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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. 31,212. Cover for Bricks while in Hacks. (*Couverture pour les briques en camion.*)

Edward New, Hamilton, Ont., 1st May, 1889; 5 years.

Claim.—1st. In a cover for bricks while in hacks, the framework A provided with the longitudinal supports B, B, the folding hinged covers c hinged at a and b, the suspension cords D, in combination with the adjusting cord e, weight G, and the pulley F, substantially as and for the purpose hereinbefore set forth. 2nd. In a cover for bricks while in hacks, the combination, with the frame A, of the supports B, B, the crank H, pulleys I and F, endless cord J, adjusting cords e, e₁ and e₂, weight G, folding covers c hinged to frame, and the suspension cords D, substantially as and for the purpose hereinbefore set forth.

No. 31,213. Book Rack. (*Bois de bibliothèque.*)

Sylvanus J. Talbot, Milford, N.H., U.S., 1st May, 1889; 5 years.

Claim.—1st. A book rack consisting of the combination of upper and lower shelves A and C having corner holes, one or more intermediate shelves B, provided with end slots b, corner posts D having dowelled portions d, d₂, and reduced portions d₁, screw-threaded end rods E, and clamping pieces G and H, substantially as and for the purposes described. 2nd. A book rack, consisting of the combination with perforated shelves, of solid corner posts D having dowelled ends d₂ flush with the outer surface of one of the shelves, dowelled ends d₁ projecting beyond the outer surface of the other of said shelves, screw-threaded end rods E, lower clamping pieces G and upper clamping pieces H provided with holes d₃, substantially as and for the purposes described.

No. 31,214. Disk Harrow and Pulverizer. (*Herse brise-motte à disques.*)

Edward C. Boyer, Dayton, Ohio, U.S., 1st May, 1889; 5 years.

Claim.—1st. The combination of beams C, C having slotted lugs D, D, and the tongue A provided with a bolt G, substantially as described. 2nd. The combination of the tongue A, beams C, drag-bars P, P₁, and levers, substantially as and for the purposes described. 3rd. The combination, with the beams C, the hangers L, the divided journal-boxes M, the clips N, and the gang-shafts, as and for the purpose described. 4th. The combination, with the standards L provided with eyes at their lower ends, of the drag-bars P, P₁ attached to these eyes, as and for the purpose specified. 5th. The combination, with the tongue A, and the depending hanger A₁ supporting the ball B₁, of the gang-shafts, as and for the purpose set forth. 6th. The combination of the two opposing gang-shafts provided with the spiral cutters G₁, and the concavo-convex disks D₁ upon the inner ends of the gang-shafts, as described. 7th. A gang-shaft provided with disks G₁ having spiral cutting edges, as and for the purpose described. 8th. The combination of the tongue A, the two opposing gangs, and the depending curved covering blade J, as and for the purpose described.

No. 31,215. Hydro-Carbon Vaporizer and Burner. (*Appareil évaporatoire et brûleur à hydro-carbures.*)

Lysander Mathews, James M. Mathews and Rufus P. Mathews, Minneapolis, Minn., U.S., 1st May, 1889; 15 years.

Claim.—1st. The combination, with the retort pipe and the burner pipe, of the supply pipe connected with said retort pipe, and a suitable packing 8 arranged in the interior of said supply pipe, substantially as described. 2nd. The combination, with the retort pipe 9,

and the burner pipe 13 arranged beneath said retort pipe, and provided with the burners 15, of the curved deflectors 17 mounted upon said pipe 9, and adapted to be moved around said pipe or longitudinally thereon, substantially as described. 3rd. The combination, with the retort pipe 9, and the burner pipe 13 provided with the series of burners 15 upon the top thereof, and the burner 21 arranged upon the side of said pipe 13, and provided with the cut-off valve 23, substantially as described. 4th. The combination, with the retort pipe having a burner opening, of the sliding sleeve 25 arranged upon said pipe, and adapted to close said opening, and provided with the clamping screw 27, substantially as described.

No. 31,216. Boot and Shoe Vamp. (*Empeigne de chaussures.*)

Joseph Fortin, St. Henri, Que., 1st May, 1889; 5 years.

Résumé.—Le procédé et la manière de faire une empeigne de chaussures d'un seul morceau et sans couture, avec soudure solidifiée par deux rivets sur le cou-de-pied.

No. 31,217. Bag-Holder. (*Accroche-sac.*)

John K. Fiske, (assignee of Charles W. Allen, the assignee of William R. Burrage), Toronto, Ont., 1st May, 1889; 5 years.

Claim.—1st. The combination, with the frame of a bag-holder, of studs independently adjustable upon the frame, and adapted to disengage the mouth of the bag supported by the frame, substantially as and for the purpose specified. 2nd. As an improved bag-holder, a frame provided with means for suitably supporting it, and with a fixed upward projection for holding one side of the mouth of the bag, and with studs independently adjustable for holding the opposite side of the mouth of the bag, substantially as and for the purposes specified.

No. 31,218. Bag-Holder. (*Accroche-sac.*)

John K. Fiske, (assignee of Charles W. Allen), Toronto, Ont., 1st May, 1889; 5 years.

Claim.—A bag-holder consisting of an open three-sided frame having parallel sides, each held by a movable bracket having a downward projecting conical jaw with a hooked limb, said jaw adapted to engage a support adjustably, and said bracket having upward projecting blunt studs adapted to engage the rim of a bag, substantially as set forth.

No. 31,219. Boiler. (*Chaudière.*)

Rosina L. Moore, (assignee of Hollis W. Moore), Olean, N.Y., U.S., 1st May, 1889; 5 years.

Claim.—1st. The vertical portion consisting of sections bolted together, and having the transverse connecting tubes a and the hollow threaded bosses, the tubes B having the closed outer ends, and the grate, substantially as specified. 2nd. The combination of the sections consisting of the tubes a, the transverse connecting tubes, and the internally threaded hollow bosses, the rods having the beaded end, and the threaded end, the nut thereon, the plates having the opening for the rod, the horizontal tubes closed at their outer end, and the opposite end engaging the bosses, the grate, the water feed pipe, and the steam pipe, substantially as specified. 3rd. In a boiler, the combination, with the tubes, of the ratchet-shaped diaphragm, substantially as specified. 4th. In a boiler or steam generator, in combination with the tubes, the plugs provided with the transverse conical opening, the larger end facing the vertical portion of the generator, substantially as specified. 5th. In combination with the horizontal tubes of a boiler, the longitudinal ratchet-shaped diaphragm, and the plugs having the threaded portion to engage threaded openings through the wall of the tube, and having the end within the tube provided with the conical opening, substantially as specified.

No. 31,220. Shirt Wrist Band. (*Poignet de chemise.*)

William E. Howell, Charles H. Connell and Thomas E. Brain, Los Angeles, Cal., U.S., 1st May, 1889; 5 years.

Claim.—The combination of the double wristband provided with the four button-holes c, c, c₁, c₂, and the sleeve provided with the

slit and having its end attached to one side of the double wristband between the button-holes *c*, *e* and *ct*, *cr*, and provided with an opening *D* in the outside lap of the slit, arranged at such a distance from the point of attachment of the sleeve with the wristband, that when the wristband is folded upon the outside of the sleeve, the button-holes in the wing of the wristband folded against the sleeve will coincide with the opening *D*.

No. 31,221. Tailor's Button Hole Cutter.
(*Ciseaux à boutonnières.*)

Elizabeth Barry, Hamilton, Ont., (assignee of John B. Barry, Jr., Chicago, Ill., U.S.), 1st May, 1889; 5 years.

Claim.—1st. In a tailor's button hole cutter, the combination with the handles *A*, *B*, of the cutter *d*, and the punch *E*, substantially as and for the purpose specified. 2nd. The combination, of the cutter *d*, and punch *E* constructed to revolve on the outer end *e* of the upper jaw, and tightened by a thumb screw *F*, substantially as and for the purpose specified. 3rd. The combination, of the cutter *d*, punch *E*, thumb screw *F*, barrel *e*, and handles *A*, *B*, substantially as and for the purpose specified. 4th. The combination of the cutter *d*, punch *E*, handles *A*, *B*, *e*, adjusting screw *k*, spring *G*, substantially as and for the purpose specified.

No. 31,222. Fruit Jar. (*Jarre à fruits.*)

George C. Sawyer, Canton, N.Y., U.S., and Robert M. Stocking, Québec, Qué., 1st May, 1889; 5 years.

Claim.—1st. The jar having the overhanging lip *E*, provided with the apertures *F*, *F* through the same, in combination with the cover arranged in the mouth of the jar, and provided on its upper side with the post *J*, and the double semi-annular inclines *H*, *H*, and the revolving locking arm *U* adapted to a lateral movement around said post, and to engage at its extremities under the said overhanging lip, and the bail *Z* mounted at its ends upon the upper side of said locking arm, substantially as and for the purposes specified. 2nd. The combination, with the jar having the lips *E*, of the cover having the double inclines *H*, *H*, the post *J*, and the locking arm *U* having the bail *Z*, and the centre hole *V* mounted around the post *J*, and adapted to engage at its ends under the lips *E*, substantially as and for the purposes specified. 3rd. The jar having interior overhanging lip at its upper edge, provided with the apertures *F*, *F*, in combination with the cover arranged in the mouth of the jar, and provided upon its upper side with a double inclined ring or flange *N*, and the post *J* in the centre, and the locking arm provided with the bail *Z* adapted to engage around the post *J*, and bearing on the inclined ring or flange *N*, and engaging under the overhanging lip, and capable of a lateral vertical motion, whereby the locking arm moves laterally and vertically as it slides upon the inclined ring or flange, substantially as and for the purpose hereinbefore set forth.

No. 31,223. Tree Transplanting Waggon.
(*Efourceau pour transplanter les arbres.*)

William A. Estes, Vassalboro', Me., U.S., and Frederick W. Watson Toronto, Ont., 1st May, 1889; 5 years.

Claim.—1st. In a tree transplanting waggon, the combination, with the front truck, and a platform connected thereto, of the rear truck having a vertical gate capable of being adjusted, and carrying a rearwardly extending lever, substantially as and for the purpose specified. 2nd. The combination, with the rear truck and its axle, of a gate or tree support capable of being adjusted vertically with relation to said axle, of a lever having saddles or supports thereon for the tree trunk, said lever being rigidly connected to said adjustable gate and adapted to move therewith, substantially as and for the purpose specified. 3rd. The combination, with the rear truck, and gate *D* connected thereto, of the saddle *F*, lever *E* having saddle *E*, and rigid connections between said lever and said gate, substantially as specified. 4th. The combination, with the axle of the rear truck, and with the adjustable gate *D*, of the springs *cs*, for the purpose specified. 5th. The combination, with the rear truck having frame *k* connected thereto, of the winding drums *K*, *K*, chains *G*, *G*, and platform *B*, substantially as and for the purpose set forth. 6th. The combination, with the front truck *A*, and its axle, of the fifth-wheel *Ar*, straps *bx*, *bx*, platform *B* and bolts therefor, arranged as specified.

No. 31,224. Air Injecting Device for Boiler Furnaces. (*Injecteur d'air pour les fourneaux des chaudières.*)

The Natural Gas Fuel Company (assignee of Elijah B. Cornell), Philadelphia, Penn., U.S., 1st May, 1889; 5 years.

Claim.—1st. In combination with a boiler furnace, or fire box *A*, a gas generator *C*, the inlet and outlet ports *e*, *c*, a pipe connection between the boiler and gas generator, and an air injector *E* and restricted pipe connection *d*, substantially as shown and for the purposes set forth. 2nd. In combination with a boiler furnace, or fire box, a gas generator *C* located therein, and provided with a restriction *b*, a pipe connection having out off *bx* between boiler and gas generator, and an air injector *E* having restricted pipe *d* with outlet ports of the gas generator, substantially as set forth. 3rd. In combination with a boiler, a furnace, a gas generator, a pipe connection *B*, an air injector *E* and a pipe connection *d*, as described and set forth. 4th. The combination of a boiler furnace *A*, a steam pipe, a gas generator *C* connected with said pipe and with the ash-pit *H*, by restricted pipe connection *D*, substantially as set forth and for the purposes herein described.

No. 31,225. Machine for the Manufacture of Rosettes and Similar Ornaments in Wood. (*Machine à fabriquer les rosettes et ornements semblables en bois.*)

James McElroy and William Stewart, Toronto, Ont., 1st May, 1889; 5 years.

Claim.—1st. The table *C* supported on the springs *E*, and having a hole *l* made in it immediately over the revolving cutter head *A*, in combination with a vertical spindle *J* fitting in bearings formed on the standard *K*, and operated by the pivoted weighted lever *L*, substantially as and for the purpose specified. 2nd. The table *C* supported by the springs *E*, and having a hole *l* in *vs* in it immediately over the revolving cutter-head *A*, the adjustable clamps *H*, placed one on each side of the hole *l*, the adjustable stops *G* located below the table *C*, in combination with the vertical spindle *J* fitting in bearings formed on the standards *K*, and operated by the pivoted weighted lever *L*, substantially as and for the purpose specified.

No. 31,226. Plough Clevis. (*Volée de charrue.*)

The Cookshutt Plough Co., L.D. (assignee of John Challen), Brantford, Ont., 1st May, 1889; 5 years.

Claim.—A reversible plough clevis *D*, having the butments *E*, made solid with the clevis, the jaws *B*, *B*, having oval raises on their faces, to which the butments *E*, *E* join, and are held there by the bolt *C* passing through the jaws *B*, *B*, the brace *F*, for the purpose of bracing the reversible plough clevis, all substantially as shown and for the purpose hereinbefore set forth.

No. 31,227. Car Coupling. (*Attelage de chars.*)

Benjamin G. Harris (assignee of Simon Fairman), Baltimore, Md., U.S., 1st May, 1889; 5 years.

Claim.—1st. A coupling head for cars, composed of a fixed part *A*, having a shoulder *a*, and a part *B* hinged thereto, having a cavity fitting over the fixed part, a shoulder corresponding to the shoulder *a*, and a rear weighted arm, all substantially as described. 2nd. A coupling head for cars, composed of a fixed part having a shoulder *a*, and a part *B* hinged thereto, having a cavity fitting over the fixed part, a shoulder corresponding to the shoulder *a*, and a rear weighted arm, in combination with a link having arrow-head shaped ends and the additional half-heads *e*, substantially as described.

No. 31,228. Harness Buckle.

(*Boucle de harnais.*)

George P. Cole, Johnstown, N.Y., U.S., 2nd May, 1889; 5 years.

