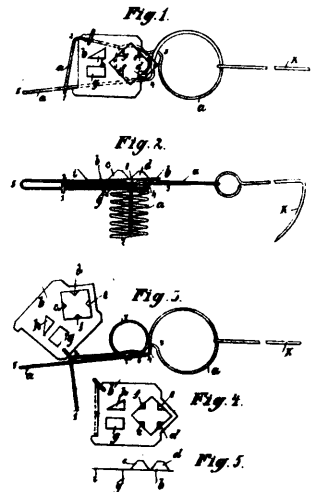
32677 Cochran & Bond's Foresight for Rifles, etc.



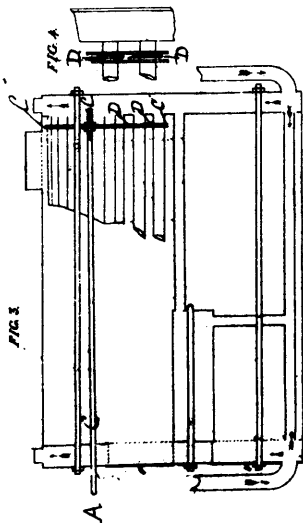
32678 Powers' Vehicle Spring.



32679 Patrick's Edge Turner.



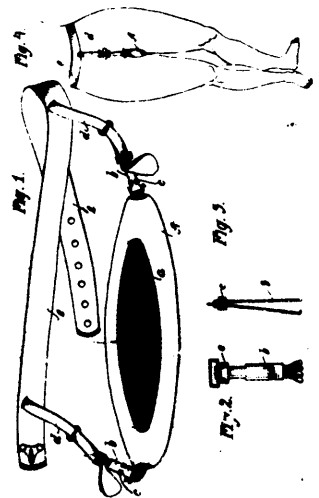
32680 Rippke's Field Mouse Trap.



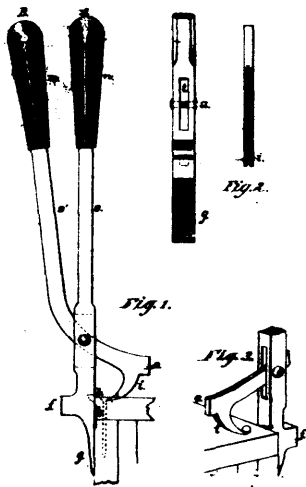
32681 Strachan's Tube Cleaner.



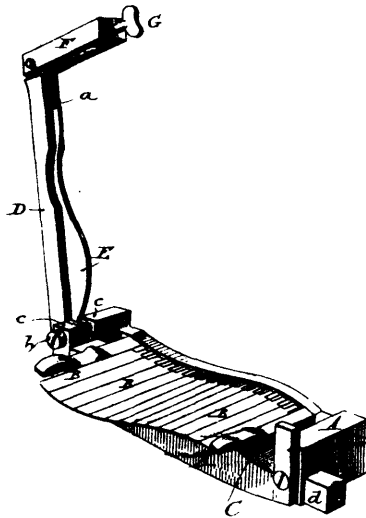
32682 Dickson's Apparatus for the Manufacture of Peat Fuel.



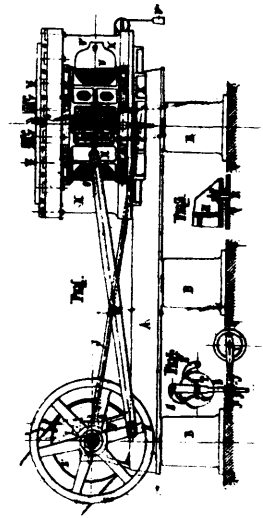
32683 Horig's Sucking Cushion.



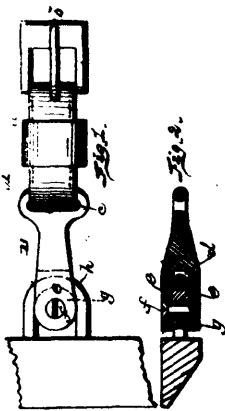
32684 Hawkins' Nail Extractor and Box Opener.



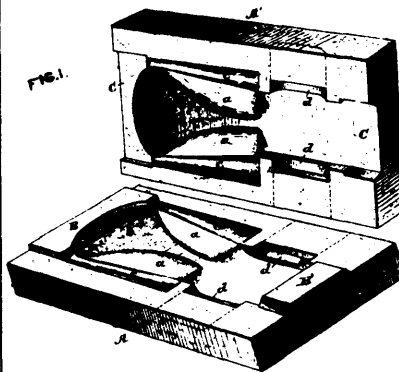
32685 Gray's Lasting Machine.



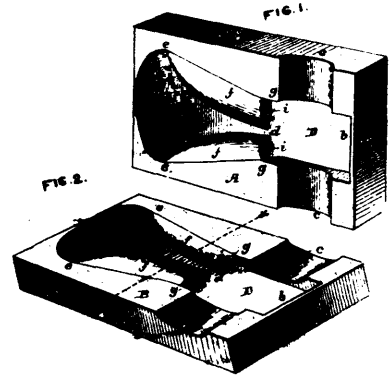
32686 Arbey's Machine a faire les copeaux ou paille de bois, etc.



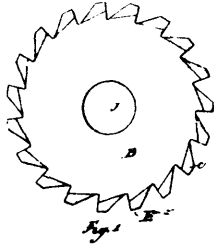
32687 Russel's Hame Tug.



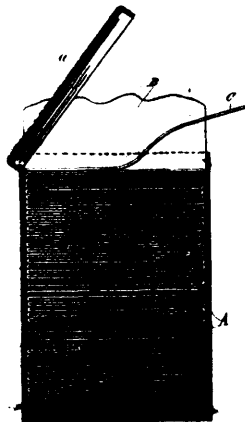
32688 Kelly's Die for Making Axes.



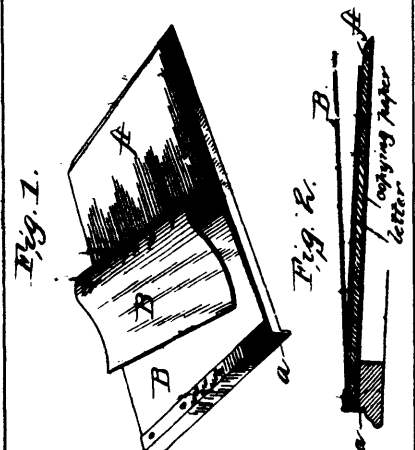
32689 Kelly's Die for Making Axes.



32690 Paquette's Matting Hammer.

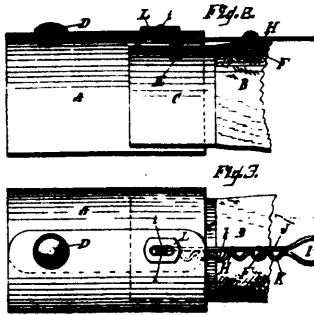


32691 Wood's Packing Antiseptic Testile Surgical Dressing.

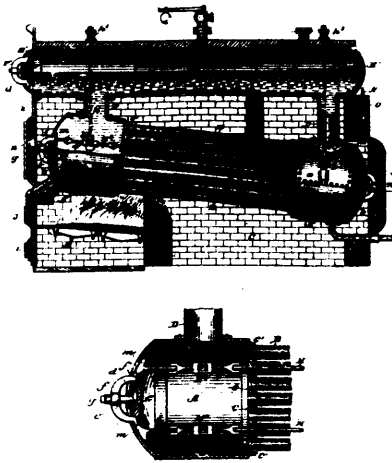


32692 Thum's Press Copying Devices.

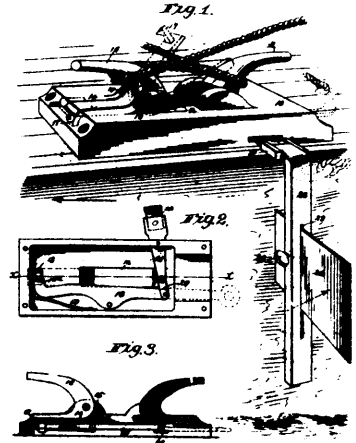




32693 Clouse's Cuff Holders.

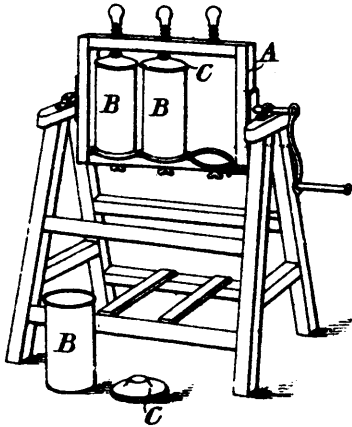


32694 Wood's Water Tube Boiler.

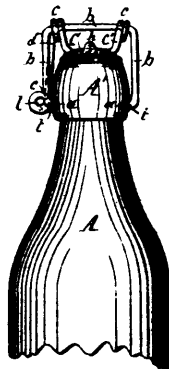


32695 Foran's Cleat.

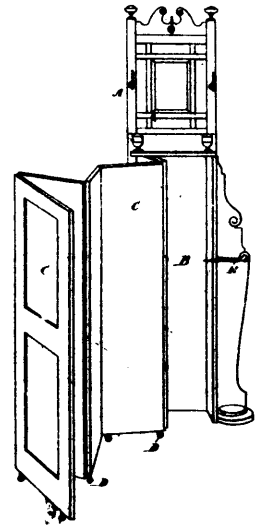
FIG. 1.



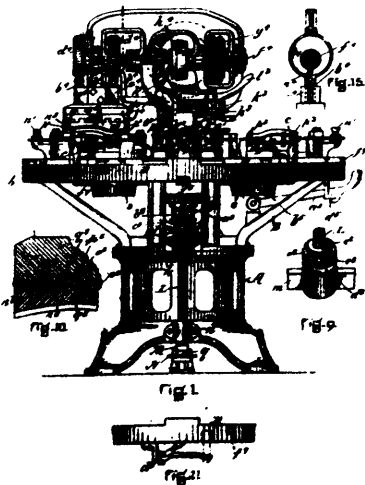
32696 Wells' Churn.



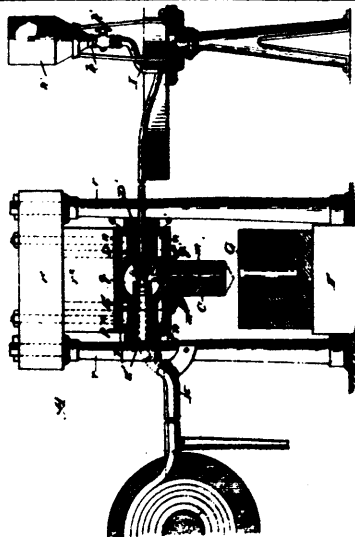
32697 Christman's Bottle Stopper.



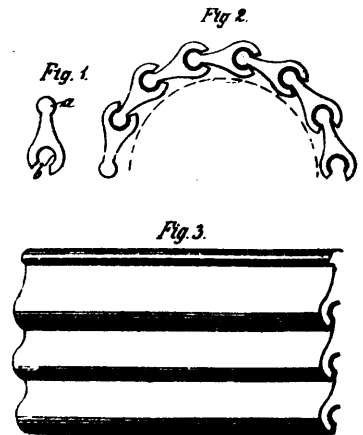
32698 Darlington's Hat and Umbrella Stand, etc.



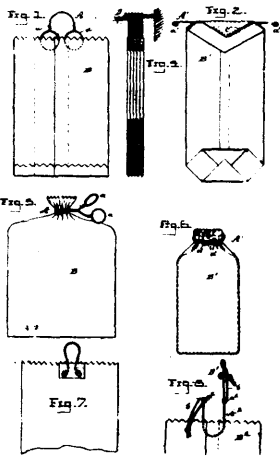
32699 Wood's Lasting and Sole Laying Machine.



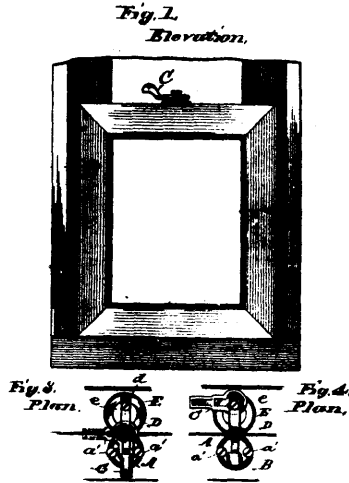
32700 Cobb's Manufacture of Metal Coated Tubing.



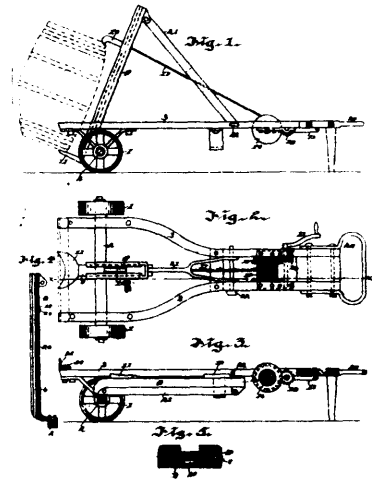
32701 Bockel & Lochmann's Roll Shutter List.



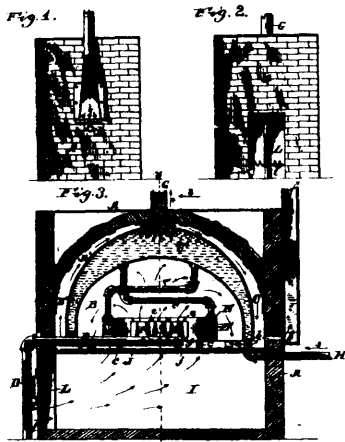
32702 Blincoe's Bag Holder and Fastener.



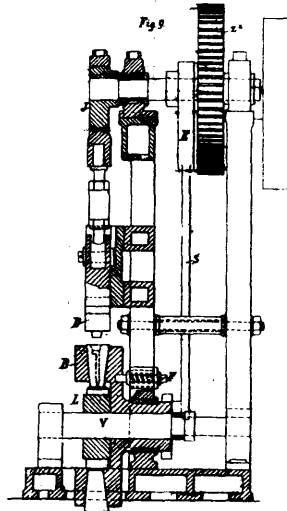
32703 Brown's Sash Fastener.



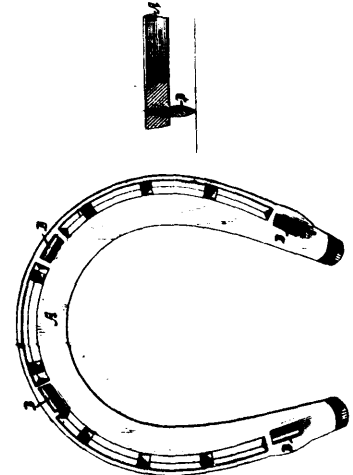
32704 Riddell's Truck Jack.



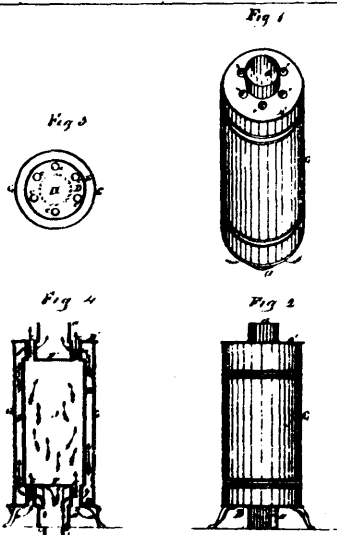
32705 Ware's Heating Apparatus.



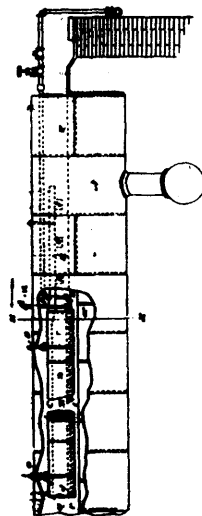
32706 Boecker's Manufacture of Hook Nails, etc.



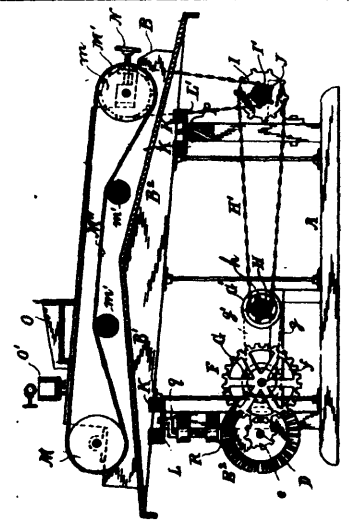
32707 Hooper's Horseshoe.



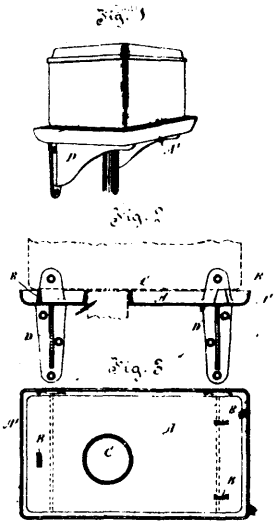
32708 Ingalls' Heating Drum.



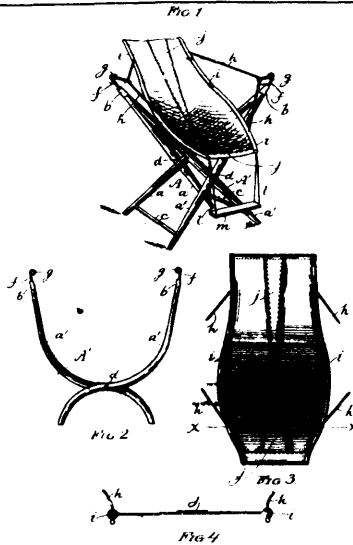
32709 Sullivan's Feed Water Heater Cleaner, etc.



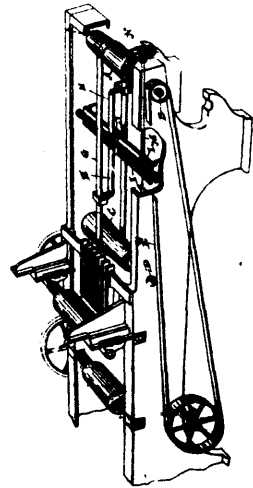
32710 Garnier's Ore Concentration.



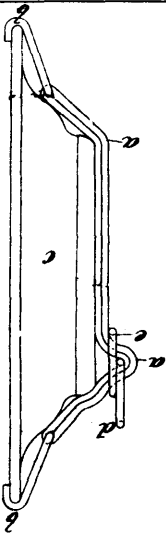
32711 Smith's Appliance for Water Closet Cisterns.



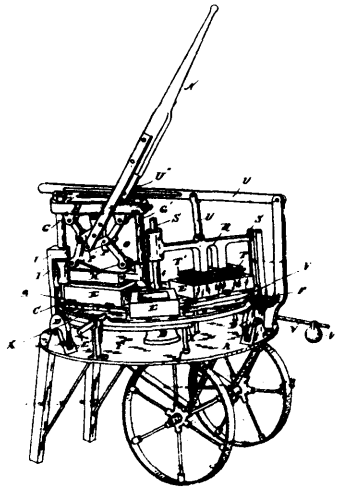
32712 Farwell's Hammock.



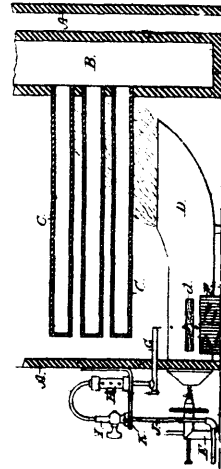
32713 Gourlay & Robertson's Wood Planing Machine.



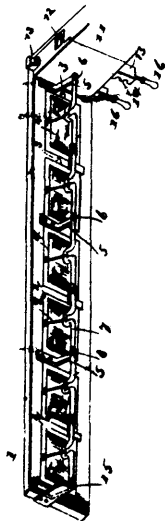
32714 Lempriere's Clip for Grasping Plates, etc.



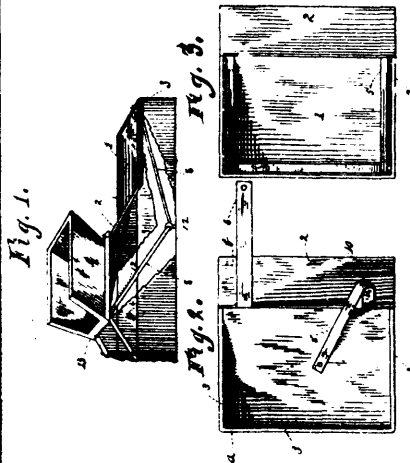
32715 Baird & Cornell's Machine for Repressing Brick.



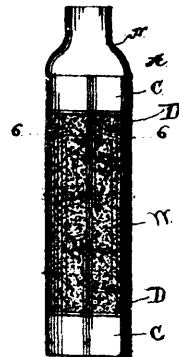
32716 Goodridge's Apparatus for Relighting the Flame of an Injector Burner.



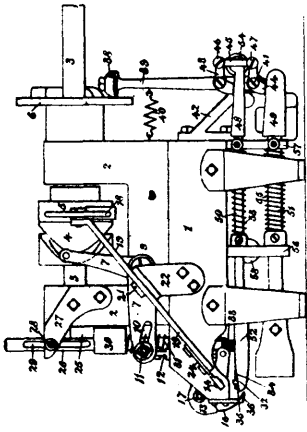
32717 Mitchell's Transom Lifter.



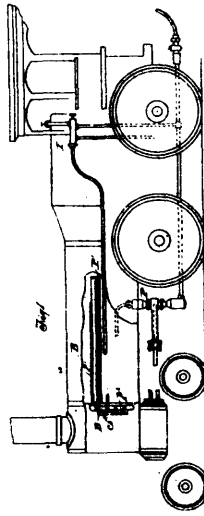
32718 Barnes' Buggy Boot.



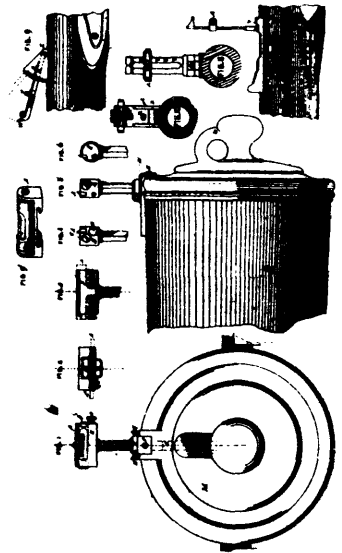
32719 Smith's Inhaler.



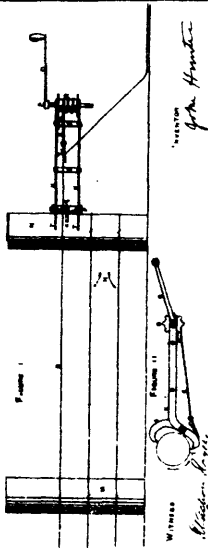
32721 Culley's Machine for Sewing Shoes.



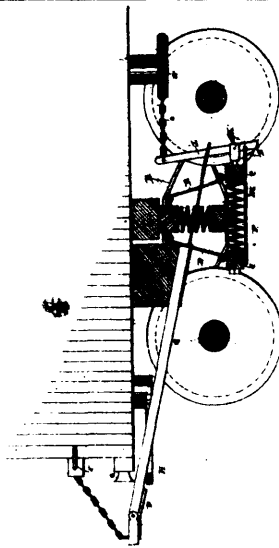
32722 Rushforth's Steam Generator.



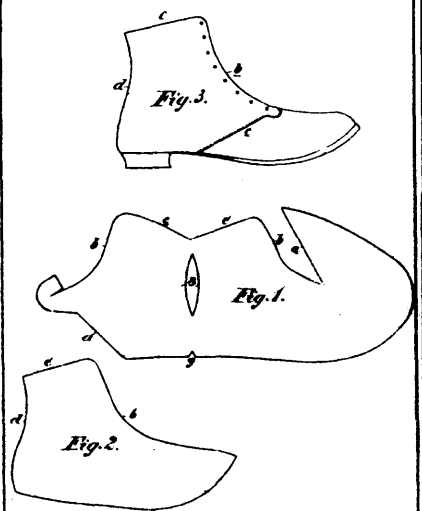
82723 Gaskin's Sight for Fire Arms.



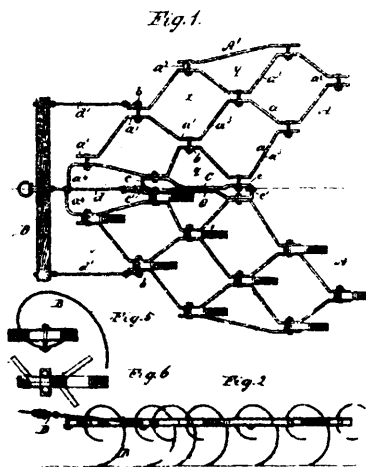
32724 Hunter's Fence Wire Stretcher.



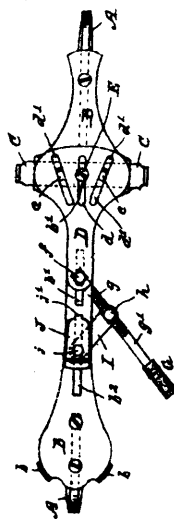
32725 Durkin's Car Brake.



32726 Thurston's Boot Upper.



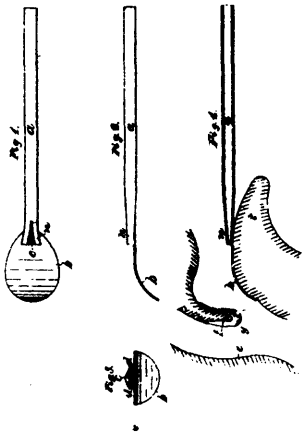
32727 LaDow's Harrow.



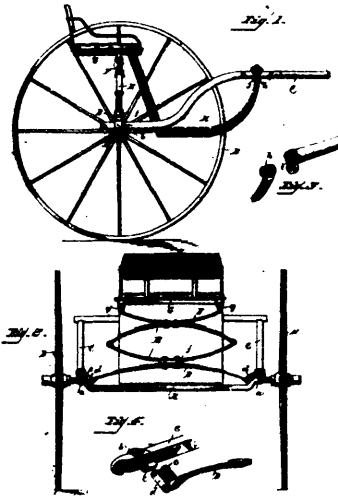
82728 Young's Skate.



32729 Wilson's Manufacture of Telegraph Poles, etc



32730 Osborne's Tongue Depressing Insufflator.



32731 Hayes' Road Cart.

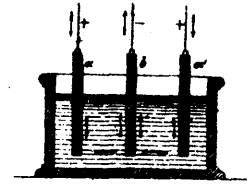
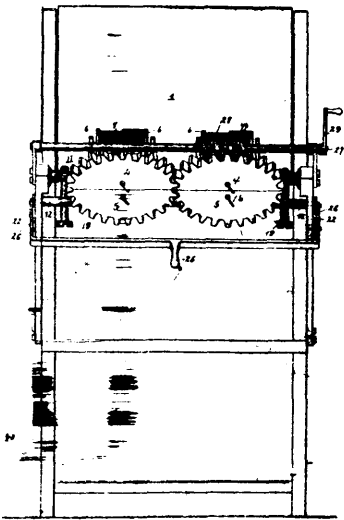
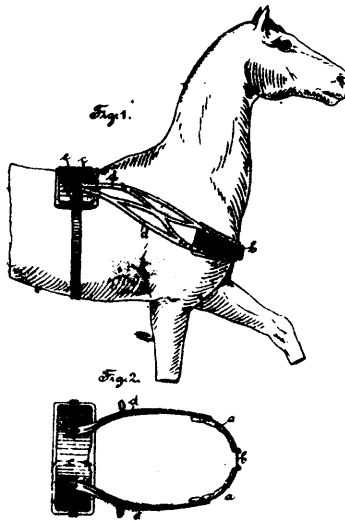


Fig. I.

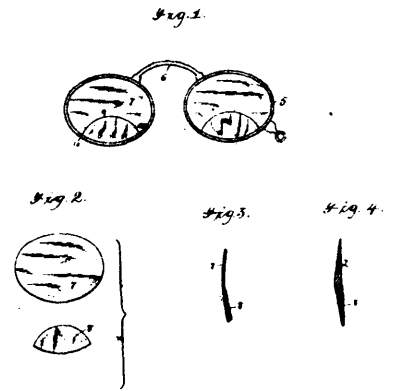
32732 Marx's Accumulation of Electrical Energy, etc.



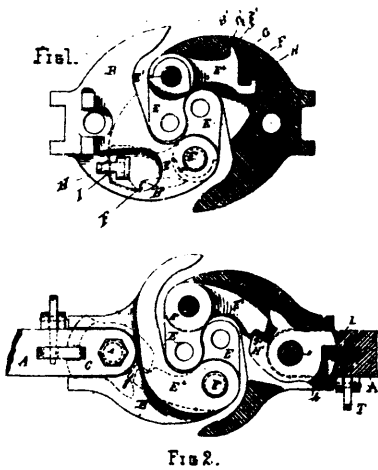
32733 Witter's Machine for Making Picket Fences.



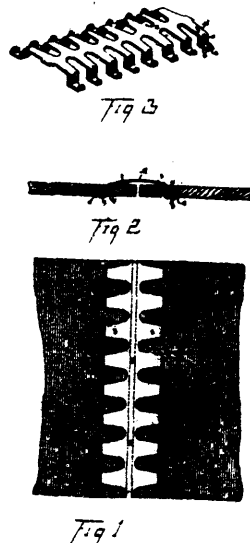
32734 Mendel's Substitute for Collars, etc.



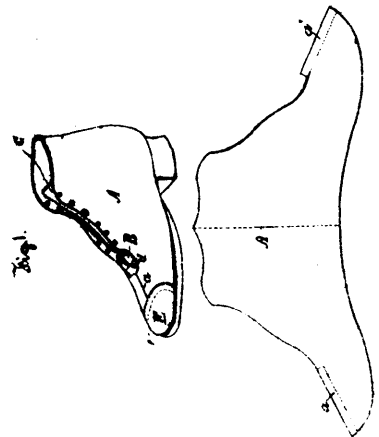
32735 Morck's Spectacles.



32736 Fox's Car Coupler.

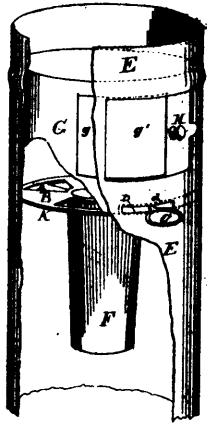


32737 Packer's Belt Fastener.

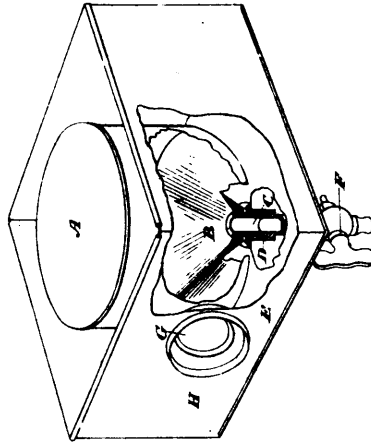


32738 Fortin's Boot and Shoe.

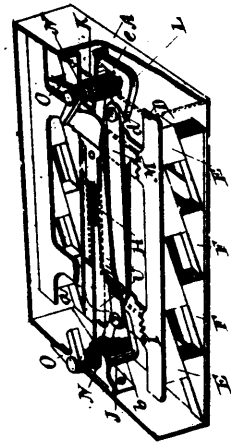




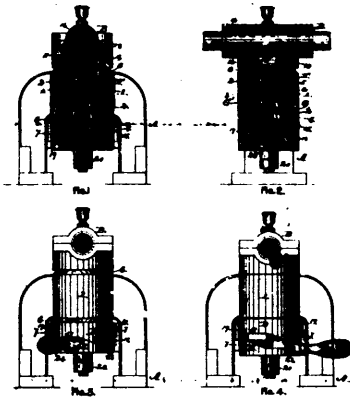
32740 Campbell's Stove Pipe Damper, etc



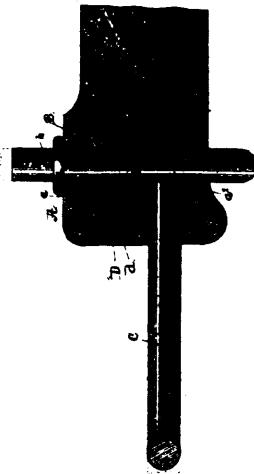
32742 Bright's Creamer.



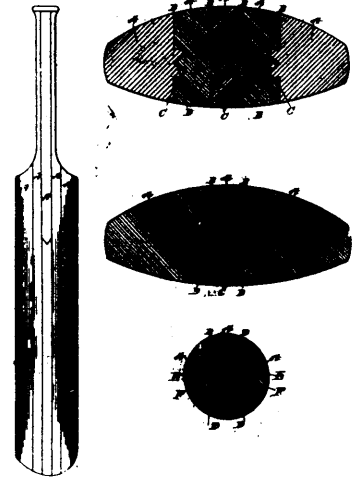
32743 Dicks' Printing Press.



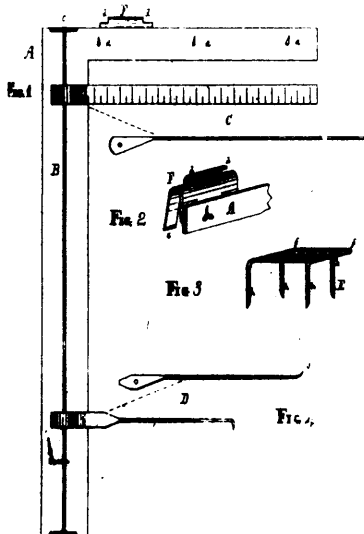
32744 McGrath's Journal Box.



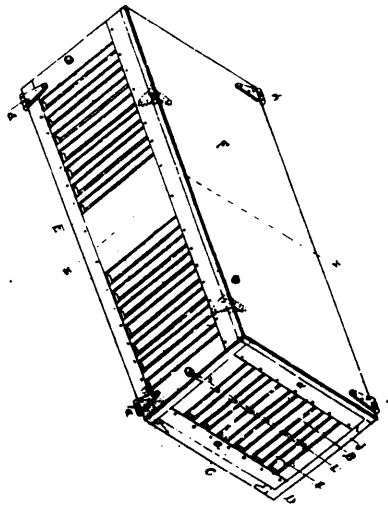
32745 Sheffield & Jamieson's Car Coupling.



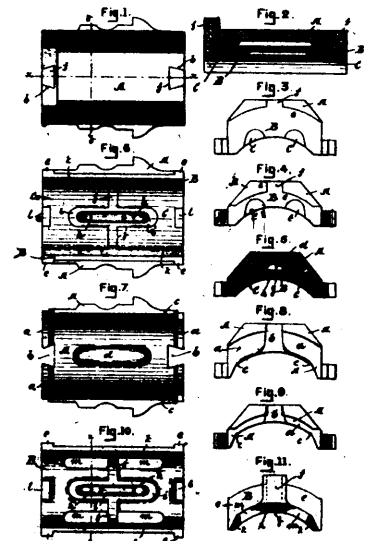
32746 Heighington's Cricket Bat.



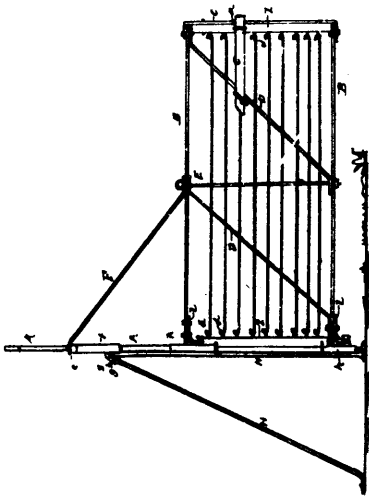
32747 Harmer's Printer's Copy Holder.