Claim.—1st. The combination, with a buckle body *A*, provided with the slotted web *e*, of the slotted wedge *B* and the buckle tongue *C*, having the shank *j* inserted in the slots of the said wedge and web, substantially as shown and described. 2nd. The combination, with the buckle body *A*, having its ends curved in opposite directions, and provided with the slotted web *e*, substantially as described, of the slotted wedge *B*, provided with a stud *i*, and the buckle tongue *C* having the shank *j*, and furnished with the shoulder *l* and nut *k*, substantially as shown and described.

No. 31,229. Coffee or Tea Pot.

(*Cafetière ou théière.*)

Luther S. Wright, Groton, N.Y., U.S., 2nd May, 1889; 5 years.

Claim.—The combination with the pot *A* and lid *B* hinged thereto, of the handle *D* fastened at both ends to the pot, and provided with the slot *a*, and the lever *C*, rigidly secured to the lid passing through the aforesaid slot, and curved to correspond to the under side of the handle and lie in proximity thereto when the lid is closed.

No. 31,230. Cooking Utensil.

(*Ustensile de cuisine.*)

John H. Fredericks, Lock Haven, Penn., U. S., 2nd May, 1889; 5 years.

Claim.—1st. As a new article of manufacture, a culinary vessel, having a double bottom, and an interposed sheet of non-combustible material secured at its circumferential edge between the lower bottom and the vessel, substantially as described. 2nd. As a new article of manufacture, a culinary vessel provided with the double bottom and double lower sides, and having an interposed sheet of non-combustible material secured at its circumferential edge, between the double side and the vessel, and covering the bottom and part of the sides of the latter, substantially as described.

No. 31,231. Cutting, Grooving and Beveling Wood to form Board Staves and the like, and Machinery therefor. (*Taillage, cannelage et biseautage du bois pour faire des planches, des douves et des articles semblables et machinerie pour cet objet.*)

Gustave A. Oncken, Frankenthal, Germany, 2nd May, 1889; 5 years.

Claim.—1st. The mode of cutting a continuous board from a rotating block or log of wood, by setting a vertical knife, which is continually displaced towards the axis of rotation of the wood, and also the rotating wood itself in horizontal oscillations upon different centres, substantially as and for the purpose specified. 2nd. In a machine for cutting a continuous board from a rotating block or log of wood in the manner as claimed, before the combination of the eccentrics *k*, *kr*, the bearings *i*, *i* and the frame *f* supporting the knife, substantially as and for the purpose set forth. 3rd. In a machine for cutting a continuous board from a rotating block or log of wood, the combination of the knife *a* and the pressure strip *k* in such a manner that the upper edge of the latter, the cutting edge of the knife, and the axis of rotation of the wood are lying in one plane, and the rear surface of the knife to be ground concave after a cylindrical surface, the axis of which being placed in the same plane, as aforesaid. 4th. In combination, with the knife, of a machine for

cutting a continuous board from a rotating block or log of wood, a yielding pressure strip *h* actuated under the tension of spring *W* by the angle-levers *S*, *V* and *T*, *V* nut *W*1, screw *W*2 and hand-wheel *W*3, substantially arranged as and for the purpose set forth. 5th. In combination with a machine for cutting a continuous board from a rotating and horizontally oscillating block or log of wood, the devices for cutting the lateral chime and chamfer, substantially as specified.

No. 31,232. Saw Mill Dog.

(*Clameau de scierie.*)

John Flesher, Edgington, Ont., 2nd May, 1889; 5 years.

Claim—In a saw mill dog, the combination, with the standard *A* and guide-post *B*, of the bar *C*, the pawl *D*, the lever *E*, the sleeve *F*, the bar *G* and the pawl *H*, all formed substantially as shown and described.

No. 31,233. Attachment for Pin and Link Car Couplers. (*Appareil d'attelage des chars à cheville et chaînon.*)

William L. Dwyre, Albany, Ore., U.S., 2nd May, 1889; 5 years.

Claim—The combination, with the draw-head of a car coupler, of a casing, a coupling pin, a movable bolt, a bent lever, a movable block and means for moving said block, all formed substantially as shown and described.

No. 31,234. Window Glass Setting.

(*Vitrage des croisés.*)

John V. Auth, Pittsburgh, Penn., U.S., 2nd May, 1889; 5 years.

Claim—The combination of the window sash, grooved, as described, a window glass, the rubber tubing *C* slotted longitudinally and applied to the edges of the glass, and the strips *b* confining the rubber and glass in the groove of the sash, substantially as specified.

No. 31,235. Rack for Agricultural Tools.

(*Râtelier pour les instruments aratoires.*)

Frank A. Herrick, Jackson, Mich., U.S., 2nd May, 1889; 5 years.

Claim—An agricultural tool rack, consisting of the standards *A*, the brackets *E* and *F*, the forks *G*, *H*, the legs *J*, the arms *I*, the bands *M*, the rods *N* and arms *O*, all formed, arranged and combined substantially as and for the purpose set forth.

No. 31,236. Lamp or Gas Boiler and Heater.

(*Cuisinière à lampe ou à gaz.*)

Montagu A. B. Shipman, Toronto, Ont., 2nd May, 1889; 5 years.

Claim—A lamp or gas boiler, consisting of reservoir *B*, the inner casing *A*, which forms the chimney, in combination with a lamp or gas jet, substantially as and for the purpose hereinbefore set forth.

No. 31,237. Machine for Cutting Peas.¹

(*Machine à arracher les pois.*)

John Ney, Ellice, Ont., 2nd May, 1889; 5 years.

Claim—The combination of the lifter *A* and the shoe *B*, substantially as and for the purpose hereinbefore set forth.

No. 31,238. Self-Lubricating Crank Pin.

(*Bouton de manivelle à graissage automatique.*)

Gardner R. Parker, Worcester, Mass., U.S., 2nd May, 1889; 5 years.

Claim—The combination, with the crank disk or arm, and a connecting rod *8*, having the end *7* provided with an oil-tube *10*, of the crank-pin *3* of the same external diameter, and having a central chamber *4*, and an oil feed hole *5* therein, the position of said feed hole corresponding to the position of said oil-tube for the introduction of oil into said chamber *4*, and a bolt *6* for closing the outer end of the chamber *4*, and a washer for holding the end of the connecting rod upon the crank-pin *3*, substantially as shown and described.

No. 31,239. Car-Coupling. (*Attelage de chars.*)

Abraham Diller and Joseph W. White, Brighton, Iowa, U.S., 2nd May, 1889; 5 years.

Claim—1st. In a car-coupling, the combination, with the draw-bar, of the hook-shaped coupling pin, and the latch on the under side of the drawhead for holding it in place removably, substantially as and for the purpose set forth. 2nd. In a car-coupling, the combination of the drawhead, pivoted link or bail, hook-shaped coupling-pin, and vertically sliding uncoupling-rod provided at its lower end with a forked arm adapted to lift the bail off the hook, substantially as and for the purpose set forth. 3rd. In a car-coupling, the combination, of the drawhead, pivoted link or bail, hook-shaped coupling-pin vertically sliding uncoupling-rod provided at its lower end with a forked arm projecting at right angles, and the spring actuated latch or keeper affixed to the uncoupling-rod and overlapping the inner end of the link with its free end, substantially as and for the purpose shown and set forth.

No. 31,240. Hot Water Furnace.

(*Calorifère à eau.*)

Ulric Beaupré, Montréal, Qué., 2nd May, 1889; 5 years.

Claim—1st. In a hot water furnace, a fire-box section *E*, provided with a fire-box *L* having the pieces *M*, projection *s*, and ports or openings *I* and *J*, substantially as described and for the purposes set forth. 2nd. In a hot water furnace, a section *N* provided with the

openings *Q*, partitions *R*, channels *t*, projection *S* provided with the ports or openings *V* and *W* and *X*, substantially as described and for the purposes set forth. 3rd. In a hot water furnace, a section *Y* provided with the openings *c*, partitions *d*, channels *F*, projection *e*, provided with the ports or openings *g*, *h* and *i*, substantially as described and for the purposes set forth. 4th. In a hot water furnace, the use of the projections *g* and grooves *r*, substantially as described and for the purposes set forth. 5th. In a hot water furnace, the combination of the fire-box section *E*, with the sections *N* and *Y*, intake pipe *H*, delivery pipe *u*, and cover *At*, substantially as described and for the purposes set forth.

No. 31,241. Device for Securing Wire to Railroad Rails. (*Appareil pour assujétir le fil de fer aux rails des chemins de fer.*)

The American Semaphore Company, (assignee of Frederick Stitzel and Charles Weinsedel), Louisville, Ky., U.S., 2nd May, 1889; 5 years.

Claim—1st. In a device for holding wire, the end of which is to be upset, the combination, with a yoke *E*, and screw *F*, of two clamping blocks *A*, *A*, substantially as set forth. 2nd. The combination, with a yoke *E*, a screw *F* passing through an arm of said yoke, and an arm *f* of the yoke to form a bearing or support for the yoke, of two clamping blocks *A*, *A* having serrated grooves, substantially as set forth. 3rd. The combination, with a yoke *E*, a screw *F* passing through one arm of the same, and an arm *f* of the yoke forming a support or bearing for the yoke, of two clamping blocks having curved grooves, said grooves being provided with teeth or serrations *d*, substantially as set forth. 4th. In a clamping device, the combination, with a yoke *E* carrying a screw *F*, of two clamping blocks *A*, *A* having curved serrated grooves, substantially as set forth. 5th. In a clamping device, the combination, with a yoke *E*, a screw *F* passing through an arm of the yoke, a pin *n* secured in the end of the screw, and an arm *f* of the yoke forming a support or bearing for the yoke, of two clamping blocks *A*, *A* having recesses *a*, said blocks being provided with serrated grooves, and a screw-bolt *B* passing through these clamping blocks, substantially as set forth.

No. 31,242. Regulator for Dynamo-Electric Machines. (*Régulateur pour machines dynamo-électriques.*)

Joseph F. Kester and Joseph H. Briggs, Terre Haute, Ind., U.S., 2nd May, 1889; 5 years.

Claim—1st. In a regulator for an electric motor or generator, the combination, with the armature and commutator segments, of a normally open short circuit connecting two or more such segments, and a speed governor attached to a rotating part of the machine for closing said short circuit, whereby the armature coils corresponding to said segments may be thrown from the line into said short circuit when the machine reaches a definite speed. 2nd. In a dynamo or motor regulator, the combination, with a hollow extension for an armature shaft, of a circuit controller located within the extension and comprising a stationary contact, and a movable contact, and a speed governor extending from said extension and connected with and adapted to operate said movable contact of the circuit controller, substantially as described. 3rd. In a dynamo or motor regulator, the combination, of a regulating circuit controller in said circuit, and a centrifugal governor comprising a sliding weight, a hollow slotted guide for said weight extending at right angles from the armature shaft, a spring bearing on said weight, an adjusting screw for varying the tension of said spring, and a T-rod located in said guide and connecting the weight and circuit controller, substantially as described. 4th. In a regulator, the combination of the armature shaft, an extension of insulating material secured thereto, a speed governor mounted on the extension, and a circuit controller secured to the extension and connected with the governor, said circuit controller being in a regulating circuit, whereby when the machine reaches a definite speed the regulator will be brought into action. 5th. A speed governor for a generator or motor comprising a hollow slotted support or guide, a sliding weight upon the same, a spring embracing the guide and bearing upon the weight, an adjusting screw to regulate the tension of said spring upon the weight, a rod engaging the weight through the slots of the guide, and a circuit closer connected to said rod, substantially as described.

No. 31,243. Step Bearing for Shafts.

(*Crapaudine pour arbres de couche.*)

Carl A. Johansson, Stockholm, Sweden, 2nd May, 1889; 5 years.

Claim—A step-bearing for shafts in which the end of the shaft *B* is supported by a sphere resting against a fixed bolt *E*, which is surrounded by a socket or cup *C* fastened to the end of the shaft, and rotating with the same, the inner diameter of the said cup being somewhat larger than the sphere, as above specified.

No. 31,244. Hopple. (*Entrave.*)

Orange B. Fales and M. Luther Edwards, Canfield, Ohio, U.S., 2nd May, 1889; 5 years.

Claim—In a serving and kicking hopple, the combination of the collar *A*, having attached thereto the breast-strap *B*, the free end of said breast-strap having the pulley *a*, the rope *C* passing over said pulley *a*, the pulley-block *d* fixed to said rope *C* and adapted to embrace and confine the return portion of said rope *C*, the hopple composed of the strap *G*, and the elastic strap *H*, the snap-hooks *D* and *E*, and the surcingle *I*, substantially as and for the purpose specified.

No. 31,245. Seed Drill. (*Semoir en lignes.*)

Patterson & Brother Co., (assignee of John H. Downing), Woodstock, Ont., 2nd May, 1889; 5 years.

Claim—The combination, with the hooked projections *B*, *C* of a dog *E* pivoted on the pin *F* between the projections and actuated by a spring *G*, so as to hold the dog *E* against the top side of the lower projection *C*, substantially as and for the purpose specified.

No. 31,246. Wire Cloth Holder.*(Porte-toile métallique.)*

John Hosford, Monroeville, (co-inventor with William A. Tea, Clyde), Ohio, U.S., 2nd May, 1889; 5 years.

Claim.—1st. In a wire cloth holder, the combination, with a supporting frame, of spring-pressed arms adapted to receive a second roller, substantially as described. 2nd. In a wire cloth holder, the combination, with a supporting frame, of rigid arms provided with roller bearings, and spring-pressed arms also provided with roller bearings and arranged above the rigid arms, substantially as described. 3rd. In a wire cloth holder, the combination, with a supporting frame, of roller-carrying arms rigidly connected thereto, arms 24 provided with roller bearings, and springs 9 arranged in connection with said arms, substantially as described. 4th. In a wire cloth holder, the combination, with a supporting frame, of arms rigidly connected thereto, and provided with roller bearings, arms 24 formed with recesses a and b, and springs 9, which are connected to the frame and are formed with extensions which rest in the arm recesses, substantially as described.

No. 31,247. Diaper. (Toile ouvrée.)

George W. Stewart, Arthur H. Fenner and Frederick F. Jones, New York, N.Y., U.S., 2nd May, 1889; 5 years.

Claim.—As an improved article of manufacture, a diaper consisting of two superimposed sheets of fabric provided with flaps d, d and f, these superimposed sheets being secured together along a portion of their edges, the remaining portion being left open, a sheet of flexible waterproof material removably inserted between the said superimposed sheets and fastening devices, substantially as described.