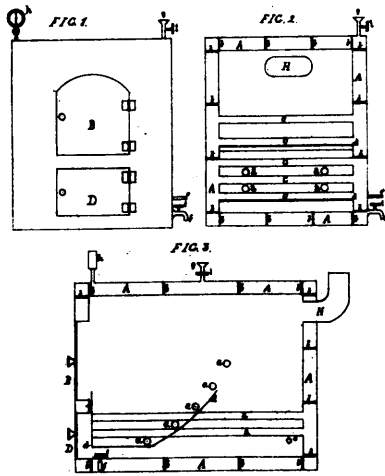
32748 Bruce's Folding Crate.



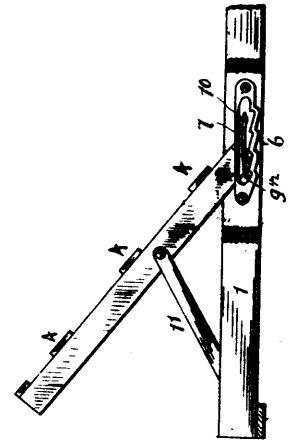
32749 Beddall's Journal Bearing.



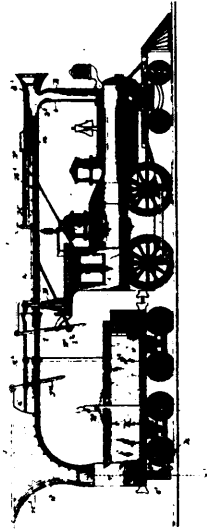
32750 Miller's Gate.



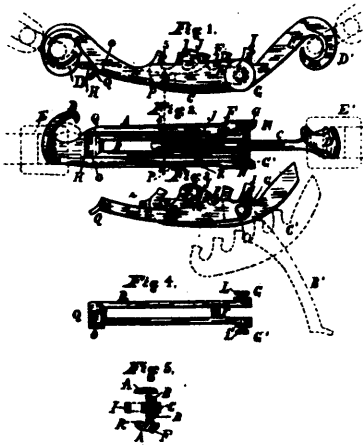
32751 Nicholson's Hot Water Furnace.



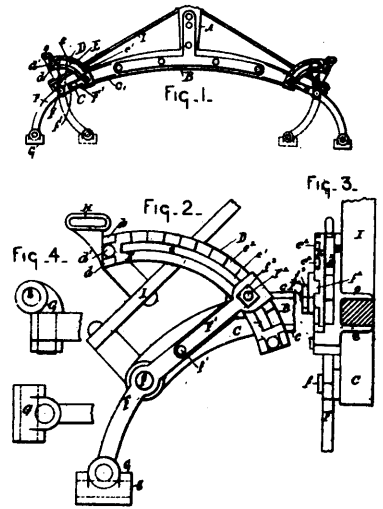
32752 Cleveland's Bed Bottom.



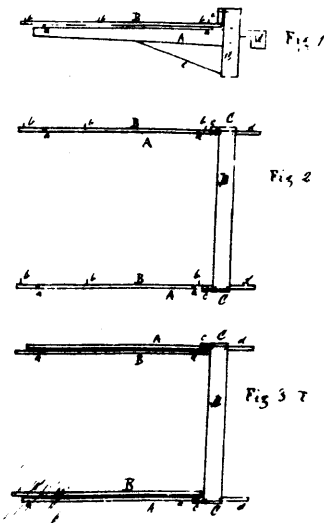
32753 Carper's Spark Conductor.



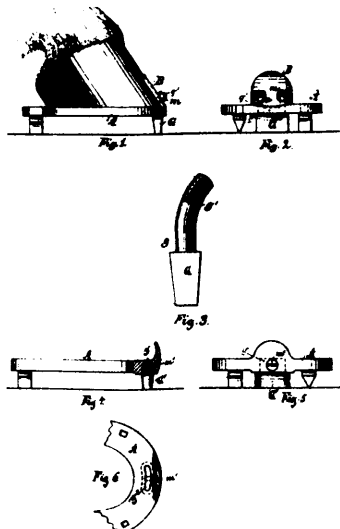
32754 Baker's Flame Fastener.



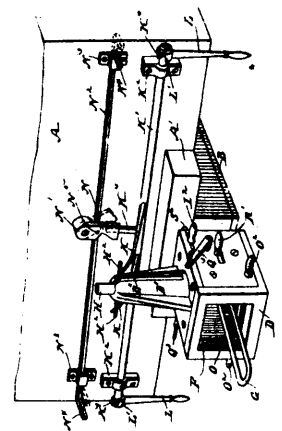
32755 Burt's Vehicle Pole.



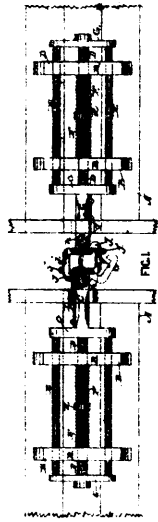
32756 Freeman's Bag Holder.



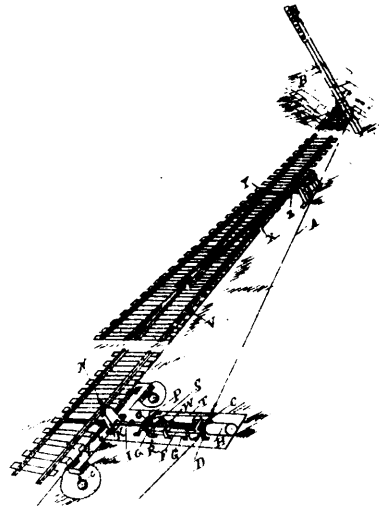
32757 Jacobs' Horse Shoe.



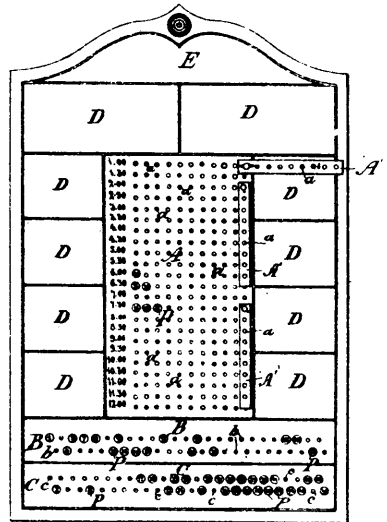
32758 Nusly's Car Coupling.



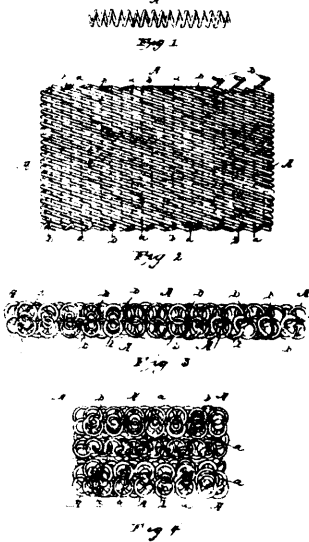
32758 Bellon's Car Coupling.



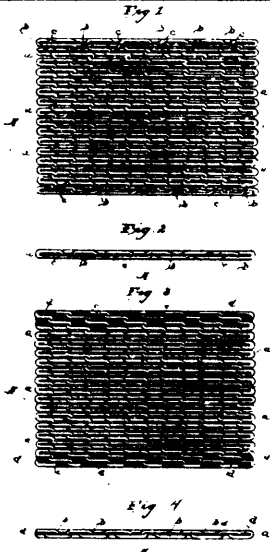
32760 Thompson's Operating Mechanism for Railway Semaphores.



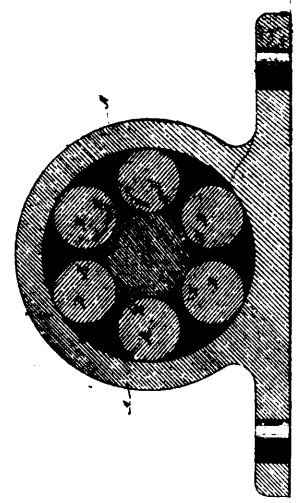
32761 Grafton's Hotel Night Call Indicator, etc.



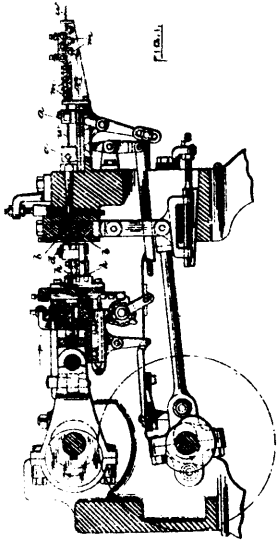
32762 Midgley's Wire Belting.



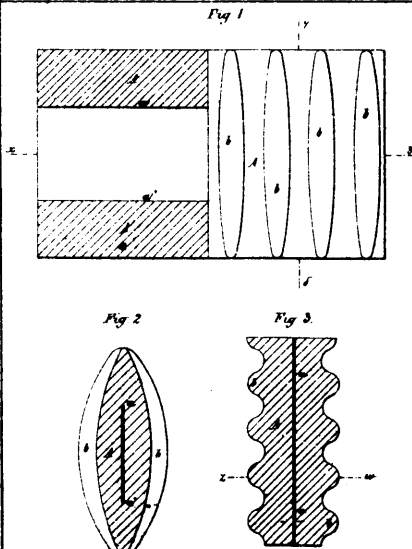
32763 Midgley's Wire Belting.



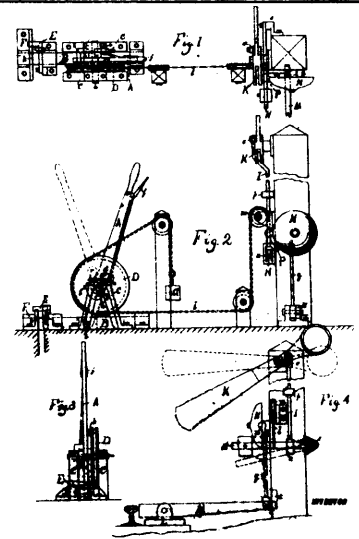
32764 Elliott's Journal Bearing.



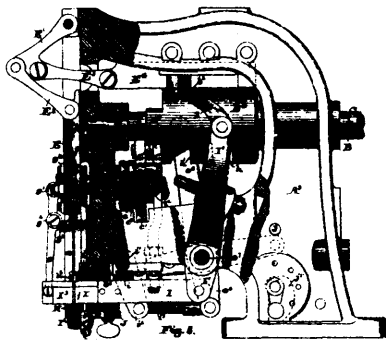
32766 Rogers' Wood Screw.



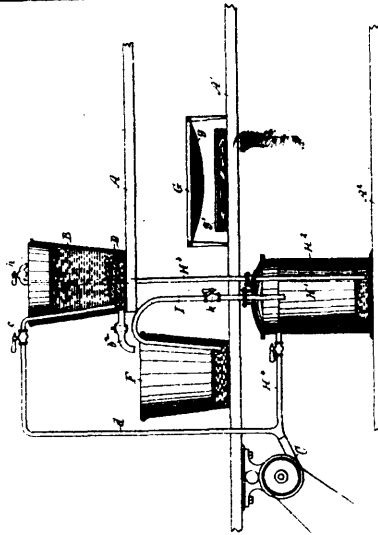
32766 Serpollet's Apparatus for Generating Steam.



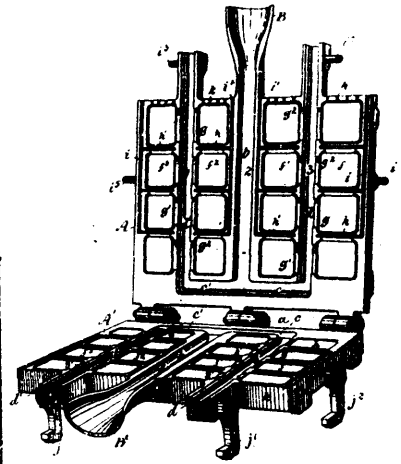
32767 Kelsey's Railway Signaling Apparatus.



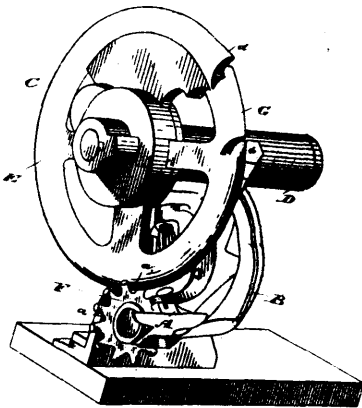
32768 Chaplin's Shoe Nailing Machine.



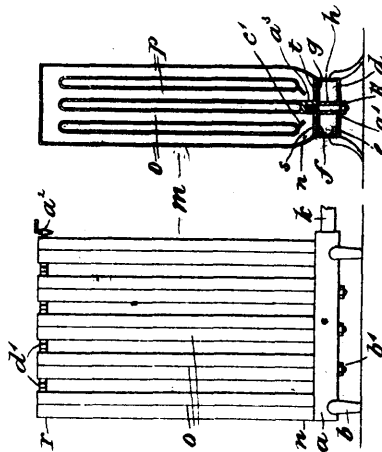
32769 Shapleigh's Method of Producing Chloride of Lead.



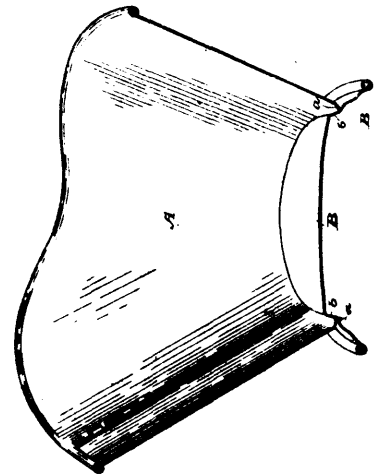
32770 Shapleigh's Mould for Casting Plates for Secondary or Storage Batteries.



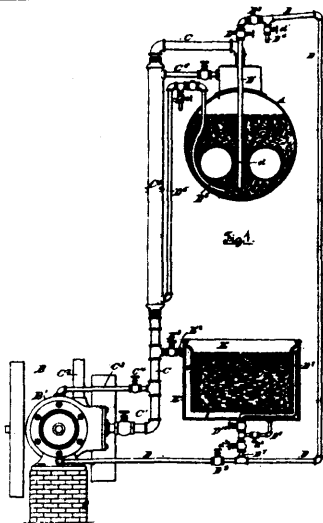
32771 Best's Knotting Mechanism.



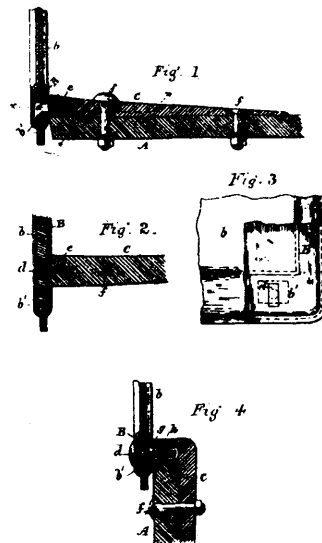
32772 Best's Heat Radiator.



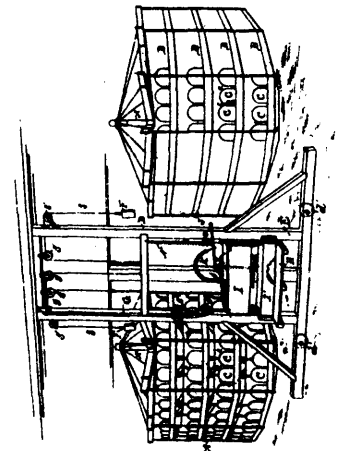
32773 Schneider's Bottom for Coal Hods, etc.



32774 Burnham's Connection for Steam Generators.



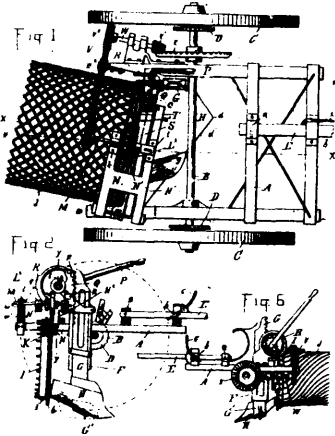
32776 McKinnon's Vehicle Dash.



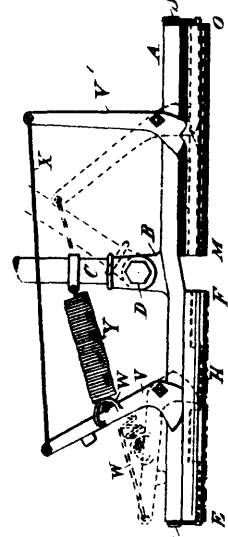
32777 Williams' Poultry Fattening Machine.



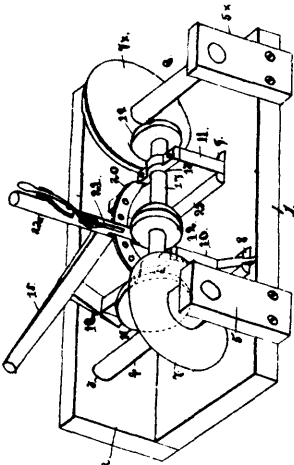
32778 Wiesendanger & Ulrich's Screen and Storm Door.



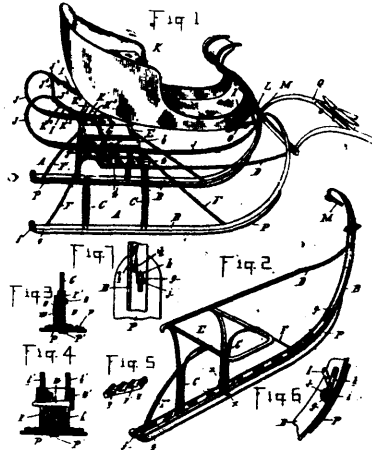
32779 Roberts' Potato Digger.



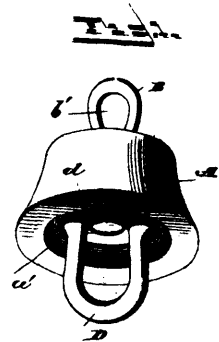
32780 Patrick's Roofing Tool.



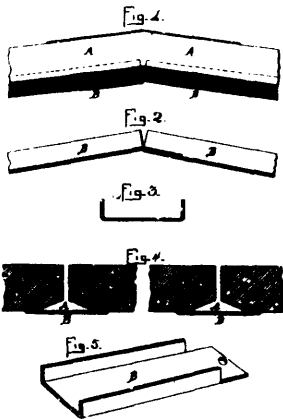
32781 Strong's Mechanism for Governing the Feed of Saw Mills.



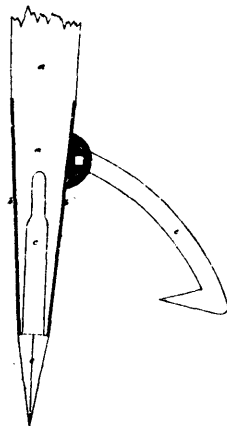
32782 Felt's Sleigh.



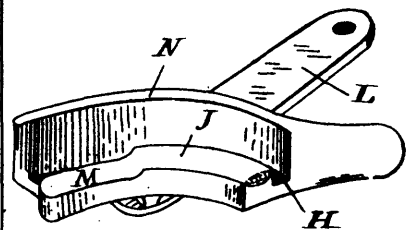
32783 Crosley's Bucket for Chain Pumps.



32784 Roberts' Freight Car Roof.

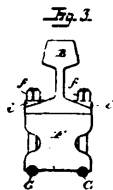
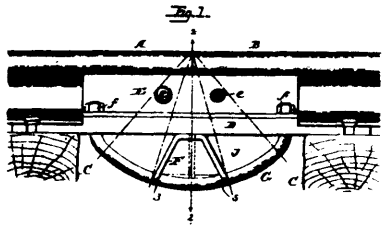


32785 McFarlane's Cant Dog.

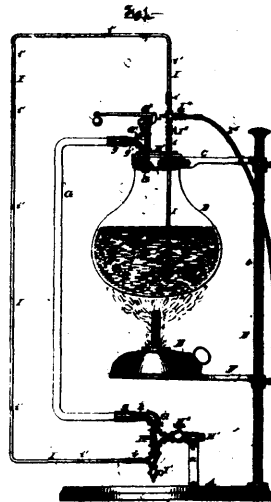


32786 Gabel's Twine Holder.

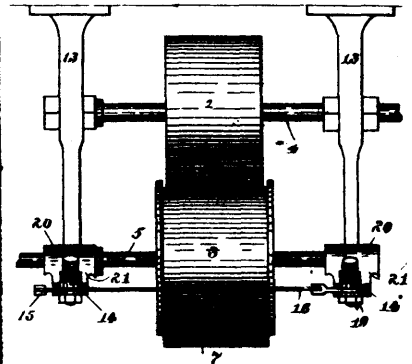




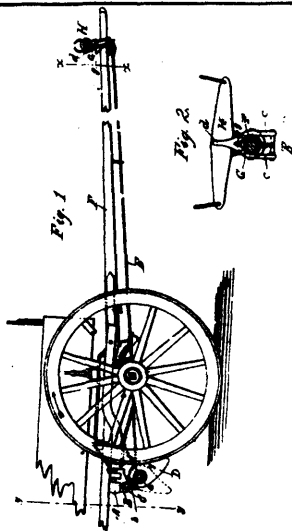
32787 Long's Rail Joint.



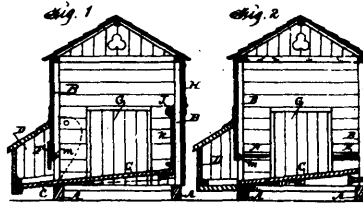
32788 Irving's Connection of Steam Generators



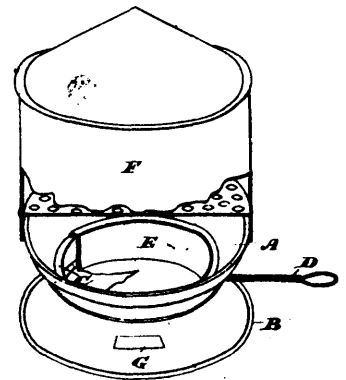
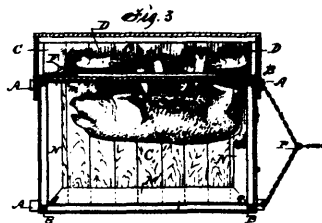
32789 Evans' Frictional Gearing.



32790 Rice's Wagon Brake.



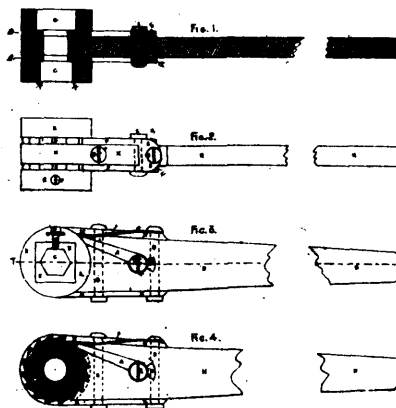
32791 Randleman's Hog Pen, etc.



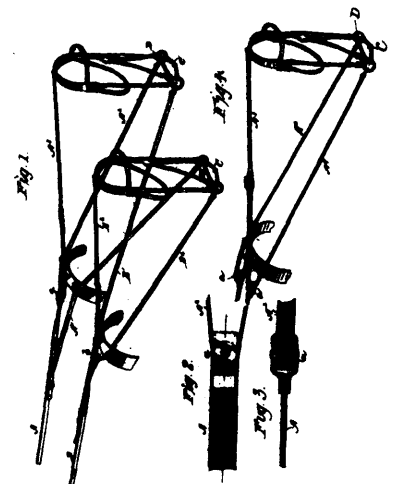
32792 Powell's Bottom for Cooking Utensils.



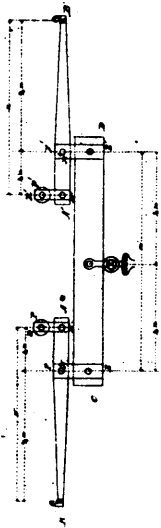
32793 Philps' Car Heater.



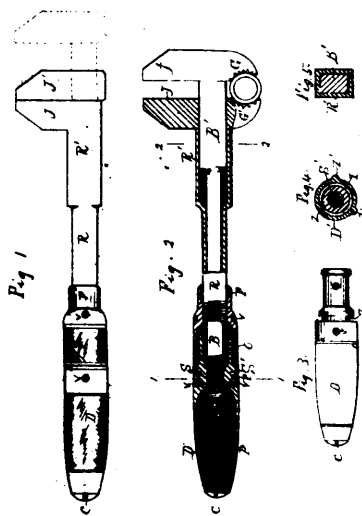
32794 Williams & Harris' Ratchet Wrench.



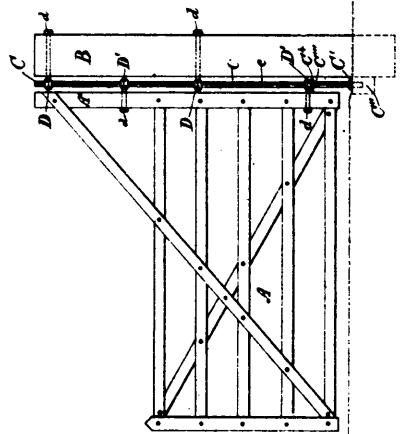
32795 Dickinson's Driving Reins.



32786 Ellis' Set of Tree Horse Whiffstrees.



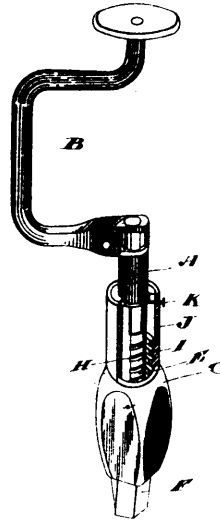
32787 DeWitt's Wrench.



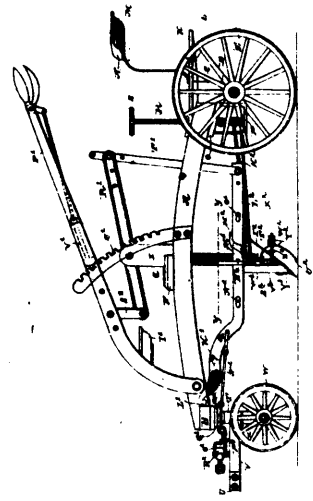
32798 Ratcliff's Gate Hinge.



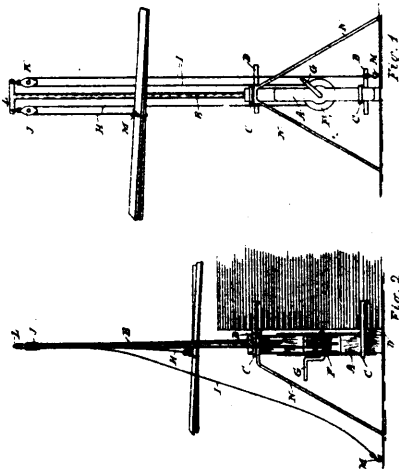
32799 Sergeant & Northcott's Safety Reins.



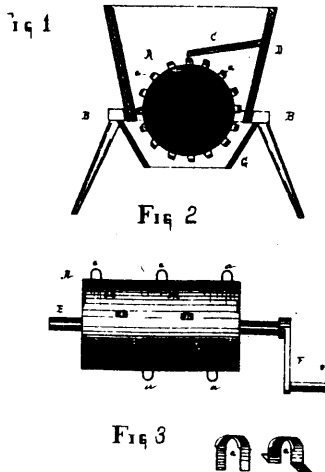
32800 Stewart's Bit Brace, etc.



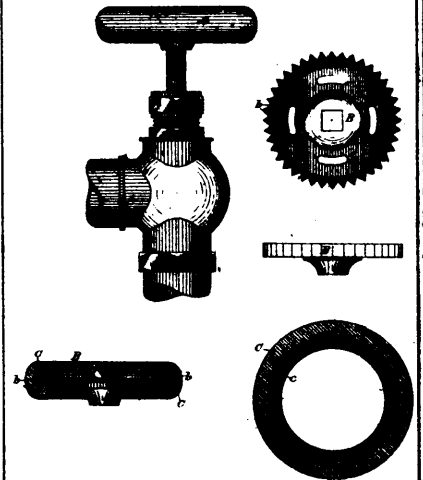
32801 Lomont's Road Scraper.



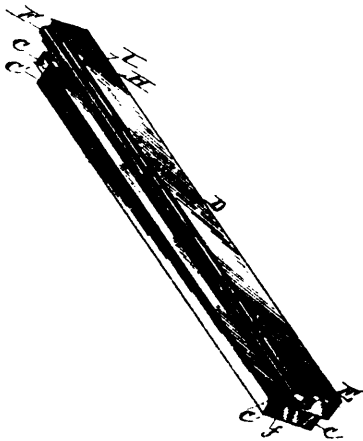
32802 Nadeau's Lumber Lifting Machine.



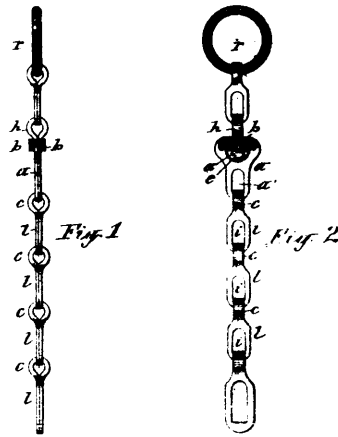
32803 Fairweather's Root Cutter.



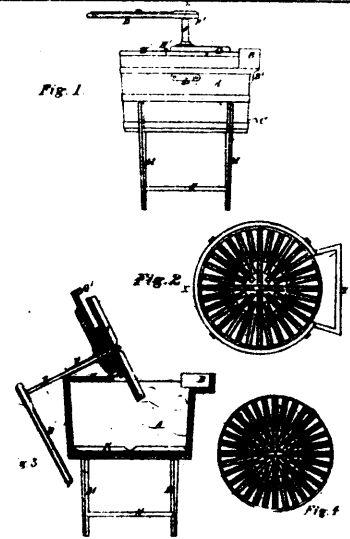
32804 Helghington's Handle for Valves, etc.



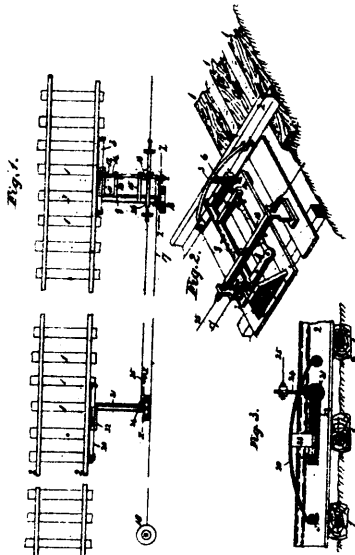
32805 Clapp's Drawer Guide.



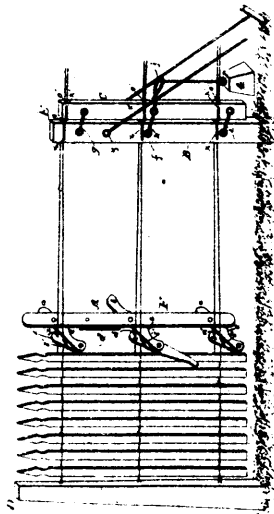
32806 Kinsley's Trace Chain.



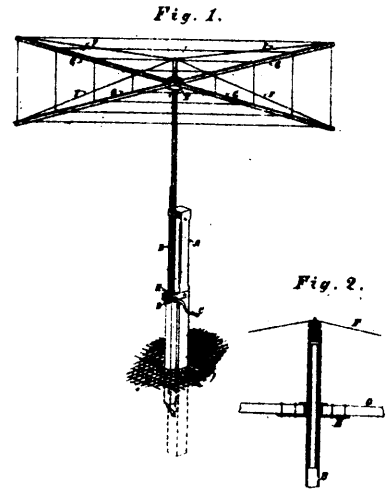
32807 Major's Washing Machine.



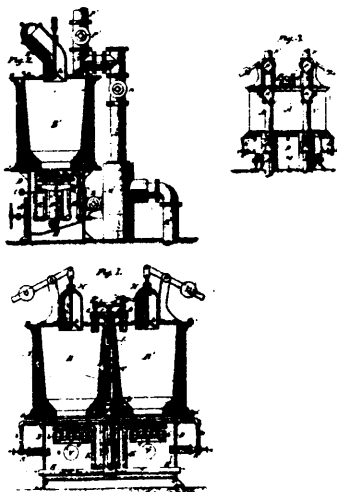
32808 Williams' Railway Signal.



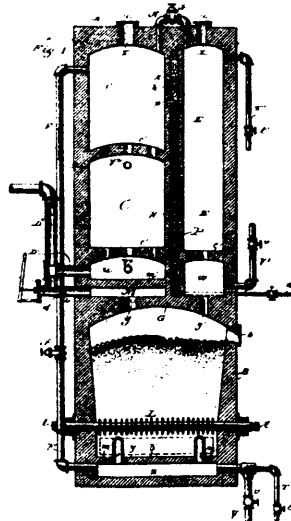
32809 Jones' Device for Wiring Wood Fences.



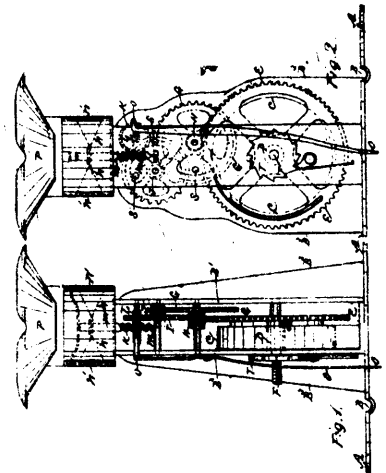
32810 Hasson's Clothes Dryer.



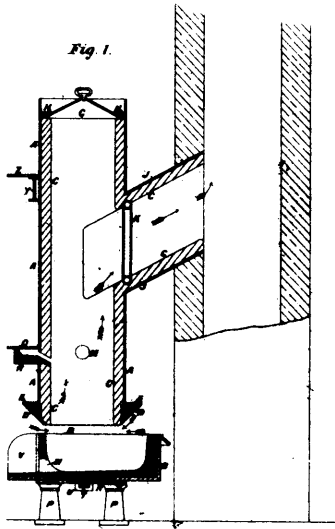
32811 Kitson's Method of Producing Fuel and Illuminating Gas, etc



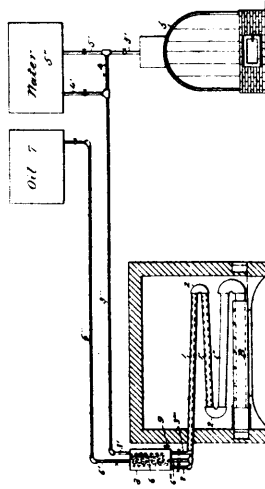
32812 Morse's Apparatus for Manufacturing Gas.



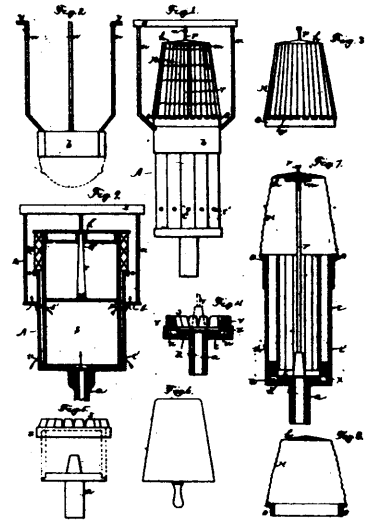
32813 Heath's Reversible Movement for Oil Lamps.



32814 Evans & Hilton's Cupola Furnace, etc.



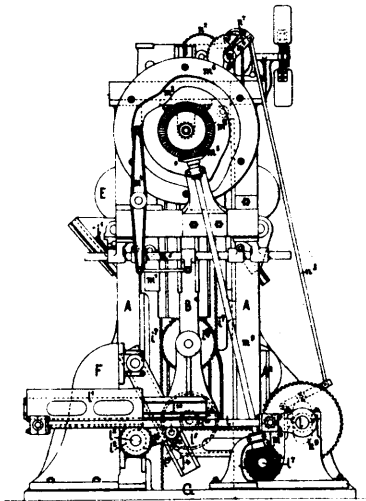
32815 Andrews' Hydro-Carbon Furnace.