No. 31,248. Brush. (Brosse.)

Louis Strickel, Detroit, Mich., U.S., 3rd May, 1889; 5 years.

Claim.—1st. The improved brush herein described, consisting of a solid head formed of a single integral piece, and provided intermediate its ends with a series of parallel elongated sockets closed at their extremities, having in combination therewith, fibre secured in said sockets by a corresponding series of elongated staples, the extremities of said head provided with annular sockets having fibre stapled therein, all substantially as and in the manner described. 2nd. The improved brush herein described, consisting of a solid head formed of a single integral piece, and provided intermediate its ends with a series of parallel elongated sockets closed at their extremities, having in combination therewith, fibre secured in said sockets by a corresponding series of elongated staples, the extremities of said head provided with slanting end sockets having fibre stapled therein, the fibre in said end sockets projecting in a slanting direction outward from the head, all substantially as and in the manner described. 3rd. The improved brush herein described, consisting of a solid head formed of a single integral piece provided intermediate its ends with a series of elongated sockets a, having in combination therewith fibre B secured in said sockets by corresponding elongated staples C, the extremities of said head provided with slanting end sockets having fibre stapled therein, the surrounding edges of the head being intact, the construction being such that the intermediate fibre shall extend straight downward from the head, and the fibre in the end sockets shall project outward therefrom in a slanting direction, substantially as described.

No. 31,249. Saw-Set for Setting the Teeth of Circular Saws. (Tourne à-gauche.)

Samuel J. Laughlin, Guelph, Ont., 3rd May, 1889; 5 years.

Claim.—1st. The combination of saw-rest B, and cone nut D, and round upright support c, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of steel setting parts E and A, and spring F which adjust bolts G, and frame A, substantially as and for the purpose hereinbefore set forth.

No. 31,250. Punching Machine. (Machine à percer.)

Julius A. N. Rasmussen, Copenhagen, Denmark, 3rd May, 1889; 5 years.

Claim.—1st. A machine for the punching of nail holes in horse shoes with a support or working table, which can turn round a horizontal axis which is placed perpendicular below the punch or top stamp, in which table the bottom stamp is placed with the hole in its top side lying in the mentioned axis. 2nd. A punching machine for the punching of nail holes in horse shoes, with a working table which can revolve round a horizontal axis, which is placed perpendicularly below the top stamp, and which table grasps a fixed stand, in which the bottom stamp is so placed that the punch hole in its top side is situated in or only a little above the horizontal axis of the working table, all otherwise as above described and shown on the accompanying drawing.

No. 31,251. Railway Cattle Guard.*(Garde bétail de chemin de fer.)*

James T. Hall, St. Louis, Mich., U.S., 4th May, 1889; 5 years.

Claim.—1st. A railway cattle guard consisting of wooden strips suitably secured together, each having in its upper edge, a saw kerf or groove, and strips of thin metal set on edge in the slots in the wooden strips, substantially as described. 2nd. In a railway cattle guard, the combination of the strips of wood W, secured together by the rods B, and intervening blocks or sleeves with metal strips I set on edge in a saw kerf in the upper edges of said wooden strips, substantially as shown and described.

No. 31,252. Potato Planter. (Semoir à patates.)

Alfred W. Black, Traverse, Mich., U.S., 4th May, 1889; 5 years.

Claim.—A planter consisting of the outwardly-flared jaws of rectangular shape, with their sides extended at right angles thereto, and

inclined upon the inner edges from near the centre downward flush with the bottom edges of said jaws, and which sides are pivoted together near their upper edges, one of said jaws having a handle, and the other jaw having a horizontal outwardly-extending gauge-arm, substantially as specified.

No. 31,253. Soldering Machine.*(Machine à souder.)*

Edward J. Dolan, Philadelphia, Penn., U.S., 4th May, 1889; 5 years.

Claim.—1st. A soldering instrument consisting of a number of separate bodies affording capillary interstices for the passage of molten solder, substantially as described. 2nd. In a soldering machine, a solder feeder composed of a plurality of wires, substantially as described. 3rd. In a soldering machine, a syphonic solder feed formed of a plurality of wires, substantially as described. 4th. A solder feed consisting of a number of separate bodies arranged in the form of a syphon, and affording capillary interstices for the passage of molten solder, substantially as described. 5th. In a soldering machine, a capillary syphonic solder feed formed of a plurality of wires compressed, substantially as and for the purpose specified. 6th. The combination with the solder holder of a plurality of wires, a plate for holding said wires against said holder, and means for holding said plate against the wires, substantially as and for the purpose specified. 7th. The combination, with the solder holder and the longitudinal bars above the same, of the plate, the wires between the plate and the holder, and keepers for holding said plate in position, substantially as described. 8th. The combination, with the solder holder, and the longitudinal bars above the same, of the plate, the plurality of wires between the plate and the holder, and the wedges between the plate and said bars, substantially as described. 9th. A solder feed composed of a number of separate bodies, affording capillary interstices for the passage of molten solder, with one end forming the point of the soldering iron, substantially as described. 10th. A combined syphonic solder feeder, and iron formed of a plurality of separate bodies arranged near each other, and affording capillary interstices for the passage of molten solder, substantially as described. 11th. In a soldering machine, a solder feeder composed of a series of wires arranged in the form of a syphon, one end of the wires forming the point of the soldering iron, substantially as described. 12th. In a soldering machine, a solder holder combined with a soldering iron, consisting of a series of wires having one end in said holder, and the other end extended to the position of the parts to be soldered, substantially as described. 13th. In a soldering machine, a combined capillary solder feeder and iron, formed of a plurality of wires, substantially as and for the purpose specified.

No. 31,254. Mould for Casting. (Moule de fonderie.)

Francis D. Taylor, Brockville, Ont., 4th May, 1889; 5 years.

Claim.—1st. As a new article of manufacture, a lining for moulds for casting metal, composed of a mixture of pulverized peroxide of iron and wood pulp, substantially as described. 2nd. A mould composed of an inner shape formed of a mixture of pulverized peroxide of iron and wood pulp, and a backing of moulding sand or like material, substantially as described. 3rd. The mixture of wood pulp, and pulverized iron ore for the de-carbonization of iron, substantially as described.

No. 31,255. Car Brake. (Frein de char.)

Henry C. Fietemeyer, Lafayette, Ind., U.S., 4th May, 1889; 5 years.

Claim.—1st. The combination of an oscillating bar G provided with a series of perforations h, and the weight Q or spring R, with the link H, the brake chain I, the series of levers C, K, M, and the racks and guards for said levers, substantially as specified. 2nd. The combination of the levers C, K, M, the racks and guards therefor, and the binding plates E, F for said levers, and the oscillating bar G, and the brake chain I, substantially as and for the purpose specified.

No. 31,256. Harrow. (Herse.)

James Whipps, Carlisle, Ind., U.S., 4th May, 1889; 5 years.

Claim.—The improved reversible harrow, herein described and shown, comprising the side bars B having a series of angular notches b, the runners secured to the opposite sides of the side bars, the angular cross bars C secured to the side bars, with their edges fitting in the angular notches therein, the harrow teeth D secured to the cross bars, and the draft chains secured to the front ends of the side bars, as specified.

No. 31,257. Bag-Holder. (Accroche-sac.)

Frank G. Fisher, Harrold, D.T., U.S., 4th May, 1889; 5 years.

Claim.—1st. A bag-holder comprising the frame arms I pivoted to the upper end thereof, and provided at their free ends with disks having projections on their outer faces, and the U-shaped spring K secured at its bent to the frame, and provided at its upper or free ends with ears K1 through which the arms I freely pass, substantially as set forth. 2nd. A combined bag-holder and hand-truck, comprising the truck F having a cross-piece E, a keeper on the under side of said cross-piece, and a spring-actuated pawl G, the T-shaped frame, the longitudinal arm of which is toothed on one edge for said pawl, and passed through the keeper, the arms I, I pivoted to the transverse arm or cross-piece, extending upward along the under side of the truck, and curved to the front thereof near the handles, devices at the free ends of said arms for engaging the bag, and a U-shaped spring K secured to the frame, and having loops at its free ends through which the arms I freely pass, substantially as set forth.

No. 31,258. Direct Acting Steam Engine.*(Machine à vapeur à action directe.)*

Frederick H. Laforce, Waterbury, Conn., and Hugh J. Barker, Philadelphia, Penn., U.S., 4th May, 1889; 5 years.

Claim.—1st. In a steam engine, the combination of a cylinder A, piston C, guides E, F, crank-pin I, crank-block G provided with studs

l, m, substantially as and for the purpose described. 2nd. In a steam engine, a cylinder A having an internal annular groove B, a stuffing-box, as P, a communicating passage between said groove and the exhaust passage of the cylinder, substantially as described, and whereby the water arising from condensation in the said annular groove may flow directly to the steam exhaust passage and there escape.

No. 31,259. Pneumatic Machine for Distributing Solid or Liquid Substances over Land or Crops. (*Machine pneumatique pour distribuer les corps solides ou liquides sur le sol ou la semence.*)

George F. Strawson, Newbury, Eng., 4th May, 1889; 5 years.

Claim.—1st. The combination of the fan or blower *h* with the delivery nozzles or spreaders *e, e*, and tank *a*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the fan *h*, and tank *a*, of the spreader shown in Figs. 3 and 4, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the fan *h* and hopper *a*, with the delivery nozzle *K*, and delivery board *L*, substantially as and for the purpose hereinbefore set forth. 4th. The combination, with the spreaders *e, e*, of the telescopic or sliding tubes *g, f, f*, substantially as and for the purpose hereinbefore set forth. 5th. The combination, with the nozzle *K*, of a delivery board *L* having partition pieces across the same, substantially as and for the purpose hereinbefore set forth.

No. 31,260. Clothes Wringer. (*Essoreuse à linge.*)

John Kinleyside, Hamilton, Ont., 4th May, 1889; 5 years.

Claim.—The combination and arrangement of the several parts or their equivalents, namely, the levers *B, C*, arms *C*, cams *A*, pins *L*, and the stops *J*, in connection with the fasteners *D*, and the frame *Q*, all operating substantially as and for the purposes herein set forth and described.

No. 31,261. Animal Trap. (*Ratière.*)

Walter F. Denman and George C. Denman, Montréal, Qué., 4th May, 1889; 5 years.

Claim.—An animal trap comprising a platform *A*, a dropping cage *B* provided with a trigger *C*, and a bail *D* provided with a hook *D* to engage the trigger and hold the cage suspended when the trap is set, as set forth.

No. 31,262. Stop Cock. (*Robinet de retenne.*)

Maria M. Forestier, Brussels, Belgium, 4th May, 1889; 5 years.

Claim.—1st. The arrangement of the valves *P, V, V*, in combination with the valve spindle *S*, and the barrel section *b, b* of a stop cock, substantially as herein described and as shown in the accompanying drawings. 2nd. The construction and relative arrangement of the barrel sections *b, b*, the valve spindle and the valves *P, V, V*, and the means for operating the said valve spindle, substantially as herein described and shown in the drawings.

No. 31,263. Head Rest. (*Appin-tête.*)

Edward T. Ryan, New Bedford, Mass., U.S., 4th May, 1889; 5 years.

Claim.—A head rest, consisting of the bar *A*, provided with a lateral opening through its body adapted to receive one arm of the angle-bar *B*, and provided with the thumb-screw *e* for clamping said arm, one end of said bar *A* being provided with the thumb-screw working laterally through it, and the other end having a lateral opening for the reception of the bolt *o* provided with the thumb-screw *f*, loose collar *m*, and a lateral perforation near its head in which the rod *g*, provided with cushion *h* is adapted to be adjusted in any desired position and clamped by means of the thumb-nut *f*, all as shown and described.

No. 31,264. Steam Generator.

(*Générateur de vapeur.*)

The Eno Steam Generator Company (assignee of Joseph A. Eno), Newark, N.J., U.S., 4th May, 1889; 5 years.

Claim.—1st. In a steam generator, the combination, with a boiler *a*, circulating pipes *f, f*, a series of generating pipes *e*, a branch pipe *h* and vertical connecting pipes, of a mud-drum, having the inlet pipe thereof disposed beneath the said branch, substantially as set forth. 2nd. In a steam generator, the combination, with the boiler and a series or collection of circulating pipes disposed horizontally beneath the boiler, and having a vertical course or turn, as at *h, h, h*, in their length, and a mud-drum or sediment receptacle *i* disposed beneath the said vertical course or turn in said circulating pipes, substantially as and for the purposes set forth. 3rd. In combination, a steam generator, with a series of generating pipes *e*, a branch *h* and a mud-drum directly connected with said branch and receiving the sediment therefrom, substantially as and for the purposes set forth. 4th. The combination in a steam generator with a series of pipes *e*, a mud-drum *i* and circulating pipes *f, f*, of a branch *h*, having upwardly-turning extremities *h*, and intermediate pipes *h*, and a downwardly-extending pipe *h*, all formed integral with said branch, and providing means for coupling with the said pipes and a mud-drum, substantially as and for the purposes set forth.

No. 31,265. Dynamo Electric Machine.

(*Machine dynamo-électrique.*)

Jesse F. Kester and Joseph H. Briggs, Terre-Haute, Ind., U.S., 4th May, 1889; 5 years.