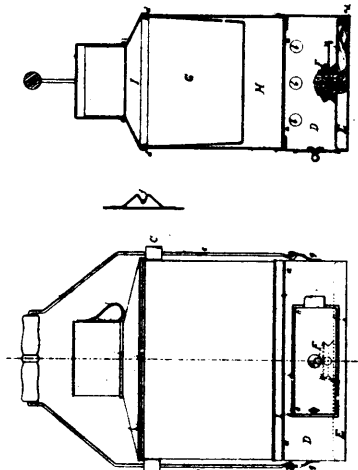
32816 Henkle's Gas Burner.



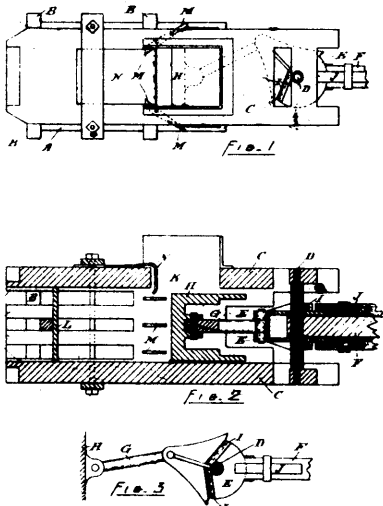
32817 Chambers & Liddell's Life Boat.



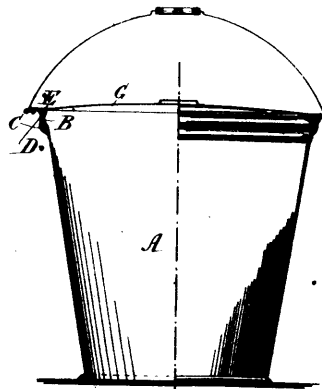
32818 Buss & Saurer's Embroidering Machine.



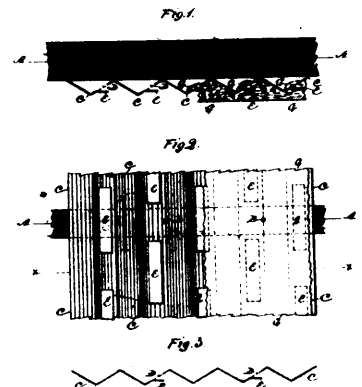
32820 O'Leary's Dinner Pail.



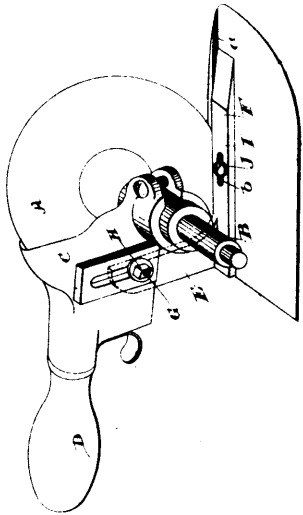
32821 Lamothe's Hay Press.



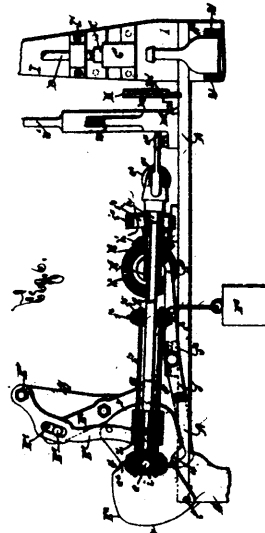
32822 Leevis' Slop Pail.



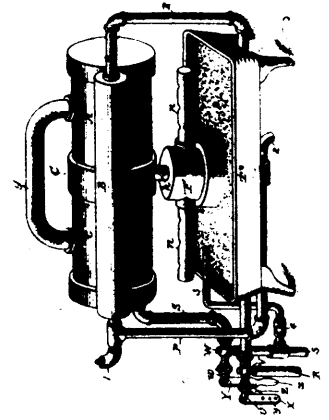
32823 Maw's Metallic Lathing.



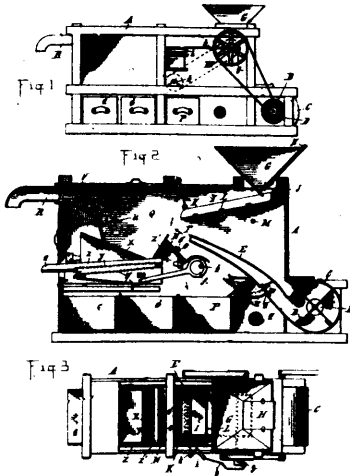
32824 Schofield's Machine for Cutting Cloth.



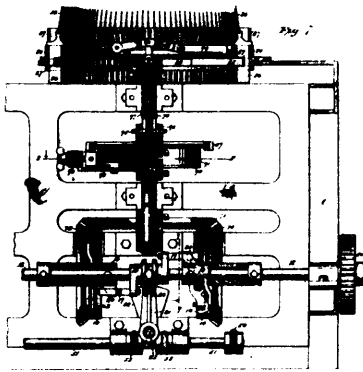
32825 Wile & La Casse's Machine for Corking Bottles.



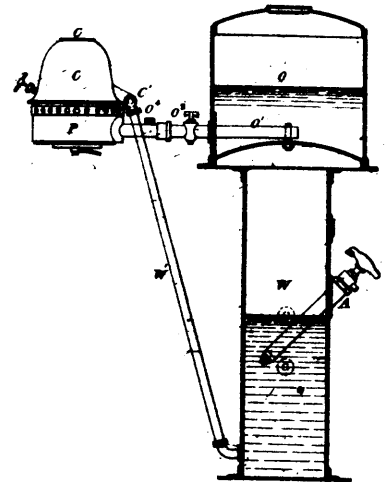
32826 Davis' Hydro-Carbon Heater.



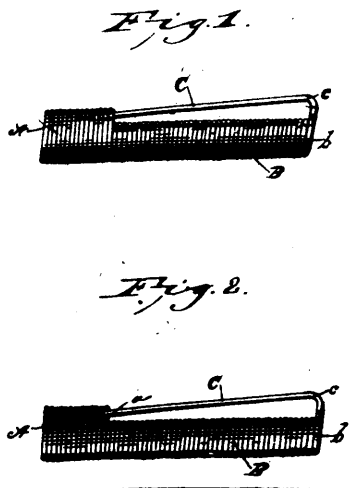
32827 Pickett's Coffee Cleaner and Separator.



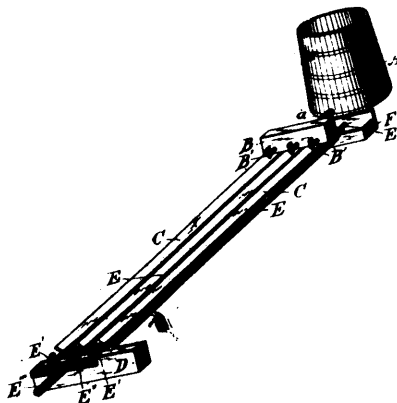
32828 Irish's Embroidery Machine.



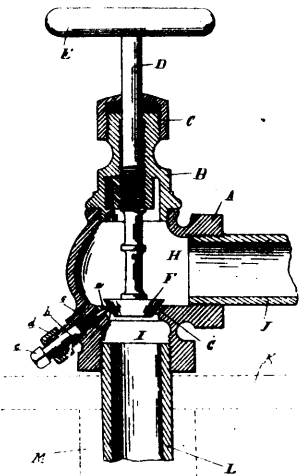
32829 Grimston's Self-Generating Gas Burner, etc.



32830 McConnell's Safety Pin.

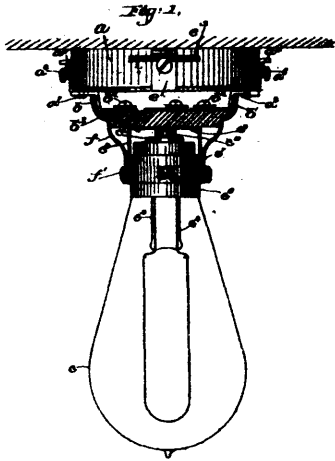


32831 Hutchison's Liquid Heater.

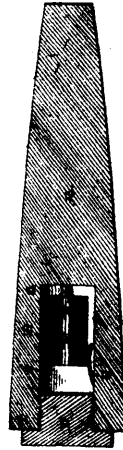


32832 McElroy's Drain Valve.

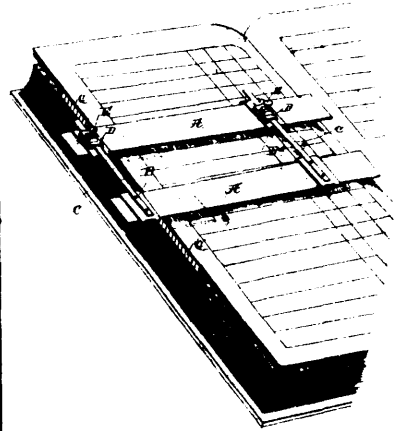




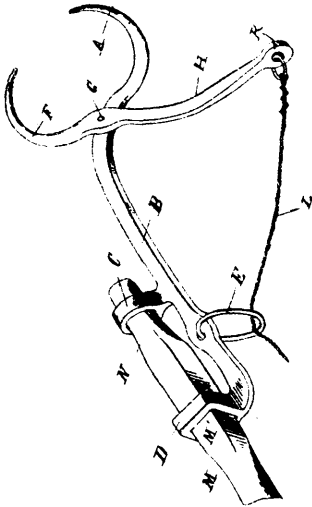
32833 Kimball & Wirt's Electric Cut-Out.



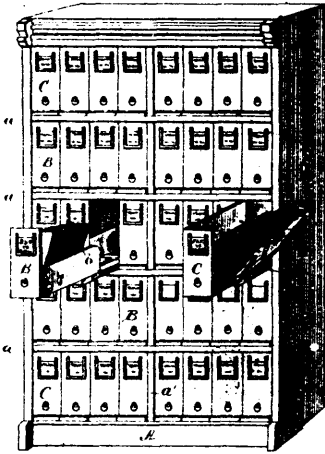
32834 Moore's Shell.



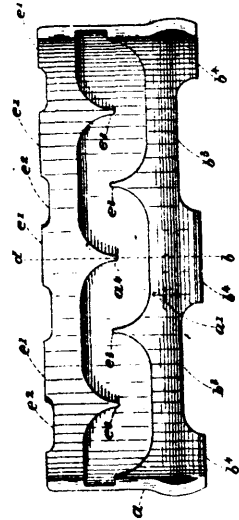
32835 Love's Posting and Copying Guide.



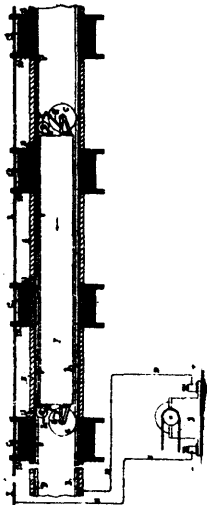
32836 Wiedon's Annual Catcher.



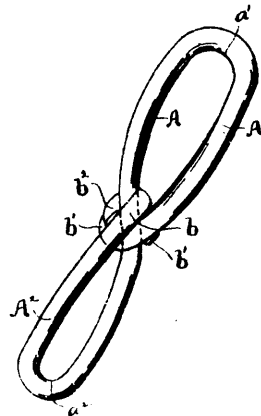
32837 Woodruff's Document and Letter File.



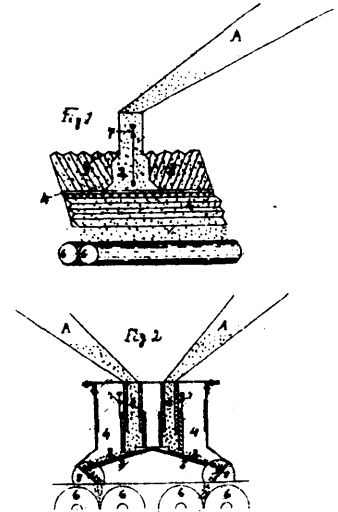
32838 Rose's Brake Shoe.



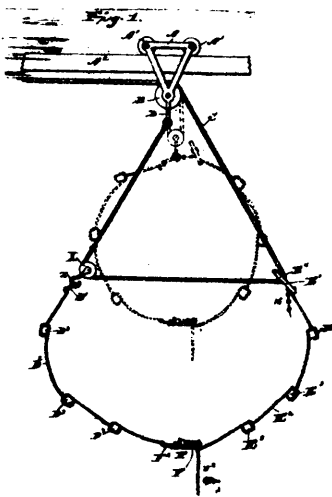
32839 Williams' Electro-Magnetic Dispatch Apparatus, etc



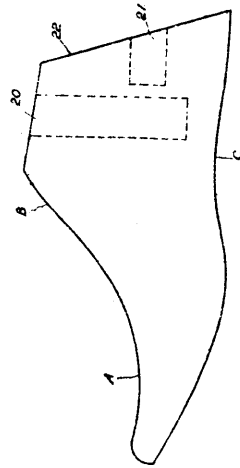
32840 Brown's Chain Link.



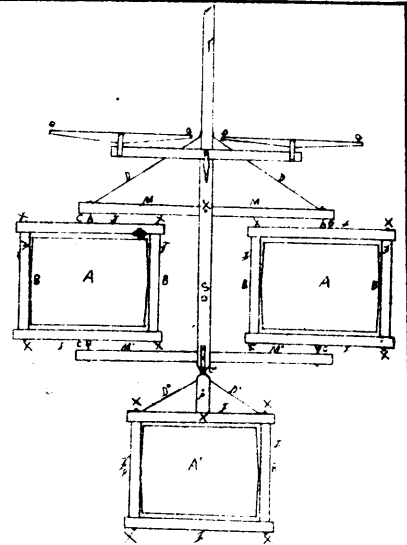
32841 Shaw's Machine for Feeding Grain to Flour Mills.



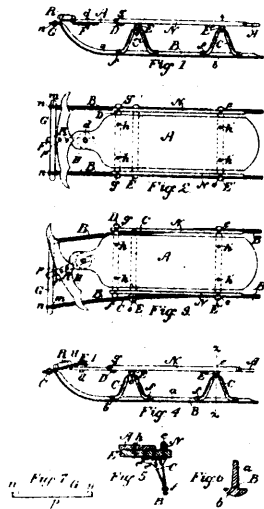
32842 Ricker's Hay Sling.



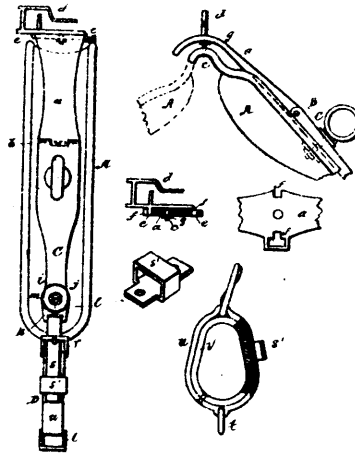
32843 Clark's Follower or Form for Boots.



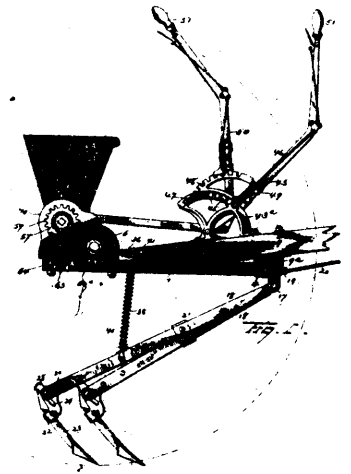
32844 McCredie's Machine for Rolling Land.



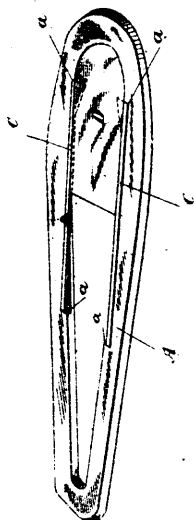
32845 Allen's Sled.



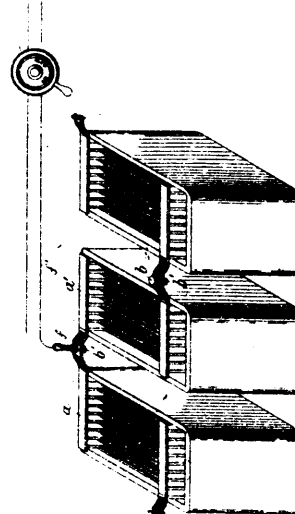
32846 Vogtsberger's Harness Saddle.



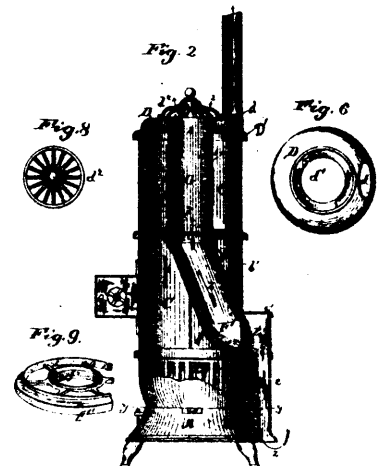
32847 Van Brunt's Seeding Machine



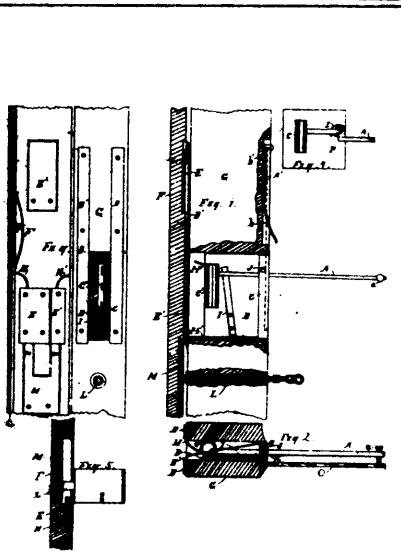
32848 Kerr's Coffee Lid.



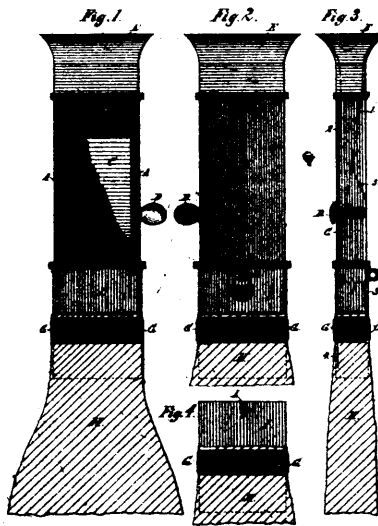
32849 Smith's Device for Connecting the Plates of one Electric Battery with another Battery, etc.



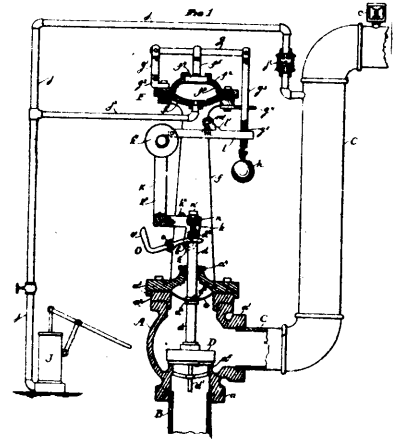
32850 Blakesley's Stove.



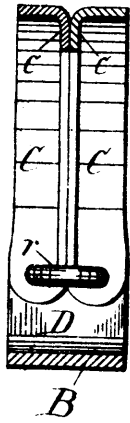
32851 Ackerman's Burglar Alarm.



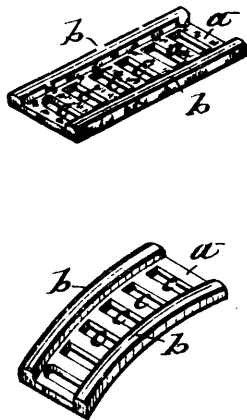
32852 Berne's Fare Collector, etc.



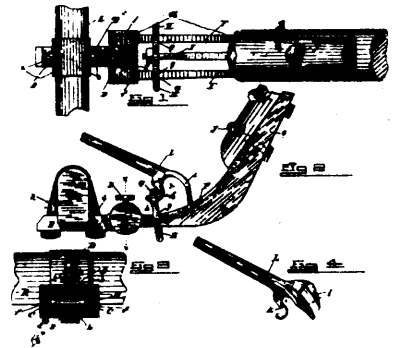
32853 Clapp's Automatic Valve.



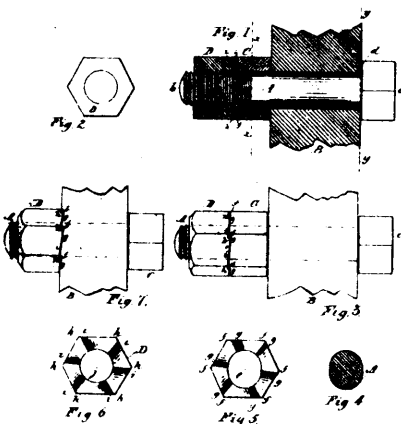
32854 Kelley's Animal Trap.



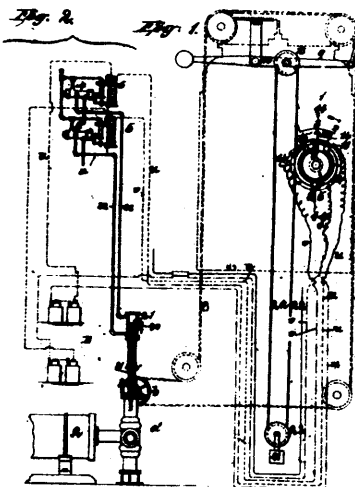
32855 Dickinson's Clasp Plate.



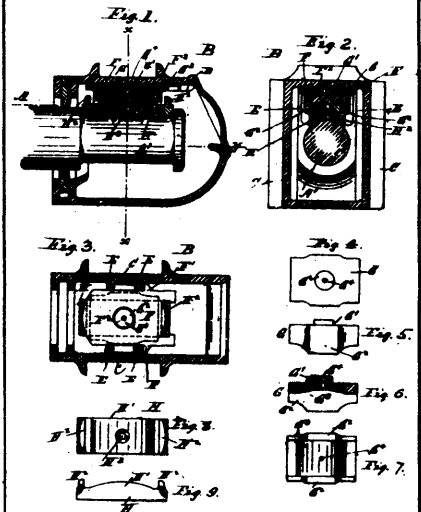
32856 Lee's Thill Coupling.



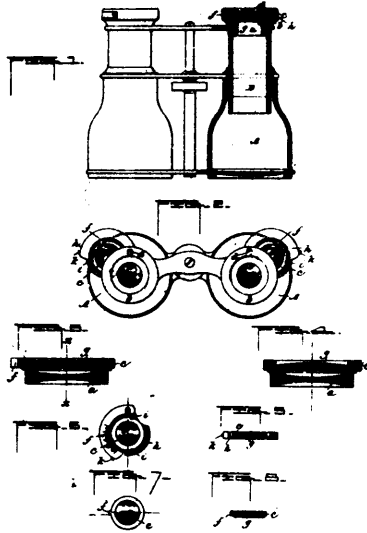
32857 Harris' Nut Lock.



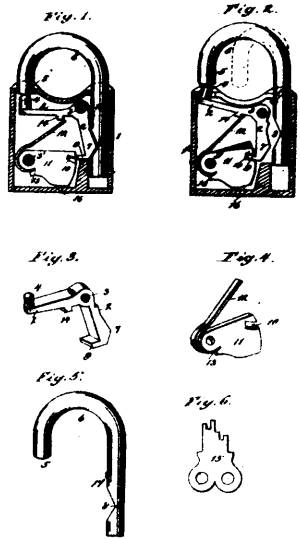
32858 Smith's Elevator.



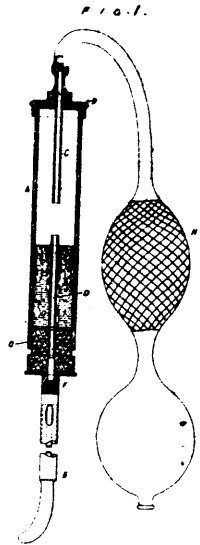
32859 Leslie's Bearing for Car Axles.



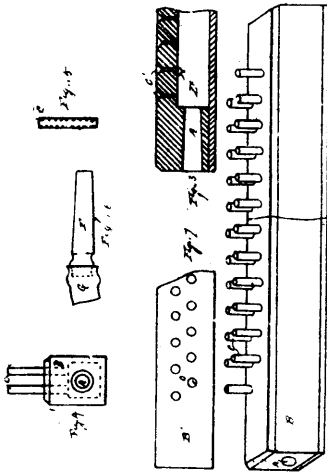
32860 Kornblum, Brashear & Painter's Astigmatic Eye Piece.



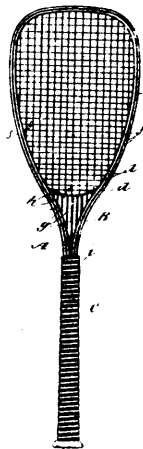
32851 Woodward's Padlock.



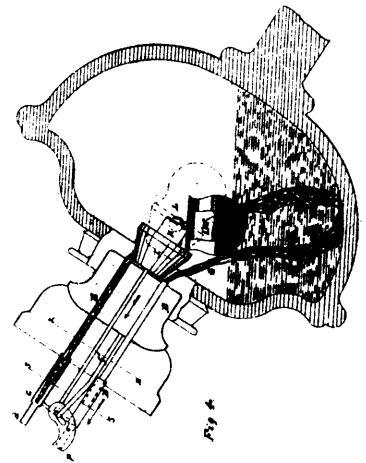
32852 Black's Thermo-Cauter, etc.



32863 Russell's Device for Holding and Dipping Pills, etc.



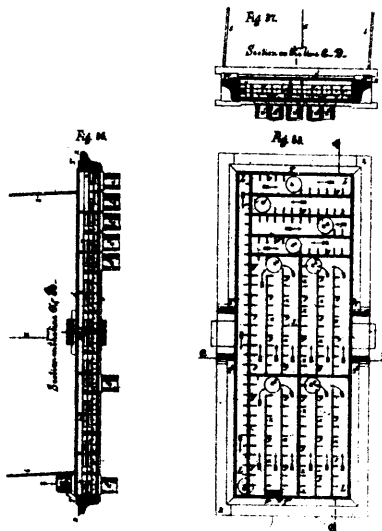
32864 Onell's Game Bat.



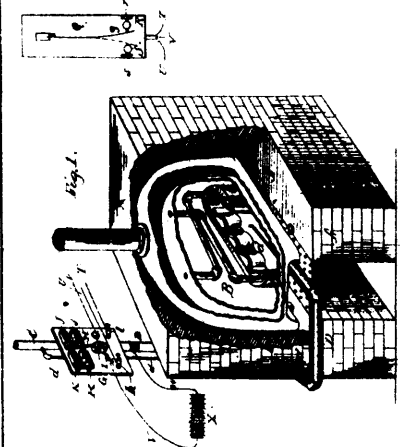
32855 Eli's Lamp.



32866 Thayer's Aerial Apparatus for Navigating the Air, etc.



32868 Haggenmacher's Apparatus for Sifting and Sorting Meal, etc.



32869 Ware's Devices for Controlling Fluid Supply.

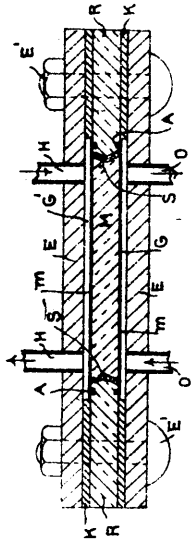
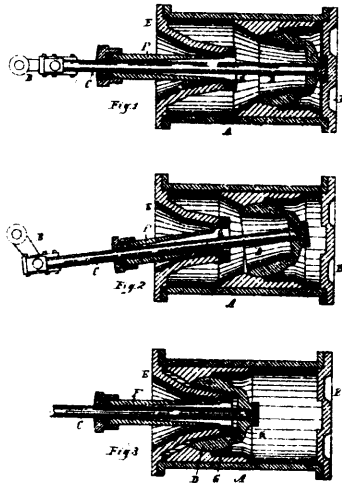
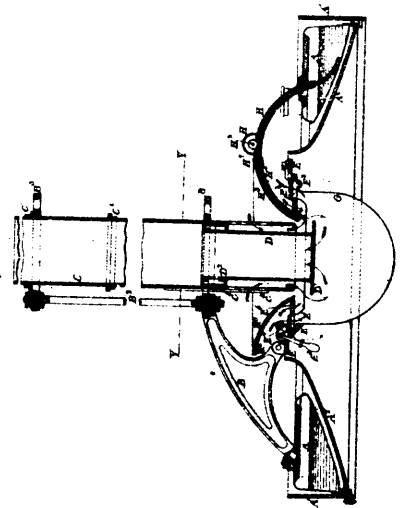


FIG. 1

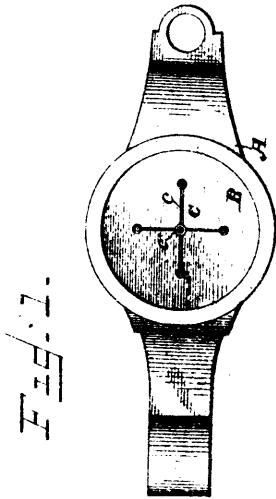
32870 Mond & Lenzler's Gas Battery



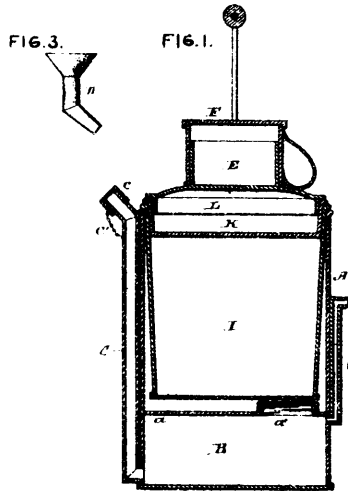
32871 Jarvis' Steam Engine.



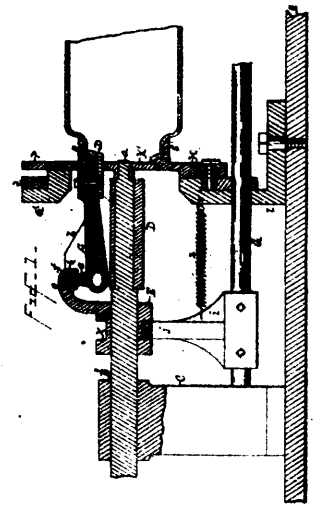
32872 Resc & Atkins' Oil Lamp.



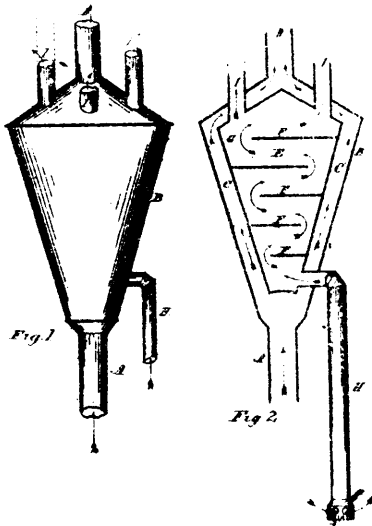
32873 Bettini's Record and Reproduction of Sound, etc.



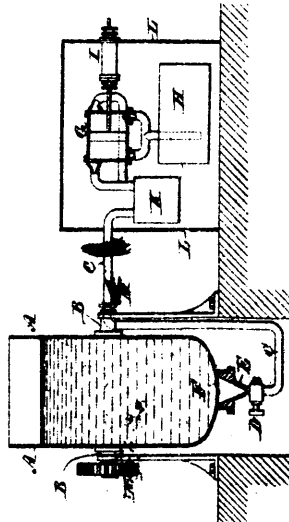
32874 Halley's Dinner Pail.



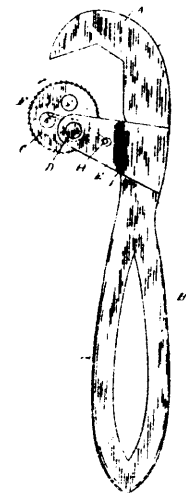
32875 Brady's Machine for Finishing the Necks of Glass Bottles, etc.



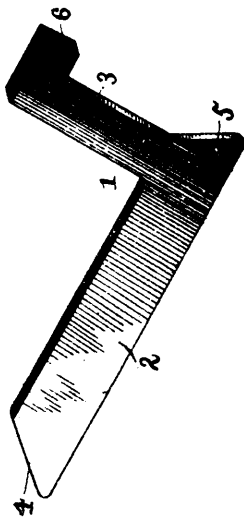
32876 Phillips' Heating Drum.



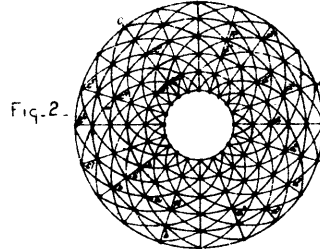
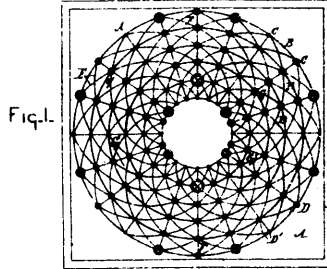
32877 Netto's Manufacture of Aluminium, etc.



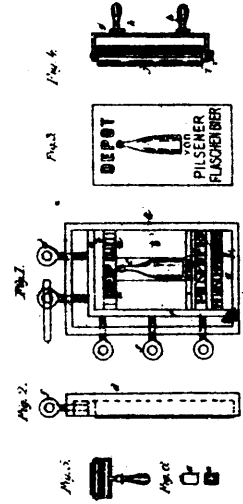
32878 Adams' Pipe Wrench.



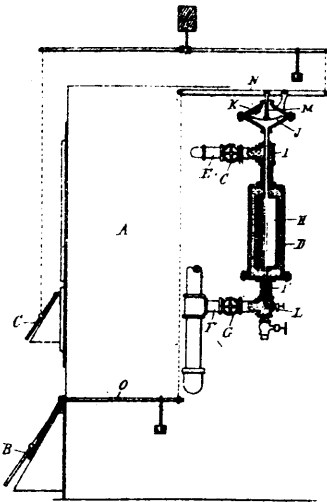
32879 Billings' Commutator Bar.



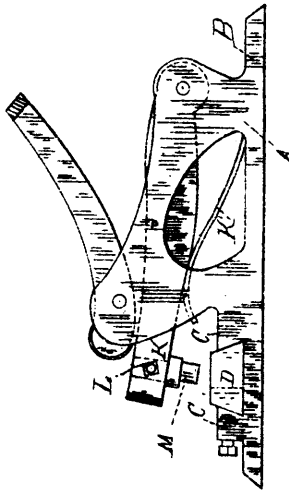
32880 Newland's Game.



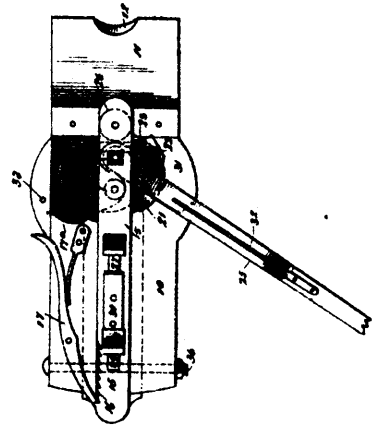
32881 Winkler's Sheet Metal Sign.



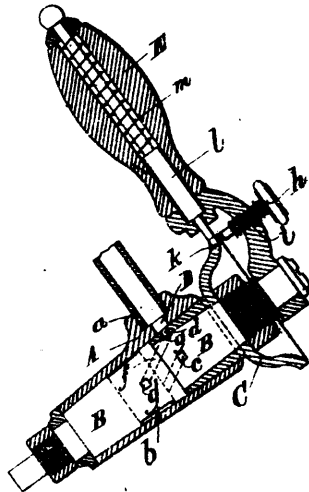
32882 Jowett's Damper Regulator.