Claim.—1st. In a dynamo electric machine or motor, the combination, with a field magnet, of a magnetic deflector located between the field magnet poles, said deflector having polar extremities ad-

acent to the field magnet poles similarly polarized, whereby substantially all the lines of force are thrown into the armature orbit. 2nd. In a dynamo electric machine or motor, the combination, with a field magnet, and an armature, of a magnetic deflector, whereby substantially all the lines of force are thrown into the armature orbit. 3rd. In a dynamo electric machine or motor, the combination of a field magnet, of a magnetic deflector located between the field magnet poles and coils on the field magnet, and on the deflector wound and connected in series. 4th. In a dynamo electric machine or motor, the combination of the field magnet magnetic deflectors, an armature, opposite coils in said armature connected and terminating in commutator strips, ninety degrees apart, the coils opposite adjacent field magnet poles being oppositely wound respectively, and brushes spaced to correspond to the terminal commutator strips. 5th. In a dynamo electric machine or motor, a drum or cylinder armature, having its coils longitudinally wound on its outer surface, and carried transversely across its ends to form chords of the outer periphery of the armature, said coils being arranged in sets, each set covering approximately the whole circumference of the armature, and the coils of each set being located an equal distance apart, a commutator, having a number of strips equal to the number of armature coils, coils of the same polarity in each set being electrically connected and terminating in commutator strips, electrical connections between commutator strips of the same polarity, and a pair of commutator brushes, substantially as described. 6th. In a dynamo or motor, the combination, with a field magnet of an armature, a series of coils arranged flat on the circumference of the same in successive sets, the coils being located an equal distance apart, and adjacent coils being wound in opposite directions, and each set covering approximately the whole circumference of the armature, a series of commutator strips equal in number to the armature coils, the coils in the same set and of the same polarity being electrically connected and terminating in commutator strips, and the terminal commutator strips of the same polarity and belonging to the same set being electrically connected, and a pair of commutator brushes spaced to correspond to said terminal strips, substantially in the manner and for the purpose described. 7th. In a dynamo or motor, the combination of the field magnet, of an armature, having a series of coils arranged flat on the circumference in successive sets of four located ninety degrees apart, and each set approximately covering the whole circumference of the armature, a series of commutator strips corresponding to the series of armature coils, the successive pairs of coils on opposite sides of the armature, and in each set being electrically connected and terminating in commutator strips located ninety degrees apart, the diametrically opposite commutator strips being electrically connected and brushes set ninety degrees apart, whereby the coils in one set may be thrown into the generating circuit and the remaining coils shut out of the circuit.

No. 31,266. Milk Aerator. (*Aérateur à lait.*)

Pitt W. Strong, Brockville, and Ogle Cars, Smith's Falls, Ont., 4th May, 1889; 5 years.

Claim.—1st. The combination of the suspending rod *D*, pail *A* and valve *E*, whereby the pail moves upward on the rod to open the port and falls to close the port, for the purpose set forth. 2nd. An aerator vessel, comprising a pail *A*, having a perforated bottom, provided with a central port *b* and a bar *C* at top, a rod *D* passing through said bar and port and provided with a suspending pulley *G* and stop *d*, and a valve *E* connected to the lower end of said rod below the bottom of the pail, whereby the pail will rise upwardly on the rod and fall upon the valve to open and close the port in the bottom of the pail, substantially as and for the purpose set forth.

No. 31,267. Transplanting Implement.

(*Appareil de transplantation.*)

Thomas R. Coon and John H. Middleton, Hood River, Ore., U.S., 4th May, 1889; 5 years.

Claim.—An improved planter, consisting of the blade *D* formed of a spring band having a sharpened lower edge, and the pivoted handles *B* having their end portions secured to the end portions *b* of the blade, substantially as herein shown and described.

No. 31,268. Plough. (*Charrus.*)

David Smith (assignee of Malcolm Wilson), London, Ont., 4th May, 1889; 5 years.

Claim.—1st. The bearing *C*, having socket *C* formed therein, in combination with the frame *A*, and axle *C*, and means for securing them together, substantially as shown and described, and for the purpose specified. 2nd. The chains *G, G*, in combination with and secured to the frame *A*, and bearing *C*, substantially as shown and described and for the purpose specified. 3rd. The combination, with a straight jointed frame *A*, of the lever *K* and anti-friction roller *K*, substantially as shown and described and for the purpose specified. 4th. The combination, with the frame *A*, of the lever *K*, anti-friction roller *K*, rod *M*, pivotal bar *N*, link *N*, arm *N*, and caster wheel *N* revolving in bearings secured to or in the arm *N*, substantially as shown and described and for the purpose specified. 5th. The shaft *C*, having a portion *F* round in cross section, and the plate or segment *C* having recesses *C* therein, in combination with the arm *P*, wheel *W*, tube *T*, lever *T*, and dog *T*, substantially as shown and described and for the purpose specified. 6th. The bracing roller *S*, in combination with the casting *S*, bracket *S*, and the plough *R*, substantially as shown and described and for the purpose specified. 7th. The outer *R*, rigidly secured to or formed integral with the plough *R*, substantially as shown and described and for the purpose specified. 8th. The brace *J* and clips *R*, in combination with the plough standard *H*, substantially as shown and described and for the purpose specified.

No. 31,269. Tea and Coffee Pot.
(*Théière et cafetière.*)

Arthur H. Bowman, London, Eng., 4th May, 1889; 5 years.

Claim.—1st. An improved detachable strainer of extended surface projecting into and suitable for a tea or coffee pot or similar vessel, and provided with a spring pin or fingers adapted to seize upon the base of the spout of the said vessel, so as to retain the strainer in place until it is desired to remove it. 2nd. The combination of a close meshed strainer of extended surface, with a spring-pressed pin D provided with a pivoted finger or claw E to pass through a small aperture, and thereby automatically lock the strainer in place.

No. 31,270. Apparatus for Automatic Control of Combustion in Hot Water and Hot Air Heating Apparatus.
(*Appareil de contrôle automatique de la combustion dans les calorifères à eau et à air.*)

J. Charles F. Atsatt, Mattapoisett, Mass., U.S., 4th May, 1889; 5 years.

Claim.—An automatic damper regulator, consisting of chamber *b*, bowl *i*, diaphragm *h*, lever *l*, weight *m* and wire *d*, all formed and arranged substantially as and for the purpose described.

No. 31,271. Rotary Harrow. (*Herse rotatoire.*)

Ira E. Stump, Richville, Ohio, U.S., 4th May, 1889; 5 years.

Claim.—1st. The combination of the frame A, provided with the castings D, the spindles E having located upon their lower ends the rotating harrows J, the screws F provided with the handles G, the lifting lugs H and the driving lugs M, substantially as and for the purpose specified. 2nd. The combination of the frame A, the wheel B, the castings D, the screws F, the spindles E having located upon their lower ends the rotating harrows J, and the draft rod P connecting the lifting lugs H and the draft strap O, substantially as and for the purpose specified. 3rd. The combination of the frame A, the wheels B provided with secondary rims, and the driving lugs M adapted to move in radial slots, and to engage with the teeth of the harrow J, substantially as and for the purpose specified. 4th. The combination of the pole W, provided with the slot I, the double-tree S provided with the slot R, the draft strap O and the draft rods P, substantially as and for the purpose described.

No. 31,272. Clothes Drier. (*Séchoir à linge.*)

John L. Lincoln, Chicago, Ill., U.S., 4th May, 1889; 5 years.

Claim.—An improvement in compartment clothes driers, consisting of the wall supports C, D, and guide-rods K attached thereto, in combination with the line-bars H, I, provided with eye-bolts L operating on the rods, the double pulleys F, E, single pulleys G and lines J, the cords M attached to the bars I running over pulleys G and F, and attached to bar O, separate cords N attached to the bar H passing over pulleys E and attached to bar O, and the bar R suspended from the bar O by cords Q, and the stop-pins V for elevating, lowering and holding the lines, as specified.

No. 31,273. Machine for Uprooting Trees.
(*Machine à déraciner les arbres.*)

John F. Foulke, Philadelphia, Penn., U.S., 4th May, 1889; 5 years.

Claim.—1st. As a device for overturning trees, a triangular truss or frame having one of its sides adapted to be secured to a tree trunk, in combination with a lifting device connected and applied to the free end of the said triangular truss. 2nd. In a device for overturning trees, substantially as described, the combination of the triangular truss and lifting jack, constructed and adapted for use as shown and specified, with a carriage A having bearings *t* whereon to balance and turn the jack frame, and bent lever P, whereby to elevate and balance the strut or the triangular frame, all as and for the purpose specified.

No. 31,274. Gasometer. (*Gazomètre.*)

Wilberforce B. Hammond, Boston, Mass., U.S., 4th May, 1889; 5 years.

Claim.—1st. In a gasometer, the combination, with a cistern, of an inverted holder adapted to rise and fall therein, guides spaced at governing points about said holder and attached thereto, and connected shafting mounted upon the cistern, each member of said shafting being operated by, or geared to, one of said guides, whereby a motion of parallel translation of the holder is assured at all periods of its rise and fall, substantially as described. 2nd. In a gasometer, the combination, with a cistern, of an inverted holder adapted to rise and fall therein, rack bars spaced at governing points about said holder, and attached thereto, and connected shafting mounted upon the cistern, each member of said shafting being provided with a sprocket wheel intermeshing with one of the rack bars, substantially as described.

No. 31,275. Railway Car Coupling.

(*Attelage de chars de chemin de fer.*)

Donald Ross, Humphry, Ont., 4th May, 1889; 5 years.

Claim.—In a car coupling bumper W, spring A, and pin E, all formed and combined as and for the purpose hereinbefore set forth.

No. 31,276. Clothes Stick. (*Mouvette à linge.*)

William H. Scott and Hester V. Hardy, Toronto, Ont., 7th May, 1889; 5 years.

Claim.—A clothes-stick composed of a pair of scissor-jointed stick held apart by the action of a spring, in such a manner that it is open in its normal position, and may be closed by a single grasp of the hand, substantially as and for the purpose specified.

No. 31,277. Indexing. (*Mode d'index.*)

George Dugan, (assignee of Robert M. Rigby), Kansas, Mo., U.S., 7th May, 1889; 5 years.

Claim.—In a combined book and index, the combination, with a book provided with a leaf C free of the book cover to its rear edge, of an index provided with a leaf or cover F, the free edge of the latter being flexibly united to the free edge of the leaf C, whereby the index is independent of the book cover, and may be inserted and confined between the book cover and the leaf C with the front edges of the leaves outermost, substantially as described.

No. 31,278. Tension Regulator for Spinning Machines. (*Régulateur de tension pour machines à filer.*)

Patrick L. Kenney and Louis C. Werner, Pittsfield, Mass., U.S., 7th May, 1889; 5 years.

Claim.—1st. The combination, with the cylinder or drum B, the whirls D, and the band L, of the bracket E, and the swinging arm G provided with idler pulleys I, substantially as and for the purpose specified. 2nd. The combination, with the cylinder or drum B, the whirls D, and the band L, of the brackets E, provided with downwardly inclined arms *e*, *et*, the removable collar H, the swinging arm G, and the idler pulleys I, substantially as specified. 3rd. The combination with the cylinder B, the whirls D, and the band L, of the castings provided with sockets *f*, the brackets E provided with vertical arms *e* and having downwardly inclined arms *e*, *et*, the swinging arm G provided with a collar H, and the adjustable idler whirls I provided with collars M, substantially as specified. 4th. The combination, with the cylinder B, the whirls D, and the band L, of the brackets E having arms *e*, *et*, the collar H, the swinging arm G provided at the other end with an eye K, the adjusting bolt *h*, the conical washer *k*, and the idler pulleys I, substantially as specified. 5th. The combination, with the cylinder B, the whirls D, and the band L passing around the same, of the bracket, the swinging arm G provided with idler-pulleys I around which the said band passes, and the weight O provided with a set-screw *n*, substantially as specified. 6th. The combination, with the cylinder B, the whirls D, and the band L, of the bracket E provided with an inclined supporting arm *e*, the swinging arm G, the adjustable collars M, M provided with the vertical bolts *m*, and the idler pulleys I, substantially as specified.

No. 31,279. Stove and Range Grate.

(*Grille de poêle et de lan tier.*)

Charles D. Chown and Henry Cunningham, (assignees of William King), Kingston, Ont., 7th May, 1889; 5 years.

Claim.—1st. The combination of the fixed frame section A, the shaking grate section B having a central opening B₁, and the dumping section C having gudgeons C₁, C₂ journaled through the ends of section A, whereby the dumping section C when rocked lifts section B in a horizontal plane to effect shaking, and section C when released from section B falls edgewise clear of the opening B₂ to effect dumping, as set forth. 2nd. A cooking stove or range grate, comprising a frame section A having drop ends A₁, provided with vertical guide grooves A₂, a grate section B having a central opening B₂, and lugs B₁ coinciding with the grooves A₂, and provided with projections B₃, B₄, and a dumping section C having gudgeons C₁, C₂ journaled through the ends A₁, and provided with cams C₂ for lifting section B horizontally to shake the grate by a rising and falling movement and to allow section C to drop away clear of the opening B₂ in dumping, as set forth.

No. 31,280. Pneumatic Railway Signal.

(*Signal pneumatique de chemin de fer.*)

John K. Leedy, Toms Brook, Noah W. Solenberger and German Smith, Winchester, Va., U.S., 7th May, 1889; 5 years.

Claim.—1st. The combination, with pneumatic signals mounted on posts and communicating with signals in remote stations, of signal arrows fixed to said posts and pointing in opposite directions, substantially in the manner and for the purpose described. 2nd. A pneumatic signal composed of an opaque cylinder, a superimposed transparent cylinder, a guiding cylinder or band, and a colored vertically movable signal provided with a valve stem, and a valve adapted to close against a seat when the colored signal is raised and exposed to view, substantially as described. 3rd. The combination of an opaque cylinder, a transparent cylinder, an enlarged vertically movable visible signal, a pneumatic tube, and a valve, substantially in the manner and for the purposes described.

No. 31,281. Evener for Vehicles.

(*Volée d'arrière de voiture.*)

Alfred G. Brown, Egan, Dak., and Ervin G. Boynton, LaCrosse, Wis., U.S., 7th May, 1889; 5 years.

Claim.—In a draft-equalizer, a vehicle pole having a draft-plate secured to its inner end, provided with a series of perforations and projecting outward at one side of said pole, an evener centrally pivoted thereto, one end of which is secured by rings, links, and a rod to a long evener that is horizontally pivoted to a short evener which is connected by rings, links, and a rod to the short evener on said plate, the outer ends on each evener being provided with draft-clevises, a flat connecting-rod connected to the pivot-bolt of the long and short levers, and longitudinally adjustable by central perforations and bolts, and its opposite end connected in a diagonal line by clip-strap to a vehicle, substantially as shown and described.

No. 31,282. Motor for Launches and other Boats or Vessels. (*Moteur pour les chaloupes et autres bâtiments ou vaisseaux.*)

Charles Desmarais, St. Jean, Qué., 7th May, 1889; 5 years.

Réclame.—1o. Dans un appareil moteur pour les chaloupes, la combinaison avec les bras ou tiges A, A', avec les plaques ou pelles B, B,

des balanciers H, H₁ montes sur l'axe D, et des leviers K, K₁, tel que ci-dessus décrit et pour les fins indiquées. 2o. Dans un appareil moteur pour les chaloupes, la combinaison des bras A, A₁, discs C, C₁, axe D, balanciers H, H₁, axe F, coussinets E, E₁, G, G₁, et chassis ou cadre M, le tout tel que décrit ou pour les fins indiquées.

No. 31,283. Feed Box. (*Crèche.*)

John W. Jacobs, Fremont, Ohio, U.S., 7th May, 1889; 5 years.

Claim.—As a new article of manufacture, the combination, with a feed box A having a concave bottom C, of a self-adjusting follower or cover B of corresponding concavity, said follower or cover having a central aperture O, and regulating bars *d, d, d*, and guide rod R, all substantially as and for the purpose hereinbefore set forth.

No. 31,284. Life Saving Garment.

(*Vêtement de sauvetage.*)

George A. Hiler, Grand Haven, Mich., U.S., 7th May, 1889; 5 years.

Claim.—A life-saving garment consisting of the body portion made of rubber or like impervious material, and having legs, arms and neck-band formed integral therewith, and a gathering cord for said neck-band, in combination with the head-part or protector having the transparent plate D, the perforated plate, the apron E located back of said perforated plate having its lower edge only attached to said protector, and the gathering-cord *c* located at the lower end of said protector, whereby the lower end of the protector is bound to the upper end of the body, substantially as and for the purposes specified.

No. 31,285. Artificial Tooth. (*Dent artificielle.*)

Edward A. Floyd, Paola, Kan., U.S., 7th May, 1889; 5 years.

Claim.—The combination, with the dental plate, of an artificial tooth A having a transverse groove B extending across its inner end, so that the ends or prongs of the grooved portions of the tooth will fit snugly against the opposite sides of the ridge of the plate, the sides of said tooth being open and the flat-headed pin C secured to the tooth in the bottom of the groove, and projecting upward a suitable distance beyond the groove so as to act as a stop for the tooth, and to form a space between the tooth and the model into which the soft hot rubber is swaged, substantially as shown and described.

No. 31,286. Wheel. (*Roue.*)

Alexander Gillies, West Toronto Junction, Ont., 7th May, 1889; 5 years.

Claim.—As a new article of manufacture, a wheel composed of metal tubular frame A and tubular spokes B, the latter being screwed into the hub C, and connected at their opposite ends to the rim A, by means of the clips D, substantially as and for the purpose specified.

No. 31,287. Addition Register for Pencils, etc. (*Régistre d'addition pour crayons, etc.*)

Henry C. Rose, Leadville, Col., U.S., 7th May, 1889; 5 years.

Claim.—The combination, with the case A having communicating tube A₁ slotted at its outer end, of the toothed disk B having axial stem with index-hand, the friction spring *c* arranged between the disk and the side of the case, the spring-seated pencil-holder A₂ with lugs *e* and spring-pawl E arranged in tube A, and collar D arranged to hold the pencil-holder against the tension of its spring, substantially as shown and described.

No. 31,288. Mouth-Piece for Pipes, etc.

(*Bout de tuyau pour les pipes, etc.*)

Henry C. Rose, Leadville, Col., U.S., 7th May, 1889; 5 years.

Claim.—1st. A mouth-piece having two oppositely-faced cups spaced a short distance from each other to form an annular outlet as described. 2nd. A mouth-piece attachment consisting of a hollow stem with two hemispherical cups attached thereto and facing each other, and spaced a short distance apart to leave an annular opening for spreading and diffusing the smoke in a sheet, substantially as described.

No. 31,289. Combined Truck and Bag-Holder. (*Camion accroche-sac.*)

John Wilson, Ailsa Craig, Ont., 7th May, 1889; 5 years.

Claim.—1st. In a combined truck and bag-holder, the sliding rack *c*, the ends of which are received in grooves F of uprights A, and controlled by coil springs G, substantially as shown and specified. 2nd. In combination, with the sliding rack *c*, the guides I and projecting arms H notched as shown to hold the bags in the process of pulling, substantially as shown and specified. 3rd. In combination with the coil springs G, the rubber or cork cushions K contained in grooves F, substantially as shown and specified.

No. 31,290. Fire-Place, Engine, Stove, etc.

(*Foyer, machine, poêle, etc.*)

Johann Bielenberg, Chemnitz, Germany, 7th May, 1889; 5 years.

Claim.—In a stove or furnace, the improved feeding and air supplying arrangements, substantially as described.

No. 31,291. Box for Delivering Matches, Cigarettes and other Articles.

(*Boîte pour livrer les allumettes, cigarettes et autres objets.*)

Frederick W. Cannon, London, Eng., 7th May, 1889; 5 years.

Claim.—1st. A box for delivering matches and other articles, comprising a hopper (for containing the articles to be delivered) provided with a pivoted bottom, a shoot extending from the said hopper, a

shelf onto which the articles passing through the said shoot fall, and a pusher for pushing the articles one at a time from the said shelf, the said parts being arranged and operating substantially in the manner and for the purpose described. 2nd. In a box for delivering matches and other articles, a shelf or support onto which the articles to be delivered fall, and from which they are pushed to effect the delivery, substantially as described. 3rd. In a machine for delivering matches, the hopper which is provided with an oscillating bottom *d, e*, forming a valve between them to relieve the matches which have dropped to the delivery mechanism from the weight of the bulk of the matches in the hopper, substantially as described.

No. 31,292. Machine for Casting Photographic Dry Plates. (*Machine à couler les plaques sèches photographiques.*)

Marcus Kattentidt, Hameln, Germany, 7th May, 1889; 5 years.

Claim.—1st. A casting machine for photographic dry plates, in which there is a double band conveying system, such as the chain bands *b, b*, *b₂, b₂*, the rollers *h, h, i, i, o, o*, and *g, g, g*, which are actuated from the fly wheel *s*, provided with crank handle by means of tooth wheels *t, t*, the pulleys or tooth wheels *u, u* and *u₁, u₁*, with open and crossed straps or belts, whereby the slantingly pivoted revolving brush *c* for cleaning the plates before casting or pouring is revolved from the shaft of one of the band rollers *h*, by means of the pulleys *n₁, n₂*, and the bevelled wheels *r₁, r₁*, whilst the plates *n, n*, are brought along under the revolving brush *c* to the casting vessel *e* and over the gelatine removing rollers *f, f*, and, when cleaned, arrive at the second band conveyor system, where the plates *n, n*, lying on the double band *b₂, b₂* arrive between the heating or drying plate *k* and the cooling vessel *l*, and are so completely dried and cooled when they reach the delivery table that an uninterrupted and continuous manufacture is rendered possible, substantially as described. 2nd. In a casting or pouring machine, as firstly claimed, the arrangement of the casting vessel which is pivotally connected to and mounted on the warming vessel which is supplied with hot water, for the purpose of keeping the casting vessel always warm, in such manner that the casting operation may be interrupted by elevating the casting vessel on its pivot whenever desired, substantially as described. 3rd. In a casting vessel, as secondly claimed, the arrangement of the curved hopper *x* with an air cock *z*, having suitable passages in order to effect the regulation of the entry of the air into the casting vessel, and upon the gelatine, and consequently to make the gelatine come out slower or faster, as desired, substantially as described. 4th. In a casting vessel as secondly claimed, the application of the plate *l*, which is adjustable by means of screws and fly nuts *i, i*, and rendered tight above by means of a packing cord *k₁*, and of the linen strip *g*, which, being turned over and secured by the screws and leather under strip *g₁* is held in tension by means of the wire *p*, hooks *o, o*, and elastic cord *q* on the side lugs *p₁, p₁*, in such manner that it presses on the plates *n, n* conveyed thereunder, and distributes the gelatine evenly thereon, substantially as described. 5th. In a casting machine, operating as herein described, the half round conveyor bands *b, b*, *b₂, b₂*, with their peculiar construction of chains *m₁, m₁*, upon which the flat sides of the bands rest, and to which they are fastened, substantially as described. 6th. In a casting machine operating as herein described, the arrangement of a cooling vessel *l*, with three or more compartments with over-flow and inclined bottom for the gradual cooling of the plates *n, n*, and for preventing the steam when condensing under the inclined bottom from dropping onto the plates in the form of drops of water and again moistening the same, substantially as described.

No. 31,293. Detachable Fastening for Suspenders. (*Agrafe mobile pour bretelles.*)

Edward F. Paramore, Oconto, Wis., U.S., 7th May, 1889; 5 years.

Claim.—A detachable fastening for suspenders, consisting of hook 1 constructed of a single piece of wire, and formed with the rearwardly-projecting hooks 3, having pointed ends *A*, and the laterally swinging fastening plate 2 pivoted to the back of hook 1, and having recesses 5, with which the points 4 are adapted to engage, substantially as shown and described.

No. 31,294. Means for Closing and Locking or Unlocking Railway Carriage Doors. (*Moyens pour fermer et ouvrir les portes des voitures de chemin de fer.*)

Roderick N. Montgomery, Melbourne, Victoria, 7th May, 1889; 5 years.

Claim.—1st. In improvements in and relating to means for closing and locking or unlocking railway carriage doors, the combination, with a main cord, such as A or its equivalent, running longitudinally from end to end of the train, of a number of branch-connecting cords, such as *a, a*, substantially as and for the purpose specified and as illustrated in the accompanying drawing. 2nd. The combination, with a cord, such as A or its equivalent, running longitudinally from end to end of the train, of a pair of connecting links or governor, such as E, substantially as and for the purpose specified. 3rd. The combination, with a cord, such as A or its equivalent, running from end to end of a railway train, and connected by branch cords to the doors of said train, of a number of electric bells arranged either to be worked automatically or otherwise, substantially as and for the purpose described.

No. 31,295. Process for Obtaining by the Aid of Light Paintings on Canvas, Wood and other Materials.

(*Procédé pour produire, au moyen de la lumière, des peintures sur toile, bois et autres objets.*)

Jean B. G. Bonnard, London, Eng., 7th May, 1889; 5 years.

Claim.—1st. The process of obtaining by the aid of light paintings

on canvas, wood and other materials by the use of the positive and negative proofs alternately, substantially as described. 2nd. The process of removing at one operation and transferring the complete painting to canvas, wood or other material, by means of a collodion film composed of two grammes of gun cotton, 40 cubic centimetres of alcohol at 62°, and 60 cubic centimetres of ether at 40°, all substantially as described.

No. 31,296. Inkstand. (*Encrier.*)

Emery Davis, Kane, Penn., U.S., 8th May, 1889; 5 years.

Claim.—1st. An inkstand, provided with a cover, combined with a tube fitted in the cover, a float placed in the tube and a dip funnel or cup, as described. 2nd. An inkstand, provided with a cover, having an overflow chamber K, tube C, float F and the dip cup or tube, as described. 3rd. The dip funnel J having the check *h* and side apertures *i*, the float F, tube F, tube C and the cover B₂, all in combination as set forth. 4th. The inkstand or well A and air-tight cover B provided with tube C, in combination with a float F placed in said tube, substantially as described. 5th. The well A and air-tight cover B, having tube C fitted air-tight in the cover, in combination with the float F, dip tube G fitted therein, and the spring *b*, substantially as described. 6th. The outer annular cover B₂, having screw-threaded flange B₃ adapted to be screwed upon the inkwell A, and the inner annular disk B₁ of soft india rubber, held at its outer edge air-tight between the well A and outer cover B₂, in combination with the tube C held air-tight in the disk B₁, and provided with the float F and the dip tube, substantially as described. 7th. The outer annular cover B₂ screwed upon the ink well or stand A, and the inner disk B₁ of soft rubber compressed between the outer cover B₂ and the well A, in combination with the tube C having flange *b* held air-tight in the disk B₁, the upper ring D upon the upper end of the said tube, the float F and the dip tube, substantially as described. 8th. The outer annular cover B₂ screwed upon the ink-well, the inner cover B₁ of soft rubber, compressed between the cover B₂ and the upper edge of the ink well, in combination with the tube C having shoulder *b*, ring *d* placed on said tube above the shoulder *b* and below the outer cover B₂, and the ring D screwed upon the upper end of the tube C, substantially as described.

No. 31,297. Manufacture of Lock Nuts.

(*Fabrication des arrête-ferous.*)

George A. Goodwin and William F. How, Westminster, Eng., 8th May, 1889; 5 years.

Claim.—1st. The method herein described of making lock nuts by forging, that is to say, rolling or stamping ribbed bars or pieces of metal, cutting off, punching and compressing, substantially as set forth. 2nd. The method herein described of making lock nuts, which consists in forming a double ribbed metal bar or blank, cutting the blank, punching a hole transversely through the ribbed face between the ribs, tapping the nut and compressing the projecting ribbed portions, to contract the intervening space and to form clamping or locking lugs for the bolt, substantially as set forth.

No. 31,298. Cross-cut Saw. (*Scie de travers.*)

Washington K. Groat, Warwick, and William C. Groat, Dorchester, Ont., 9th May, 1889; 5 years.

Claim.—A cross-cut saw, having cutting teeth A, C, E, and drags or clearing teeth D, *a*, shaped and arranged along the blade, as herein shown and specified and for the purpose described.

No. 31,299. Temporary Binder.

(*Reliure mobile.*)

Jacob Dornbirer, Sandusky, Ohio, U.S., 9th May, 1889; 5 years.

Claim.—1st. In a temporary binder, the combination of the following elements: the cover A provided with the back B, the folding guide E removably secured upon the cover, the flap F secured to the cover, the coincident holes through the flap folding guide and cover, means for holding a supply of twine upon the cover, and the tension device for the twine, the parts being combined and arranged to operate substantially as and for the purpose described. 2nd. In a temporary binder, the combination, with the cover A and back B, of the thorn C in the corner of the cover and back, the folding guide E detachably secured in the loops D, the flap J secured above the folding guide, the coincident holes *e*, *c* and *c*1 in the flap, folding guide and cover, the ears H, H adapted to hold a supply of twine, and the tension J and clamp I for holding the end of the twine, all the parts being arranged and constructed to operate substantially as and for the purpose described.

No. 31,300. Scale Divider and Section Liner.

(*Machine à diviser.*)

Adolph C. Both, Portland, Me., U.S., 9th May, 1889; 5 years.