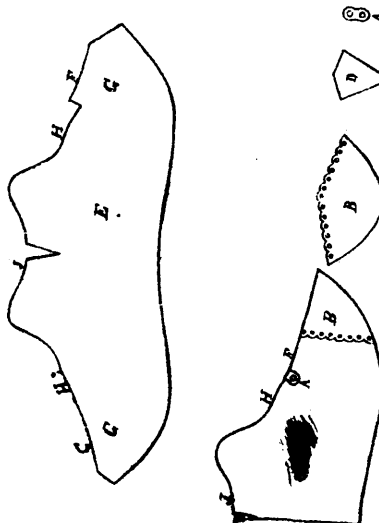
32883 Etley's Saw Guimmer, etc.



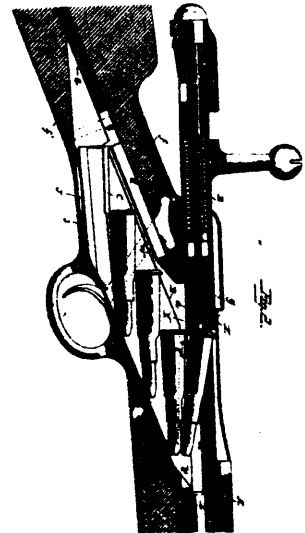
32884 Dix's Floor Jack.



32885 Willmott, Gillett & Frank's Tap, etc.

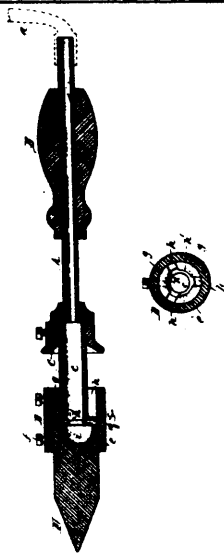


32886 Rouetta's Empeigne de Chaussures.

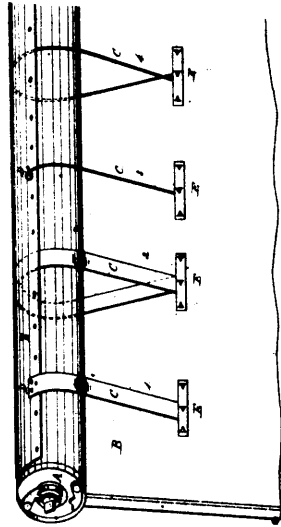


32887 Weatherby's Fire Arm.

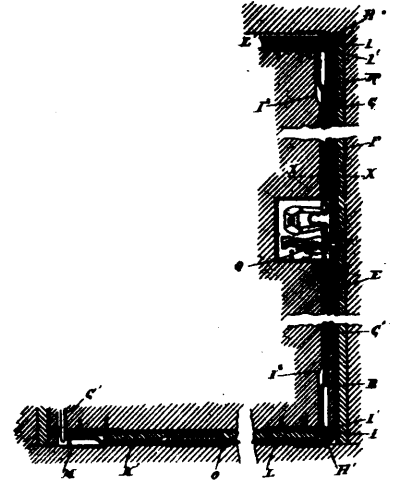




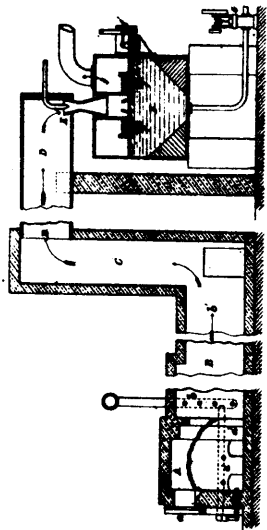
32888 Ferns' Soldering Iron.



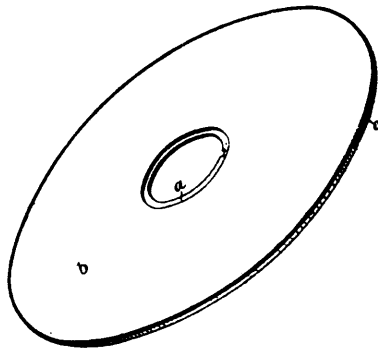
32889 Harris' Device for Securing Shades, etc.



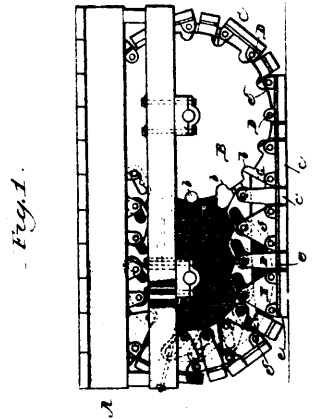
32890 Binsfeldt & Chateau's Door Lock, etc.



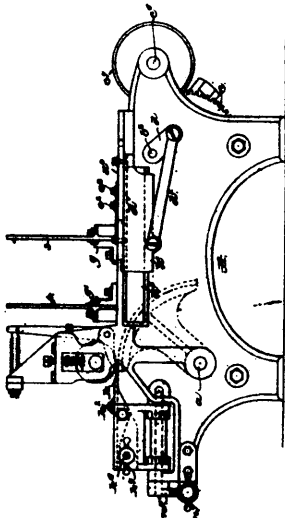
32891 Hannay's Manufacture of Sulphate of Lead Pigment.



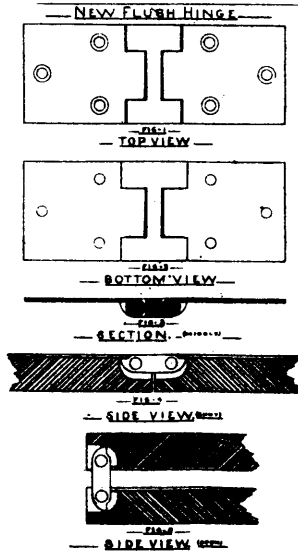
32892 Tainter's Sound Recording Tablet.



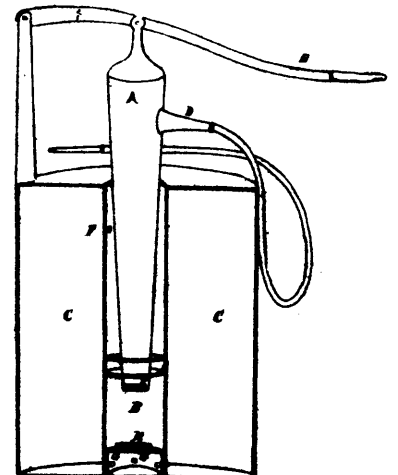
32893 Edwards' Tractor.



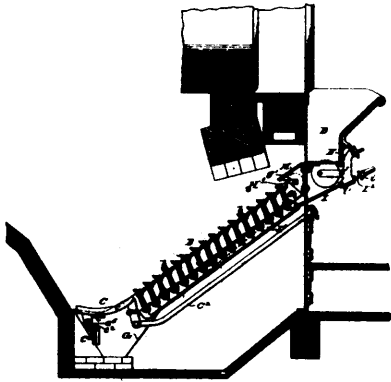
32894 Belding's Counter Skiving Machine.



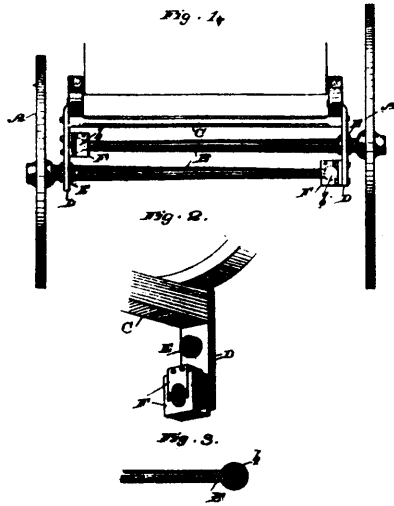
32895 Milne's Hinge.



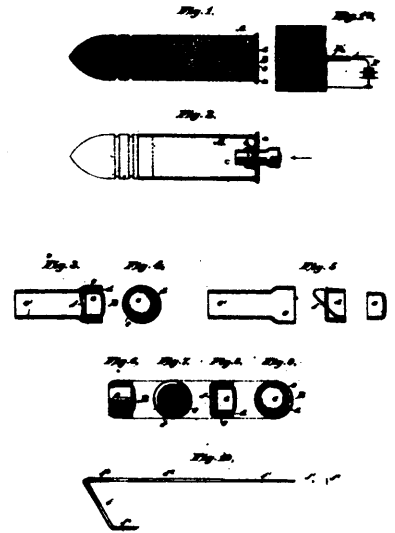
32896 Grant's Machine for Watering Lawns.



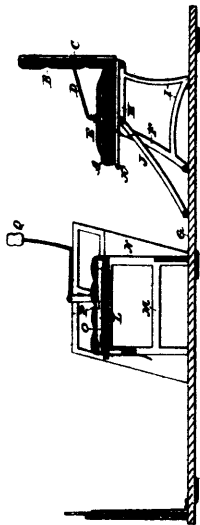
32897 Roney's Steam Boiler Furnace.



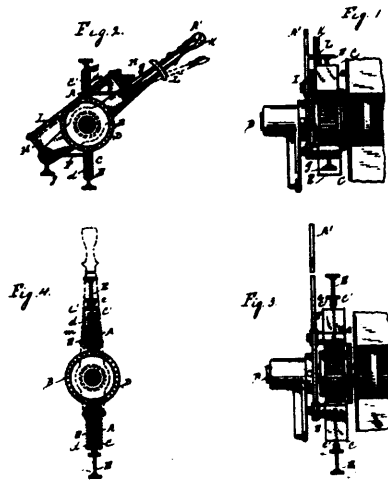
32898 Kenyon's Vehicle.



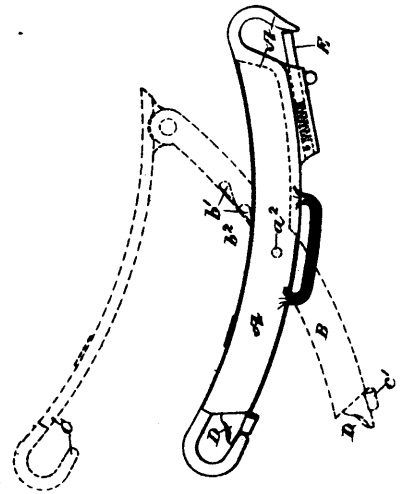
32899 Day's Electric Cartridge and Primer.



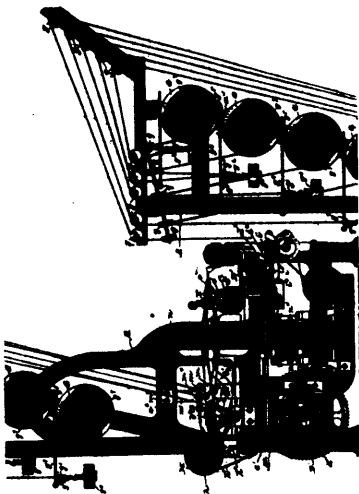
32900 Goodrich's Vehicle Seat.



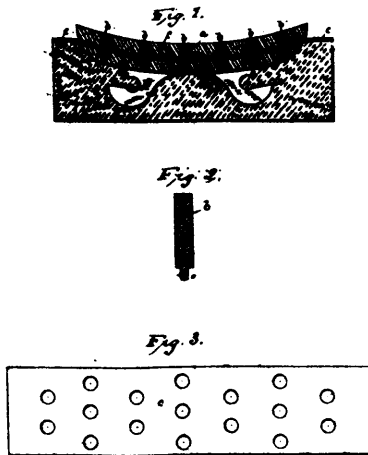
32901 Van Depoele's Carbon Contact, etc.



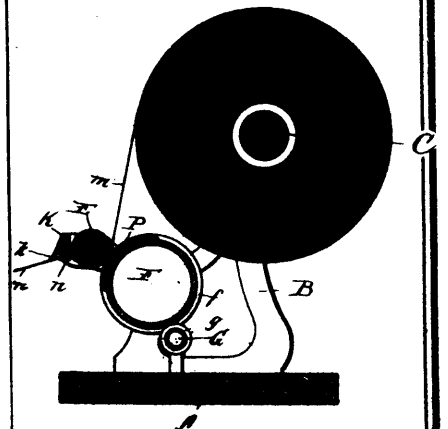
32902 Wilson's Hame Fastener.



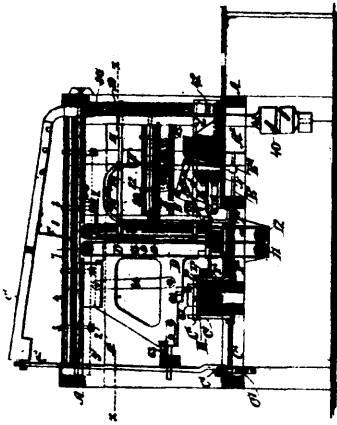
32903 Moore's Loom.



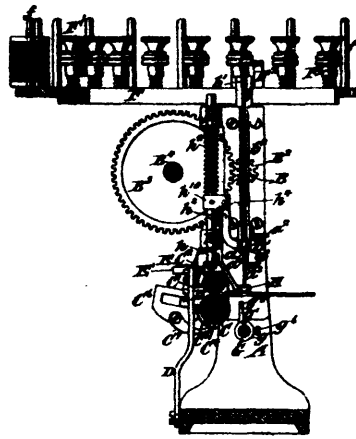
32904 Pollock's Brake Shoe.



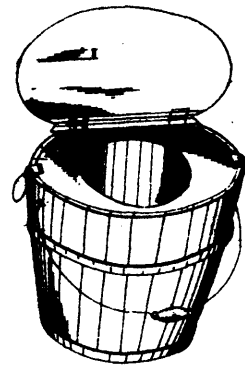
32905 Kennedy's Paper Holder, Cutter, etc.



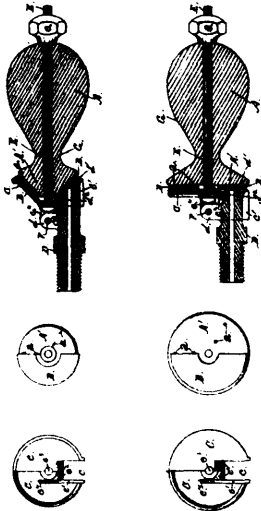
32906 Kendall's Folding Machinery.



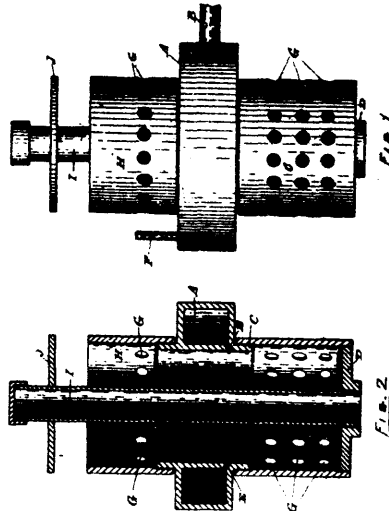
32907 Faulkner's Quilting Machine.



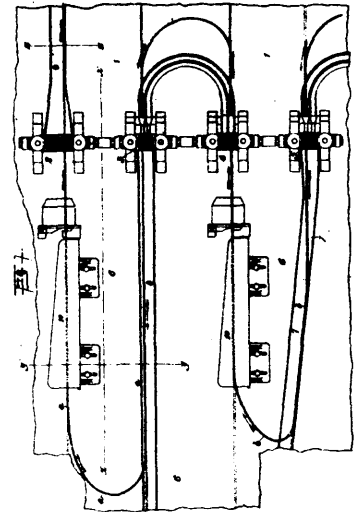
32908 Carter & Augustin's Stop Fall.



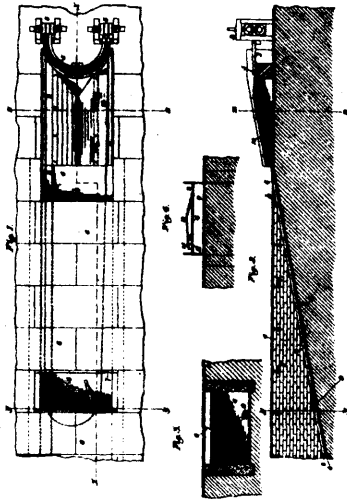
32909 Landis' Gauge Cock.



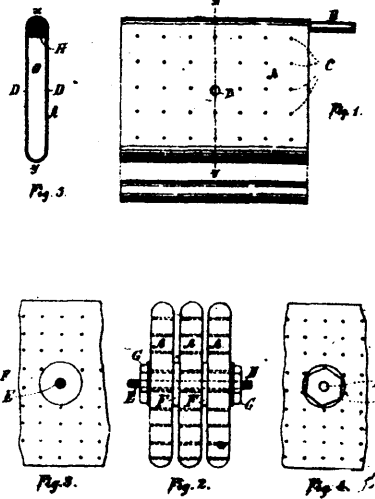
32911 More's Hydro-Carbon or Crude Petroleum Burner.



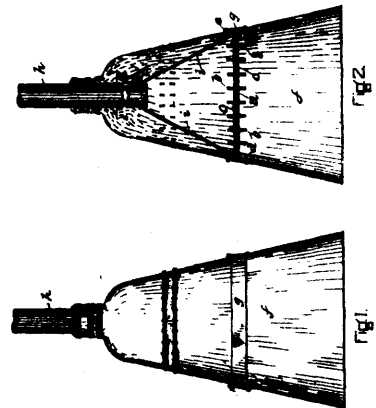
32912 Roberts' Rod Mill.



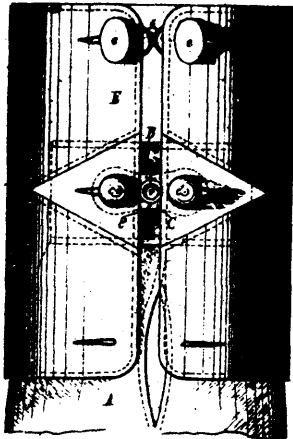
32913 Roberts' Wire Rod Mill.



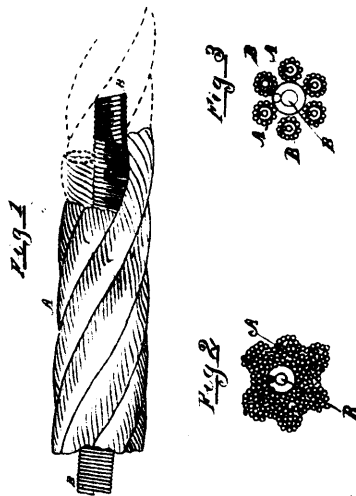
32914 Carpenter's Electric Storage Battery.