Claim.—1st. In combination, a straight-edge, provided with a rack on its upper face, a sliding ruler plate having guiding lugs fitted to the straight-edge, a plate mover on the ruler plate engaging with the rack on the upper surface of the straight-edge, and a ruler pivoted to the ruler plate, all substantially as described. 2nd. In combination, a straight-edge provided with a rack on its face, a sliding ruler plate having lugs fitting over the edges of the straight-edge, a plate mover engaging with the rack, and a ruler pivoted to the plate, all substantially as described. 3rd. In combination, a straight-edge having a rack on its face, a ruler plate having lugs fitted to the straight-edge, and a slot for the rack, a push pawl for moving the plate, and a ruler pivoted to the ruler plate, all substantially as described. 4th. In combination, a straight-edge, having a rack on its face, a sliding ruler plate having lugs fitted to the straight-edge, a slotted semi-circular arc, and a ruler pivoted centrally in relation thereto, and having its under surface flush with the under surface of the straight-edge when the parts are in place, all substantially as described. 5th. In combination, the straight-edge having a rack on

its face, a ruler plate fitted to slide thereon, having a standard and spindle, a sleeve sliding on the spindle, a pawl pivoted to the sleeve, a spiral spring under the sleeve and an adjusting nut on the upper end of the spindle, all substantially as described.

No. 31,301. Combination Tools or Nippers for the use of Blacksmiths. (*Outils ou pinces à combinaison à l'usage des forgerons.*)

John Sponseller, Fort Apache, A.T., U.S., 9th May, 1889; 5 years.

Claim.—1st. As an improved article of manufacture, the herein described tool, comprising the two jaws or levers, the stud or post rigid with one of said jaws or levers, and projected through a correspondingly shaped slot of the other jaw or lever, as set forth. 2nd. As an improvement in tools of the class herein described, the jaw or lever having the approximately T-shaped stud or post rigid therewith, and the jaw or lever having the elongated slot through which said stud or post is projected, substantially as set forth. 3rd. As an improvement in tools of the class herein described, the jaws or levers pivotally secured together and having the nippers at their forward ends, and the hammer head formed or cast integral with one of said nippers, substantially as set forth. 4th. The pivoted jaws or levers, having the oppositely disposed lugs or projections roughened or corrugated on their inner faces, substantially as set forth. 5th. The herein described combination tool, consisting of the jaws or levers having the nippers at their forward ends, the stud or post of approximately T-shape, rigidly secured to one of said jaws or levers, and projected through a correspondingly shaped slot in the other jaw or lever, and the two oppositely disposed lugs or projections formed with the handles of said jaws or levers, substantially as set forth, one of said jaws or levers having a hammer head formed or cast therewith, as stated.

No. 31,302. Baling Press. (*Presse d'emballage.*)

William McLean, Sarnia, Ont., 9th May, 1889; 5 years.

Claim.—A baling press, consisting of the press tubes A, A, in horizontal alignment and connected by the bed A₁, a driving wheel or belt pulley E having a hollow hub provided with a female screw or nut, and supported on pillow blocks D, intermediately of said tubes, and a screw shaft F having a follower F₁ at the ends, as set forth.

No. 31,303. Locomotive Boiler.

(*Chaudière de locomotive.*)

John Sharkey, Winnipeg, Man., 9th May, 1889; 5 years.

Claim.—1st. The combination of locomotive boiler A, and main flues C leading from fire box B to front smoke box D, and returning through 2½ inch tubes E into smoke box F, from thence into steam chimney G and out of smoke stack H. 2nd. The combination of locomotive boiler A, with steam drum I spaced full length of boiler. 3rd. The combination of locomotive boiler A, with regulator or throttle valve J. 4th. The combination of locomotive boiler A, with steam pipes K, K, connecting to throttle valve J and joined at smoke box D. 5th. The combination of locomotive boiler A, with exhaust pipe M, round back end of steam chimney G. 6th. The combination of locomotive boiler A, with 3 way cock N and stack H. 7th. The combination of locomotive boiler A and spouting bottom P, substantially as and for the purposes hereinbefore set forth.

No. 31,304. Car Brake. (*Frein de char.*)

Charles Mayer, El Paso, Texas, U.S., 9th May, 1889; 5 years.

Claim.—1st. The combination, with the transverse truck beam A, of the levers E, the brake shoes F, the operating lever I, the links H and the spring K, as set forth. 2nd. The combination, with the transverse beam A, of the levers E, the brake shoes F, the pitmen G, the straps M, the retaining rods L, as set forth. 3rd. The combination, with the beam A, of the levers E, devices for operating the levers, the brake shoes F, the pitmen G, the retaining rods L, the metallic straps M, the pivot pins O and the hangers N, as set forth.

No. 31,305. Tug Fastening for Whiffletrees.

(*Accroche-traites pour les palonniers.*)

Charles S. Newsom and Lemuel Oxley, Athens, Ohio, U.S., 9th May, 1889; 5 years.

Claim.—The combination, with a whiffletree, of an elongated spring-arm having a loop *b*, bent as set forth, and an outwardly-bent end *b*1, substantially as described.

No. 31,306. Apparatus for Sealing Letters and other similar articles. (*Appareil à cacheter les lettres et autres objets similaires.*)

George Gros, Bordeaux, and Louis G. Poure, Paris, France, 9th May, 1889; 5 years.

Résumé.—1o. Un outil servant à cacheter les lettres, etc., composé d'une tige courbe A portant à son extrémité la matrice M, et d'une branche mobile B ayant le cylindre C, tel que ci-dessus décrit et pour les fins indiquées. 2o. Un outil servant à cacheter les lettres, etc., composé de deux tiges A et B, réunies par le pivot K et ayant l'appendice G et ressort r, tel que ci-dessus décrit et pour les fins indiquées. 3o. Un outil servant à cacheter les lettres, etc., composé de deux tiges ou branches A et B, ayant la matrice M, cylindre C, bouton D, et ressort s, tel que décrit et pour les fins indiquées. 4o. Un crampon pour les fins indiquées, composé d'un disque *a* ayant les griffes *p*, tel que ci-dessus décrit. 5o. La combinaison des tiges A et B ayant la matrice M, un cylindre C, bouton D, ressort s et de l'appendice G, ressort r, came *n*, et pivot K, tel que décrit et pour les fins indiquées.

No. 31,307. Rasp and Rasp Punching Machine. (*Râpe et machine à tailler les râpes.*)

Philip S. Stokes, Tennent, N.J., U.S., 9th May, 1889; 5 years.

Claim.—1st. The punch stock H₁ held in an anvil frame, and pivoted and acted upon by springs to permit the stock to yield, substantially as and for the purposes set forth. 2nd. The hammers J and J₁ acted upon by springs and cams one preceding the other, in combination with the anvil frame and the punch stock and punch, substantially as described. 3rd. The method herein described of forming teeth on rasp blanks, which consists in the employment of a sharp pointed tool or punch to be applied to the surface of the blank, and then delivering upon the punch, a blow followed by another of equal or greater force, or by a succession of blows, substantially as described. 4th. The anvil frame and pivoted punch stock H₁, in combination with the two hammers J and J₁, and means for operating the hammers, so that one will deliver its blow before the other, substantially as described. 5th. The anvil frame and pivoted punch stock and the plate a₁ acted upon by springs for returning the punch stock, in combination with the hammers, substantially as described. 6th. The anvil frame having the pivoted rod H₂ passed therethrough, in combination with the punch stock H₁, secured to the said shaft H₂, the sliding plate H₆, and means substantially as described, for moving the said plate, substantially as described. 7th. The punch stock H₁ attached to rod H₂ and the anvil frame K, and means for moving the rod H₂ and punch stock laterally, in combination with the hammers, means for operating them, the table F, feed table F₁, and means for moving the same, substantially as described. 8th. The combination, with the rod H₂, punch stock H₁, anvil frame K, sliding plate H₆, rod H₅, and lever H₄, of the spirally-grooved cam H₃, and means substantially as described, for turning the said cam intermittently, as and for the purposes set forth. 9th. The pinion N₁, crank w, and rod W₁, in combination with walking-beam W₂, pawl L₄, ratchet L₅, shaft M₁, cam H₃, and plate H₄, substantially as described. 10th. The pinion L, connecting rod L₂, shaft M, and arms L₁, L₃ connected to the shaft, and the arm L₆, and pawl L₁, pivoted to the upper end of the same, in combination with the shaft M₁, ratchet L₅, cam H₃, lever H₄, connecting rod H₅, sliding plate H₆, shaft H₂, punch stock H₁, and anvil frame K, substantially as described. 11th. The inclined table F, the punch stock, means for operating the same, the hammers and means for operating them, in combination with the feed table F₁ held in the inclined table F, and means for intermittently moving the same longitudinally, substantially as described. 12th. The inclined table F made concave at its upper surface, in combination with the feed table F₁, means for intermittently moving the same longitudinally, and means for rocking the same in table F, substantially as described. 13th. The larger gear wheel O, provided with crank pin p and rod P₂, in combination with the shaft P, arm P₁, opposite arm P₃, connecting rod P₄, opposite arm Q₁, shaft Q, arm Q₂, pawl Q₃, ratchet wheel Q₄, feed shaft F₂, and the feed table F₁ connected thereto, substantially as described. 14th. The lever H₄ attached to the shaft H₄, the cam H₃ and means for intermittently turning the same, in combination with the arm S attached to the shaft H₄, the connecting rod S₁, arm S₂, shaft S₃ elongated segment T, and segment T₁ attached to the feed table F₁ for rocking the same, substantially as described. 15th. The anvil frame K, in combination with the lever U, and the cam lever U₂ for adjusting the same, substantially as described. 16th. The combination, with the anvil frame K, of the lever U, cam lever U₂, shaft U₆, eccentric U₅, lever U₃, and wheel N, all arranged to operate substantially as described. 17th. The combination, with the anvil frame, of supporting springs k² to lift the punch out of contact with the blank, substantially as described. 18th. The vertically-movable plate k⁶ provided with the presser foot k⁴, in combination with the lever U₃ connected to the plate k⁶, and provided with a weight, substantially as shown and described. 19th. The vertically-movable anvil frame K, in combination with the hammers J, J₁, adapted to be connected together and to the anvil frame to operate as one, substantially as described. 20th. As an improved article of manufacture, a rasp formed with teeth B₄, and recesses C₄ curved at the bottom. 21st. As an improved article of manufacture, a rasp having its teeth punched up from curved recesses, whereby each tooth is re-enforced by extra metal and the recess made shallow, substantially as described.

No. 31,308. Steam Boiler and other Furnaces. (*Fourneau de chaudière à vapeur et autres.*)

John Oldroyd and John W. Oldroyd, Crunberg, Germany. 9th May, 1889; 15 years.

Claim.—In steam boiler and other furnaces, connecting the flues with ventilators in such manner that the imperfectly consumed products of combustion are continuously fed under pressure to the fuel on the grate until perfect combustion is attained, when the products of perfect combustion are driven off, substantially as and for the purpose set forth in the foregoing specification and illustrated by the accompanying drawings.

No. 31,309. Railroad Frog. (*Rail de croisement.*)

James A. Durvin, Clifton Forge, Va., U.S., 9th May, 1889; 5 years.

Claim.—In a frog, the combination of the side rails A and A₁, the meeting rails B, B₁, the removable tongue C, the blocks D between the side rails and the tongue, and all provided with pins and recesses, and a clamping device, substantially as described.

No. 31,310. Secondary Battery.

(*Pile secondaire.*)

Otis C. Flick, Brooklyn, N.Y., U.S., 9th May, 1889; 5 years.

Claim.—1st. The improved supporting plate for the conducting material composed of an alloy of ninety-seven (97) per cent. of lead, one (1) per cent. of tin, one (1) per cent. of antimony, and one (1) per

cent. of mercury, substantially as described. 2nd. The improved absorbing material consisting of spongy metallic lead product of a disintegrated alloy of ninety per cent. of lead, and ten per cent. of tin, substantially as described. 3rd. The combination in a secondary battery of the acid proof cell, the circular series of absorbing plates of like form and material placed face to face, and alternately connected in series through, and being suspended from the cell cover, substantially as described. 4th. The combination of the cell cover, the conducting support h carrying one series of plates and having the hollow terminal secured in and extending through the cover, the conducting support e carrying the other series of plates alternately with the plates, of the plates of the first mentioned series, and having the central terminal l extending through and insulated from the hollow terminal of the first series of plates, substantially as described. 5th. The combination of the cell cover, the conducting support h carrying one series of plates, and having the hollow terminal secured in and extending through the cover, the conducting support e carrying the other series of plates alternately with the plates of the first mentioned series, and having the central terminal l extending through and insulated from the hollow terminal, and the packings k and p, substantially as described. 6th. The combination with the hollow terminal j, and plate h supporting one series of plates, the cell cover having said terminal screwed in and secured in the central hole of the cover, and the ring nut q screwed on the terminal and carrying the binding post, substantially as described. 7th. The combination with the central terminal, of one series of plates extended through, and insulated in, the hollow terminal of the other series, of the plates which is secured in the cell cover of the cap, nut x having the binding post projection from the upper end, and the screw therein, substantially as described.

No. 31,311. Machine for Finishing and Completing Twine or Cord. (*Machine à parfaire la ficelle.*)

John Cheyne, Paterson, N.J., U.S., 9th May, 1889; 15 years.

Claim.—1st. Two heated rolls mounted to rotate in a machine for finishing and completing twine or cord, a pair of pressure rollers also mounted to rotate and connecting with the heated rolls, in combination with an absorbing roll mounted upon said heated rolls, a size or solution box with rollers mounted upon said box, one or more bobbin-supporting pins B, and mechanism, whereby the rolls and rollers are rotated, substantially as described and shown. 2nd. The combination of two heated rolls, a pair of pressure rollers, with weight and lever attached, a drying cylinder mounted to rotate in front of said heated rolls, a forming tube, a flyer also mounted to rotate mechanism, whereby the cylinder and flyer are rotated, substantially as described and shown. 3rd. The combination of the flyer d and spindle R, with the forming spool R, tube R₁, traverse bar T, the cam V, means for rotating the tube R₁ and cam V, mechanism for regulating the twist, as shown and set forth.

No. 31,312. Process of Tanning.

(*Procédé de tannage.*)

William Zahn, Newark, N.J., U.S., 9th May, 1889; 5 years.

Claim.—1st. The method herein described of tanning skins, which consists in subjecting the prepared and depilated skins successively to the action of three different tanning solutions, first to a solution of bichromate of potassium, muriatic acid and water, secondly, to a solution of hyposulphite of soda, sulphuric acid and water, and thirdly, to a mixture of saponified neat's foot oil, and a suitable bark extract, substantially as set forth. 2nd. The method herein described of tanning skins, which consists first, in subjecting the skins to the preparatory treatment of unhairing, softening and cleaning the same, secondly, subjecting the skins to the action of a solution of bichromate of potassium, salt, muriatic acid, and water, thirdly, to the action of a solution of hyposulphite of soda, sulphuric acid and water, and fourthly, to the action of a mixture of saponified neat's foot oil, with a suitable bark extract, substantially as set forth.

No. 31,313. Rotary Bolt. (*Blutoir.*)

The Case Manufacturing Company, (assignee of John M. Case), Columbus, Ohio, U.S., 9th May, 1889; 5 years.

Claim.—The combination, with a rotary reel, of a series of troughs or buckets situated within the reel, and having intervening spaces between them, said troughs or buckets being so constructed and arranged as to scoop up the material on the ascending side of the reel, carry it over the reel shaft without dropping any through the spaces between the buckets, and dump it on the descending side of the reel outside of the series of buckets, substantially as set forth. 2nd. In a bolt, the combination, with the reel, of a series of troughs or buckets situated within it, the inner wall of each bucket being of such width and situated at such an angle with relation to the reel shaft, and in such proximity to the bucket immediately in advance that no material shall be allowed to pass through the spaces between the buckets, substantially as set forth. 3rd. In a bolt, the combination, with the rotary reel and the series of buckets or troughs so situated as to exclude the material from the central space of the reel which they enclose, of an exhaust fan having communication with said space, substantially as set forth. 4th. In a bolt, the combination, with the reel, of a series of buckets situated within the reel for the purpose set forth, each bucket being formed of two strips situated at an angle to each other, and having their meeting edges secured together, substantially as set forth. 5th. In a rotary bolt, the combination, with the reel, of a number of buckets situated within the same, and spiders having crotches in which said buckets fit, substantially as set forth. 6th. The combination of the shaft, the spiders having the crotches, each formed of two intersecting branches, the buckets each formed of two strips one secured to each of the two branches which form the crotch and the bolting material, substantially as set forth. 7th. In a bolt, the combination, of the reel, the spiders, each consisting of a collar for embracing the reel-shaft, spokes projecting from said collar and any desired number of crotches,

each formed by two intersecting branches, and buckets fitted in said crotches, substantially as set forth. 8th. In a bolt, the combination, with the reel, and a number of buckets or troughs, of the spiders having the crotches in which said buckets rest, said buckets being each formed of two branches O₃ and O₄, each of the branches O₄ extending from the base of one of the branches O₃, and uniting with the back of the next adjacent branch O₃ some distance from the base thereof, substantially as set forth. 9th. The combination, with the reel and the buckets, of the spider consisting of the collar c for embracing the reel-shaft, the spokes O₁ projecting outward from said collar, and the branches O₃ and O₄ forming crotches O₂ in which said buckets rest, said spider being formed of an integral casting, substantially as set forth. 10th. The combination, with the reel, and the buckets, of spiders consisting of the collar for embracing the reel-shaft formed in two parts, the spokes extending outward from and formed integrally with the collar, and the branches O₃ and O₄ formed integrally with said spokes and forming crotches O₂ in which said buckets rest, substantially as set forth. 11th. The combination, with the reel, of the spiders having branches perforated for the passage of screws, and forming crotches O₂, and the boards p and p¹ secured to the branches O₃ and O₄ respectively by screws passing through said perforations, substantially as set forth. 12th. In a reel, the combination, with the shaft, of rigid longitudinal troughs or buckets, the braces secured at suitable distances apart to said buckets, the bolting cloth and the hoops over which said cloth is stretched supported by said braces, substantially as set forth. 13th. In a reel, the combination, with the shaft, spiders secured thereto, buckets or troughs, each formed of two boards placed at an angle to each other, and secured together at their meeting edges so as to prevent flexion, braces secured to and projecting outward from said buckets, the hoops secured to said braces, and the bolting material stretched over said hoops, substantially as set forth. 14th. In a reel, the combination, with the bolting cloth, and hoops over which it is stretched, of a strip of fabric interposed between the hoop and cloth, substantially as and for the purpose set forth. 15th. In a bolt, the combination, with the reel, of spiders having the branches O₄, the boards p¹ secured to said branches at suitable distances apart, and the boards p secured to said boards p¹, and projecting therefrom at such an angle as to form a bucket, substantially as set forth. 16th. In a reel, the combination of the shaft, a pair of spiders situated at the desired distances apart and having arms O₅ projecting therefrom, the hoops secured to the extremities of said arms, the rigid longitudinal troughs or buckets supported by said spiders, the braces situated at suitable distances apart and projecting outward from said buckets, the hoops secured to the extremities of said braces, and the bolting cloth stretched over said hoops, substantially as and for the purpose set forth.

No. 31,314. Pawl and Ratchet Mechanism for Seeding Machine Wheels.
(*Mécanisme à déclit et rochet pour les roues des semoirs ne ligne.*)

The Hosier Drill Company, (assignee of Edgar W. Summers,) Richmond, Ind., U.S., 9th May, 1889; 5 years.

Claim.—A supporting ground wheel for a seeding machine having a hub 2 provided with an annular flange 3, in combination with the axle 4, the shell 5 fixed to the axle and having an inwardly turned flange provided with an internal series of V-shaped notches 12, and pawls 8 pivoted directly on the hub, and reversible from one side to the other, of radial lines drawn through the pawl-pivots from the centre of the axle, substantially as described.

No. 31,315. Spray Oil Burner.

(*Brûleur d'huile pulvérisée.*)

William C. Fisk, Toledo, Ohio, and Walter Eckel, Chicago, Ill., U.S., 9th May, 1889; 5 years.

Claim.—1st. An injector-burner for hydrocarbon furnaces, consisting of a casing communicating with oil and steam supply pipes, a steam-chamber and auxiliary steam-chamber arranged at opposite ends of the casing, a passage connecting the steam-chambers with the steam-supply, a valve to close communication between the auxiliary steam-chamber and passage, an oil-chamber in direct communication with the oil-supply, a tubular jet-plug connecting the steam and oil chambers, an injector-tube or nozzle leading from the auxiliary steam-chamber, a mixing-tube leading from the oil-chamber to the injector-tube, and a valve adapted to close the inlet end of the jet-plug, substantially as described. 2nd. An injector-burner for hydrocarbon furnaces consisting of a casing communicating with oil and steam supply pipes, a steam-chamber at one end of the casing connected by a passage with the steam-supply, an oil-chamber communicating directly with the oil-supply, a tubular jet-plug connecting the steam and oil chambers, an air-chamber adjoining the oil-chamber, an injector-tube, a mixing-tube leading from the oil-chamber to the injector-tube, and provided with lateral openings communicating with the air-chamber, a valved opening in the side of the air-chamber, and a valve adapted to close the inlet end of the plug, substantially as described. 3rd. In a device of the character described, the combination of a casing communicating with oil and steam supply pipes, a steam-chamber and auxiliary steam-chamber at opposite ends of the casing, a passage connecting the steam-chamber with the steam-supply, a valve to close communication between the auxiliary steam-chamber and passage, an oil-chamber communicating directly with the oil-supply, an air-chamber between the oil and auxiliary steam chambers having an opening in its outer wall, an open burner-tube flared at one end and projecting at its other end within a furnace, an injector-tube leading from the auxiliary steam-chamber, and having its discharge end secured centrally within the flared end of the burner-tube, a mixing-tube extending from the oil-chamber to the injector-tube, and provided with lateral openings communicating with the air-chamber, a valve or turn-button to close the opening in the wall of the air-chamber, and a valve adapted to close the inlet end of the jet-tube, substantially as described.

No. 31,316. Method of Checking or Arresting the Feed of an Arc Lamp and Appliance for the purpose.
(*Manière d'interrompre l'alimentation d'une lampe à arc et appareil pour cet objet.*)

Hugh Watt, co-inventor with John Lea, London, Eng., 9th May, 1889; 5 years.

Claim.—In an electric arc lamp, wherein the feeding of the carbon or carbons is effected by means of clockwork, a brake which acts upon a wheel of the said clockwork to control the movement thereof, and through which the current flows to and through the said wheel when the arc is normal, and which is actuated by a magnet or solenoid in a shunt from the main circuit, so that as the resistance through the arc increases the pressure of the brake upon the said wheel will be diminished or the brake will be taken off, substantially as and for the purposes set forth. 2nd. In an electric lamp wherein the feeding of the carbon or carbons is effected by means of clockwork, the combination, with a brake which is actuated by a magnet or solenoid in a shunt from the main circuit to control the movement of the said clockwork, of a resistance-coil which will be switched into the said shunt when the brake is taken off, and will be short circuited when the said brake is applied, substantially as and for the purposes set forth. 3rd. The combination, with the magnet or solenoid G arranged in a shunt from the main circuit for actuating the brake H₂, of a resistance-coil L wound in the reverse direction to the said magnet or solenoid, and having a core within it, so that the extra resistance switched into the said shunt will energize the said core and counteract the said controlling magnet or solenoid G, substantially as and for the purpose set forth. 4th. The combination, with the clockwork for feeding the carbon or carbons, and the magnet or solenoid E for raising the said clockwork to form the arc, of the magnet or solenoid G arranged in a shunt from the main circuit, the lever H carrying the brake H₂ and connected with the armature or core G₁, the spring K, the coil L arranged to be included in the said shunt to increase the resistance therein, or to be short circuited by means of the said brake, and provided with the core L arranged to act upon the said armature or core G₁, all substantially as and for the purposes set forth.

No. 31,317. Car-Coupler. (*Attelage de chars.*)

James Boney, James Brookbank, Park Head, James E. Campbell and Thomas F. Campbell, Hekworth, Ont., 9th May, 1889; 5 years.

Claim.—The pin B, the block D, the spring H, substantially as and for the purpose hereinbefore set forth.

No. 31,318. Type Writing Machine.

(*Graphotype.*)

Daniel Allen, Jr., Boston, Mass., U.S., 9th May, 1889; 5 years.

Claim.—1st. In a type writer, the combination, with the paper supporting guide, the longitudinal guides, the carriage movable thereon and the feeding mechanism for automatically feeding the carriage forward when a type has been depressed, of the movable type-carrying segment bearing concentric rows of type mounted on said carriage in fixed guides at right angles to the line of movement of the carriage, and a shifting bar mounted in fixed guide and engaging said segment to shift the same, whereby the types in said concentric rows may be brought to the proper printing point, substantially as described. 2nd. In a type writing machine, the combination, with a paper support or guide, a carriage mounted on longitudinal guides and a printing lever thereon, of a type carrying segment provided with concentric series of characters mounted on an axis or pivot, which is movable in fixed guides on and at right angles to the line of movement of the carriage, and a shifting bar mounted in fixed guides and engaging said pivot, whereby the types in said concentric series may be brought to the proper printing point, substantially as described. 3rd. In a type writing machine, the combination of a carriage mounted on longitudinal guides and made in two parts or sections, one of which is independently movable in fixed guides at right angles to the usual movement of the carriage, a type carrying segment having two concentric series of printing characters pivoted to the said independently movable section, a printing lever pivoted to the other section of the carriage and engaging said printing characters to print the same, and a sliding bar mounted in fixed guides and engaging said independently movable section for moving the section to bring either series of characters into operative relation with the printing lever, as set forth. 4th. In a type writing machine, the combination of a carriage made in two parts or sections, one of which is independently movable at right angles with the usual movement of the carriage, a type carrying segment having a plurality of series of printing characters pivoted to the said independently movable section, a printing lever pivoted to the other section of the carriage, and a laterally sliding bar, as *dt*, arranged to be engaged by slotted lugs on the independently movable section of the carriage, and means, substantially as described, for moving said rod laterally and with it the type carrying segment and the section of the carriage supporting it, as set forth. 5th. In a type writing machine, the combination of a carriage made in two parts or sections, one of which is independently movable at right angles to the usual movement of the carriage, a type carrying segment having a plurality of series of printing characters pivoted to the said independently movable section, a printing lever pivoted to the other section of the carriage, and a laterally sliding bar, as *dt*, arranged to be engaged by slotted lugs on the independently movable section, a spring controlled rock shaft journaled in fixed bearings, and connection between said rock shaft and rod, whereby the latter is moved by the rotation of the former, as set forth. 6th. In a type writer, the combination, with the longitudinally movable carriage, the type segment carrying concentric rows of printing characters thereon, and movable in fixed bearing in a direction at right angles to the line of movement of the carriage, and the printing lever of centre pins co-operating with the type segment to centre the type in any of the

said concentric rows, substantially as described. 7th. In a type writer, the combination, with the paper supporting and holding devices, the longitudinal guides and the carriage sliding thereon, of the pointers or indicators projecting on each side of said carriage for aligning the paper, and the movable type segments having the printing characters in line with the pointers, substantially as described.

No. 31,319. Toy Picture. (*Image-jouet*)

Cyrus Heller, Williamsport, Penn., U. S., 10th May, 1889; 5 years.

Claim.—1st. A toy picture made of card boards or stiffened cloth or thin piece of wood, having the shape of an animal or other object shown on a common base line, and adapted by the movement of certain parts of its material upon which a portion of the picture is made to form a suitable support for the object, and at the same time give the proper perspective to all the parts. 2nd. The toy picture herein described, consisting of an animal or other object represented on a plane surface, and having a support integral with it, whereby, without folding or creasing it can be made to stand alone. 3rd. A toy picture, representing a human figure, animal, or like object, consisting of a single sheet having the picture or print on one or both sides, and the object drawn and printed as described, and adapted for operating so that, when it is cut out, it will be capable of being of standing alone without folding and without attached supports, and at the same time securing the desired perspective effect. 4th. The within described process of making toy pictures, consisting in representing the contour or shape of an object on a plane surface of card board or other suitable material, the base support or supports of said object being of proper length to touch one common base line, and shading such object so as to bring it out properly, whereby is produced a toy picture, which by cutting and bending a portion of said card board or other material, and without folding or creasing, can stand alone.

No. 31,320. Heating Drum or Radiator.

(*Poêle sourd.*)

Nebraskus H. Barnes, Wahoo, Neb., U. S., 10th May, 1889; 5 years.

Claim.—1st. In a heating drum or radiator, the combination of the casing comprising the lower conical section, and the inverted conical upper section, the apexes of the said sections being connected by neck *b*, the outlet pipe passing through the closed upper end of the upper section, and extending into the said neck, whereby an annular passage *e* is formed, the valve *g* arranged in the neck below the lower end of the outlet pipe, and the approximately vertical flues *H*, *H* connecting the bases of the said sections, substantially as and for the purpose specified. 2nd. In a heating drum or radiator, the combination of the upper and lower conical sections, having their adjacent apexes connected by a neck in which is arranged a valve, the vertical central pipe extending downward into the said neck and terminating above the valve, and the outside vertical flues connecting the remote ends of the sections, substantially as specified.