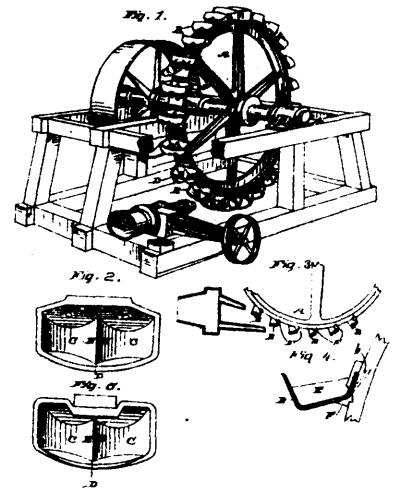
32915 Eichhorn's Broom Class.



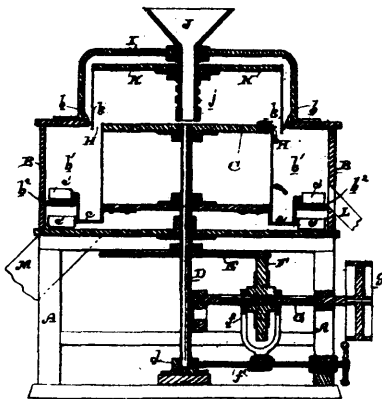
32916 Symonds' Cuff Adjuster.



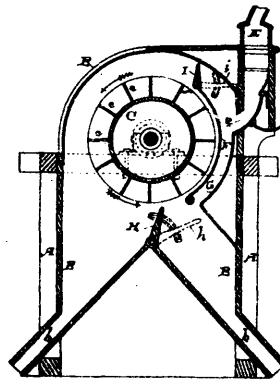
32917 Herald's Wire Rope, etc.



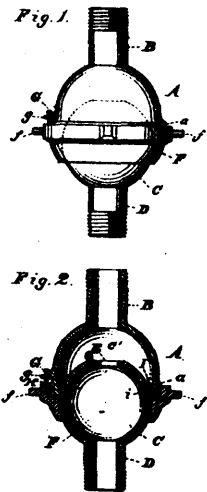
32918 Pelton's Water Wheel.



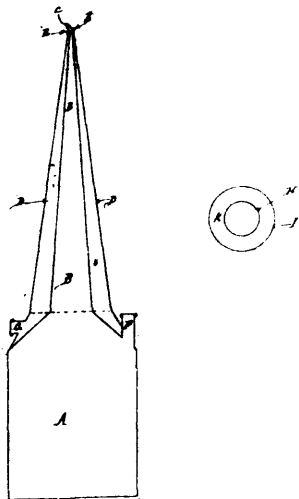
32919 Finch's Separator.



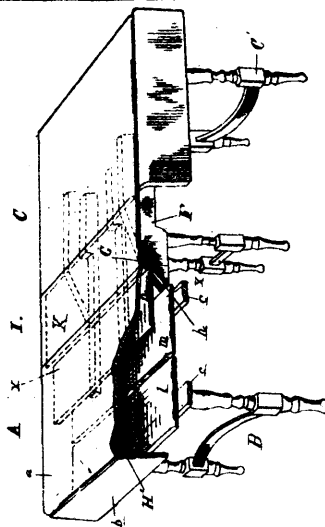
32920 Finch & Cross' Separator.



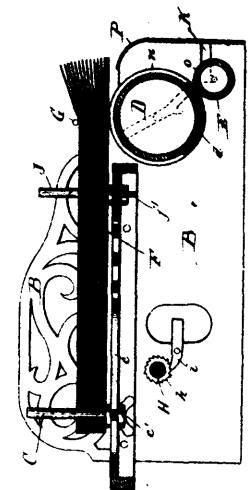
32921 Moran's Joint Coupling.



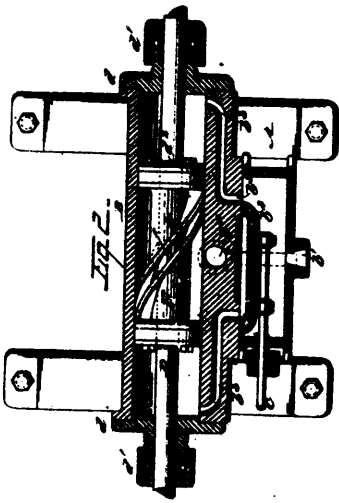
32922 Price's Oil Feeder.



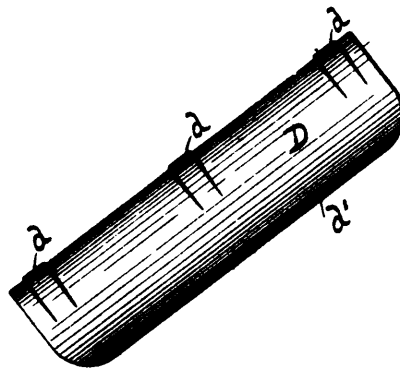
32923 Williams & Munz's Extension Table.



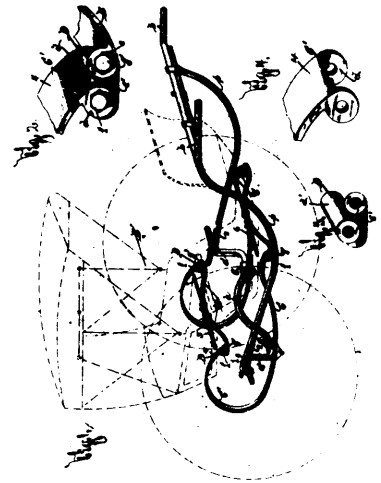
32924 Kennedy's Paper Bag Holder.



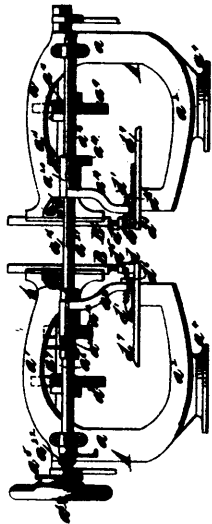
32925 Edgerton's Steam Engine.



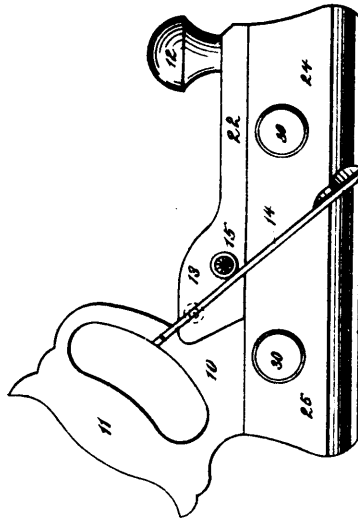
32926 Beach's Roller Shade Holder.



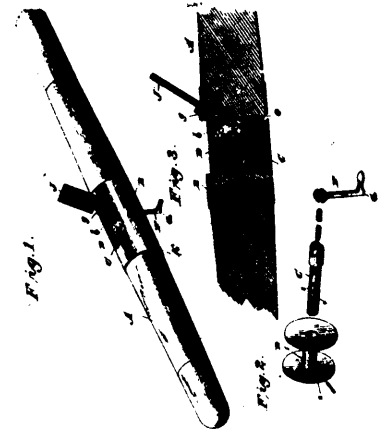
32927 Geddes' Vehicle.



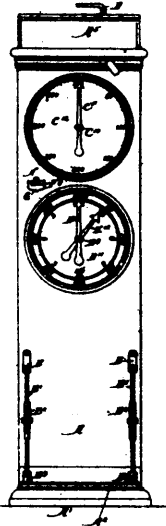
32928 Faulkner's Platting Attachment for Sewing Machines.



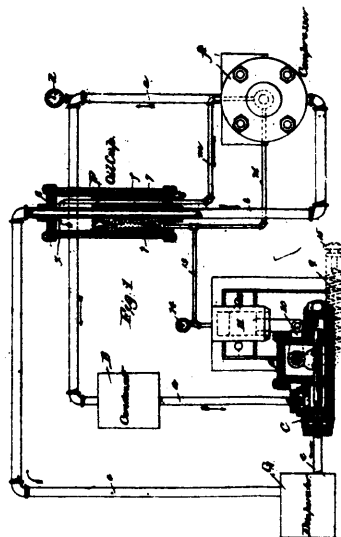
32930 Johnson's Moulding Plane.



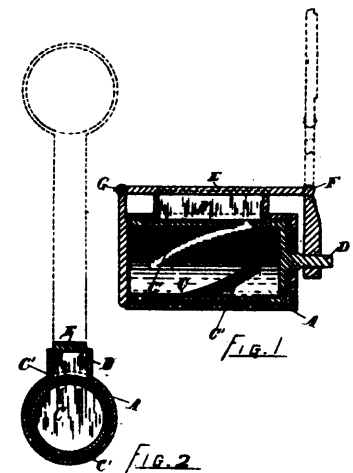
32931 Kepler's Reel for Fishing Rods.



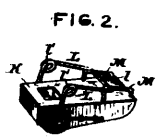
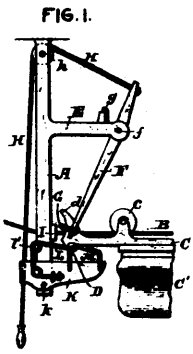
32932 Colby's Coin Controlled Testing Machine.



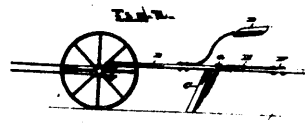
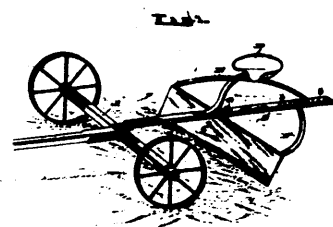
32933 Winkler's Refrigerating Machine.



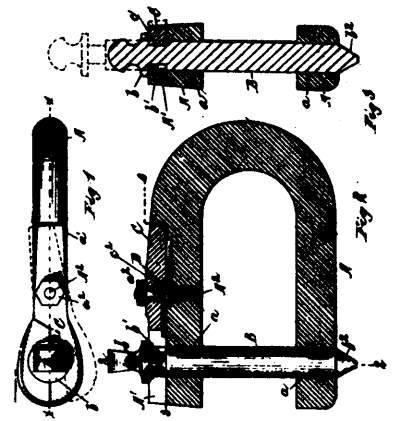
32934 Côté's Tobacco Cutter.



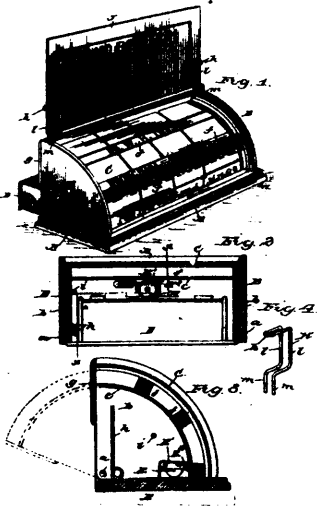
32935 Haight's Store Service Apparatus.



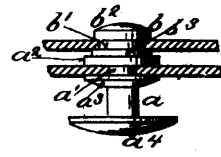
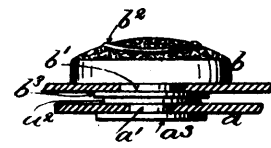
32936 O'Hare's Road Scraper.



32937 McVicker's Clevis.



32938 Rood's Show Case.



32939 Milligan's Collar and Cuff.

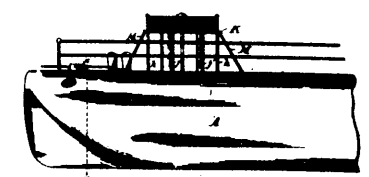
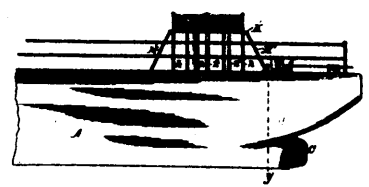
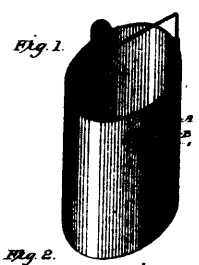


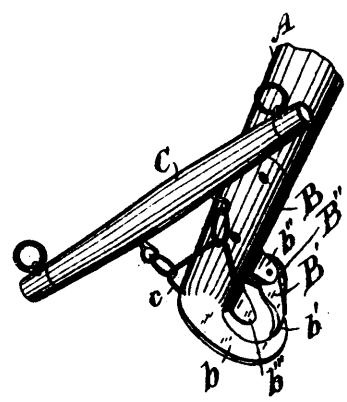
Fig. 1.



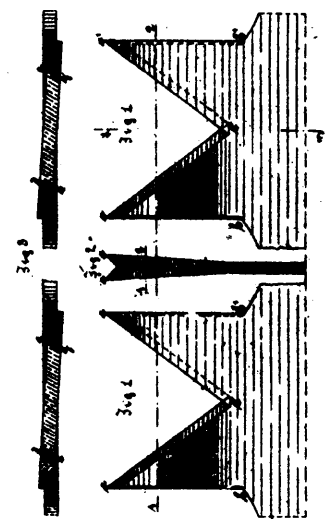
32940 McDougall's Tow Boat.



32942 Leavett's Handle for Metallic Vessels.

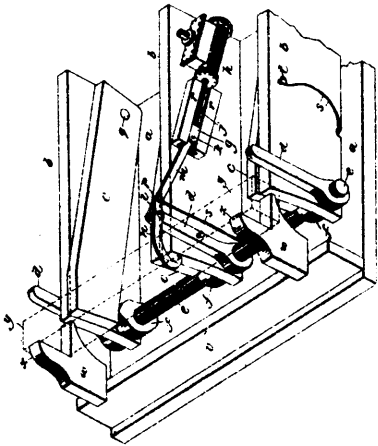


32943 Andress' Neck Yoke Fastener.



32944 Mersing's Veneer Saw.





32945 Simonson's Log-Lifting and Turning Machine.

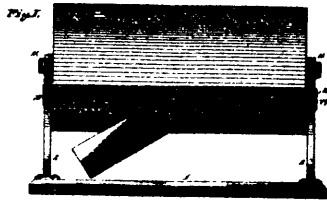


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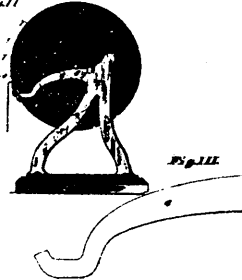


Fig. II.

32946 Ehrlich's Paper Cutter.

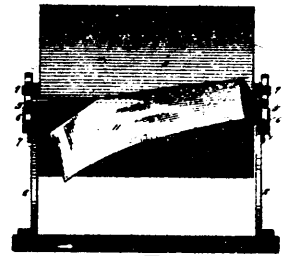
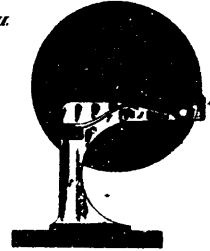
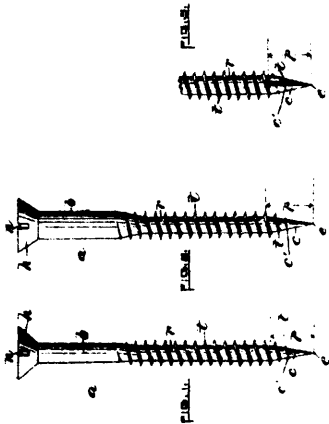


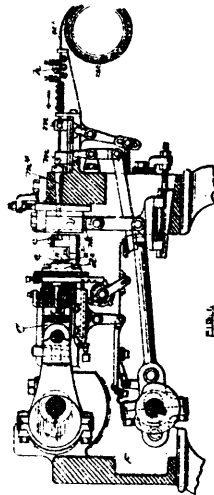
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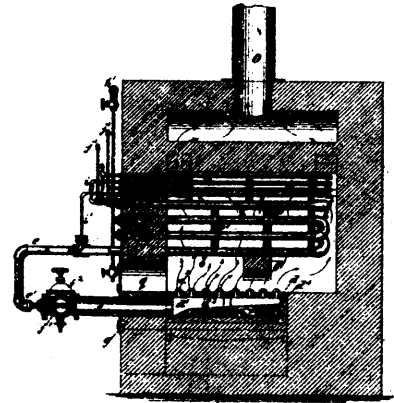
32947 Ehrlich's Paper Cutter.



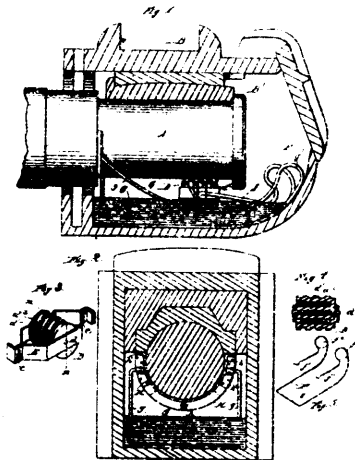
32948 Rogers' Wood Screw.



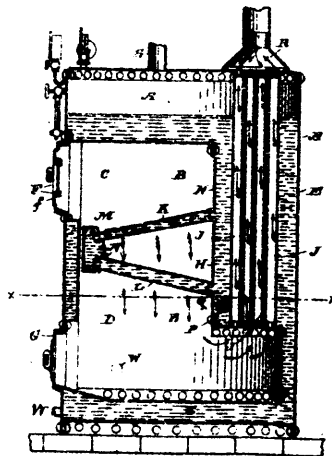
32949 Rogers' Horse Shoe Nail.



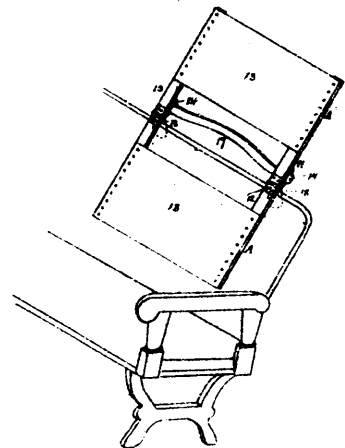
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32951 Howard's Car Axle Lubricator.



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