No. 31,321. Fire Ladder. (*Echelle de sauvetage.*)

Andrew J. Sutherland, Oakdale Park, Mich., U. S., 10th May, 1889; 5 years.

Claim.—1st. The combination of the ladder sections, one sliding within the other, windlasses, one for each sliding section mounted in the lower section, a rope or cable passed through the base of the first sliding section looped over pulleys attached to the upper portion of the base section and attached to its windlass, and a rope or cable passed across the upper end of the middle section looped around pulleys attached to the lower end of the upper section and around pulleys attached to the upper end of the first sliding section and attached to the windlass for said cable, substantially as set forth. 2nd. In combination, a base section, sliding sections, one within the other, the windlasses mounted in the lower section, one adapted to be rotated as fast again as the others, cables or ropes attached to the sections and looped over pulleys and attached to the windlasses designed for them, and a single cable or rope attached to the upper section, and to the windlass which rotates the fastest, substantially as set forth. 3rd. The combination of the internal gear, the base-plate, a tube fixed to said plate and extending upward therefrom, a shaft in said tube having a gear at the upper end, and a pinion at the lower end meshing with the internal gear, a crank-gear mounted to the top of said tube, and a ladder supported by said base-plate, substantially as set forth.

No. 31,322. Marine Distress Signal Bomb.

(*Bombe-signal de détresse en mer.*)

Reginald H. Earle, St. John, N.F.L., 10th May, 1889; 5 years.

Claim.—1st. A signal bomb, formed with an air chamber, a chamber adapted to receive the explosive material, a tube leading from the chamber containing the explosive material upward through the air chamber, said tube being adapted to receive a fuse, substantially as described. 2nd. A signal bomb formed with an air chamber, a chamber adapted to receive an explosive material, and provided with a tube which leads from the explosive receiving chamber through the air chamber, said tube being adapted to receive a fuse, a disk arranged above the upper end of the tube, a nipple extending upward from the disk, and a cap formed with a roughened surface adapted to fit upon the nipple, substantially as described. 3rd. In a bomb, the combination, with a vessel 10, of a vessel 11 arranged therein, a disk 14 also arranged within the vessel 10 and above the vessel 11, tubes 12 and 13 leading from the vessel 11 upward through the vessel 10, and through the disk 14, a disk 15 arranged above the disk 14, a nipple formed upon said disk, and a roughened faced cap arranged in connection with the nipple, substantially as described. 4th. In a bomb, the combination, with a vessel formed with an air chamber, and provided with a chamber adapted to receive an explosive below said air chamber, of a rocket arranged within the air chamber, and a fuse tube leading downward through the air chamber to the explosive chamber, substantially as described. 5th. In a bomb, the combination, with a fuse-receiving nipple, of a cap formed with a roughened surface and arranged to engage the nipple, substantially as described.

No. 31,323. Gas Regulator. (*Régulateur à gaz.*)

James Bardsley, Oldham, Eng., 10th May, 1889; 5 years.

Claim.—1st. In a gas regulator, the compensating lever provided with an adjustable tube or chamber containing mercury or fluid, the movement of the mercury caused by the rising and falling of the bell of the regulator decreasing and increasing the load upon the bell, substantially as and for the purpose set forth. 2nd. As a means for adjusting the load upon the bell of a gas regulator, the lever *a* having in the horizontal arm *a*² a wheel *a*³ resting upon the bell *b* and tubular chamber *a*¹ screwed into the vertical arm *a* and charged with mercury or fluid, the said part *a*¹ being adjustable in the arm by turning the said part in the direction for screwing or unscrewing, substantially as set forth. 3rd. In a gas regulator, the lever *a*, *a*² mounted upon a fulcrum *i*, provided with a wheel *a*³, and with an adjustable tube *a*¹ containing mercury, in combination with the bell *b*, the spindle *c*, the valves *d*, *d*¹ and the valve-seatings *f*, *f*¹, substantially as set forth. 4th. In a gas regulator, the valve spindle *c*, provided with the fixed valve *d* and the removable valve *d*¹, in combination with the removable screwed seating *f*¹ and the removable screw plugs *m*, *m*, substantially as set forth.

No. 31,324. Lens for Deflecting Light.

(*Lentille pour faire dévier la lumière.*)

Theophilus Coad, Forest Gate, Eng., 10th May, 1889; 5 years.

Claim.—1st. A lens for deflecting light, having a conical front formed with a number of straight facets *A*, from base to apex, said facets terminating at different angles, as at *B*, substantially as described and illustrated in the accompanying drawings. 2nd. A lens for deflecting light, having a conical front cut on a number of straight facets *A* from base to apex, and a convex base. 3rd. A lens for deflecting light, having a conical front, cut in a number of straight facets from base to apex.

No. 31,325. Tobacco Box. (*Boîte à tabac.*)

Arden D. Kimball, Miles, Iowa, U. S., 10th May, 1889; 5 years.

Claim.—1st. The combination, with the box, the cover pivoted at one end to one end of the box and having a notch at its other end which is engaged by a pin on the other end of the box, the opening through which the pivot passes being extended and curved in its length, of the gravity locking bolt adapted to enter the said longitudinally curved opening, substantially as and for the purpose described. 2nd. The combination, with the box and the horizontally moving cover, of the lever pivoted midway of its ends, the weight at one end of the lever and the locking bolt at the other end of the lever, substantially as and for the purpose described. 3rd. The combination of the box and the covers *B* and *J*, the cover *B* having a notch *b* in its front end, and an opening or slot *b*¹ near its rear end curved in its length, of the pin *E* for limiting the movement of the covers, the pivot *D* connecting the covers with the box and passing through the said longitudinally curved opening *b*¹, and the gravity locking bolt normally projecting into the said curved opening, substantially as described.

No. 31,326. Device for Regulating the Quality of Carburetted Air or Gas.

(*Appareil pour régler la qualité de l'air ou du gaz carburé.*)

Edward J. Frost, Philadelphia, Penn., U. S., 10th May, 1889; 5 years.

Claim.—1st. The combination of an inclosing receptacle into which both the vapor-pipe and air-blast pipe lead, a balance-beam, a float mounted upon one arm thereof, a valve-operating device actuated by the other arm thereof, and a valve operated by said device and controlling the said air-blast pipe, substantially as set forth. 2nd. The combination of the vessels *A* and *B* communicating as described, the balance-beam and float arranged therein, the perforated pipes *c* and *d*, the former communicating with the vapor pipe, the latter communicating with the air-blast pipe, the double valve *a*, *b* actuated by the balance-beam, the aneroid whose inlet and outlet are controlled by said double valves, as described, and the valve *U* actuated by said aneroid and controlling the air-inlet of the pipe *d*, substantially as set forth.

No. 31,327. Machine for Catching Lobsters.

(*Machine à pêcher les homards.*)

John M. Forrest, Antigonish, N.S., 10th May, 1889; 5 years.

Claim.—The inclination of the ends, which makes the trap shorter on top, and thereby less affected by tide or sea, and by the set of the head which makes it easier for the first to get in, and more difficult to get out.

No. 31,328. Lobster Trap. (*Parc à homard.*)

George Hurst, Canso, N.S., 10th May, 1889; 5 years.

Claim.—A lobster-trap comprising a cage *A* open at the top and upwardly converging sides, a top *B* elevated above the cage and projecting over the sides, fingers *C* hinged to said top and falling across the top edge of the cage to close the entrance, and wings *E* leading up to the entrance, as set forth.

No. 31,329. Apparatus for Embalming.

(*Appareil pour embammer.*)

Edward H. Horsey, Chicago, Ill., U. S., 10th May, 1889; 5 years.

Claim.—1st. The portable folding embalming apparatus consisting in the combination, with a flexible foldable air-tight sack having a mouth or opening through which the body may be inserted into the sack, and means for closing such opening air-tight, of a foldable wheeled frame or truck for supporting the body near the longitudinal

centre or axis of said sack, so that the preserving gases may have access all around the body, and whereby the body may be rolled in and out of the sack, the wheels of said truck being furnished with yielding tires or treads to prevent injury to the sack, and said sack being provided with a pipe and valve for connecting the same with a portable embalming gas holder, substantially as specified. 2nd. The portable folding embalming apparatus consisting in the combination with a flexible foldable air-tight sack having a mouth or opening through which the body may be inserted into the sack, and means for closing such opening air-tight, of a foldable wheeled frame or truck for supporting the body near the longitudinal centre or axis of said sack, so that the preserving gases may have access all around the body, and whereby the body may be rolled in and out of the sack, the wheels of said truck being furnished with yielding tires or treads to prevent injury to the sack, said sack being provided with a pipe and valve for connecting the same with a portable embalming gas holder, and hoops for holding the sack distended as the body is rolled out of the sack on said truck, substantially as specified. 3rd. The portable folding embalming apparatus consisting in the combination with a flexible foldable air-tight sack having mouth or opening through which the body may be inserted in the sack, and means for closing such opening air-tight, of a foldable wheeled frame or truck for supporting the body near the longitudinal centre or axis of said sack, so that the preserving gases may have access all around the body, and whereby the body may be rolled in and out of the sack, the wheels of said truck being furnished with yielding tires or treads to prevent injury to the sack, and said sack being provided with a pipe and valve for connecting the same with a portable preserving gas holder, and hoops for holding said sack distended as the body is rolled out of the sack on said truck, and a face mask to prevent the sack marring the face as the air is extracted therefrom, substantially as specified. 4th. The combination, with a flexible embalming sack having a mouth or opening for the insertion of the body, and a nozzle F, of a wheeled truck B for supporting the body and rolling the same into the sack, substantially as specified. 5th. The combination, with a flexible embalming sack having a mouth or opening for the insertion of the body, and a nozzle F, of a wheeled truck B for supporting the body and rolling the same into said sack, and a compressed embalming gas or vapor holder D having a nozzle d, and a coupling for connecting the same with the nozzle F of said embalming sack, and cocks or valves f, d, substantially as specified. 6th. The portable embalming apparatus consisting in the combination with a closed vessel for containing the body and holding an embalming gas under pressure, a portable frame for supporting the body in said sack, and an esophageal tube, whereby the preserving gas is caused to act both from the inside and outside the body, substantially as specified. 7th. The portable folding embalming apparatus, consisting in the combination with a flexible foldable air-tight sack, having a mouth or opening through which the body may be inserted, and furnished with screw clamps for closing said opening air-tight, of a foldable wheeled frame or truck for supporting the body in said sack and rolling it in and out of the same, substantially as specified. 8th. The portable folding embalming apparatus, consisting in the combination, with a flexible foldable air-tight sack, having a mouth or opening through which the body may be inserted, and furnished with screw clamps for closing said opening air-tight, of a foldable wheeled frame or truck for supporting the body in said sack and rolling it in and out of the same, said foldable truck having hinged sections furnished with hooks for rendering the joints or hinges rigid, substantially as specified. 9th. The portable folding embalming apparatus, consisting in the combination with a flexible foldable air-tight sack having a mouth or opening through which the body may be inserted, and furnished with screw clamps for closing said opening air-tight, of a foldable wheeled frame or truck for supporting the body in said sack and rolling it in and out of the same, said foldable truck having hinged sections furnished with hooks for rendering the joints or hinges rigid, and straps b₂ for securing the body to said truck, substantially as specified.

No. 31,330. Manufacture of Glass Bottles and Mould for the same. (*Fabrication des bouteilles de verre et moule pour cet objet.*)

Samuel Washington, Manchester, Eng., 10th May, 1889; 5 years.

Claim.—1st. The improvement in the manufacture of glass bottles, which consists in forming and compressing a flange or lip thereon, as the bottle is being blown in the mould, substantially as described. 2nd. A mould for the manufacture of glass bottles, having a collar adapted to slide upon its neck, and to compress a solid flange or lip upon the bottle, substantially as described. 3rd. The combination, with the neck of a mould for forming glass bottles, of a ring or collar adapted to form a recess and to compress a flange or lip on the bottle, substantially as set forth.

No. 31,331. Tell-tale Apparatus or Time Detector. (*Appareil delateur.*)

George B. Fessenden, Boston, Mass., U.S., 10th May, 1889; 5 years.

Claim.—1st. In a watchman's time detector or recorder, the use of a magneto-electric generator to transmit the currents by which the recording apparatus is controlled, substantially as described. 2nd. The combination, with the time motor or clock and recording surface moved thereby, of a series of recording devices, and a number of branch circuits leading from said recording devices respectively to the different stations to be visited, and a return wire common to said stations, and magneto-electric generator included in the branch wire at each of the stations, substantially as and for the purpose described. 3rd. In a watchman's time detector, the combination of a recording apparatus and electro-magnetic device controlling the operation thereof, with a series of branch circuits leading to the different stations from which a records is to be made, and a common return wire for said branches, and a generator of electricity adapted to be used in each of the said branch circuits, substantially as described. 4th. In a watchman's time detector apparatus, a series of branch circuits leading from a receiving station to different stations

to be visited, and a return wire common to several of said stations, combined with a generator of electricity connected in circuit with the branch wire at the station to be visited, and a receiving instrument having a switch or circuit changer by which the said branch circuits are connected one at a time successively with the said receiving instrument, substantially as described. 5th. A watchman's detector apparatus comprising a magneto generator consisting of a movable armature and field magnet at each station, a circuit connecting said station with a receiving station, and receiving apparatus comprising recording mechanism, the operation of which is controlled by the currents generated at the stations, and a circuit changer that connects the said branch circuits one at a time successively with the receiving apparatus, substantially as described. 6th. The combination, with a moving recording surface, of a series of recording devices, and an electro-magnet controlling the operation thereof, and a series of branch circuits corresponding with the said recording devices, and each being subdivided and leading to two separate stations, a return wire common to one series of stations connected with one set of subdivided circuits, and another return wire for the other series of stations, and a commutator controlling the said return wires, whereby the controlling electro-magnet is connected with one return wire while records are being made from one series of stations, and with the other return wire while records are being made from the other series, substantially as and for the purpose described.

No. 31,332. Bottle Stopper.

(*Bouchon de bouteille.*)

William H. Redington, Chicago, Ill., U.S., 10th May, 1889; 5 years.

Claim.—1st. A stopper for bottles or other vessels comprising a cap to be secured to the top of the vessel, a spout extending out from the cap at an angle having a diameter at its outer end not less than the smallest diameter of its body, and means for closing the spout, substantially as described. 2nd. The combination, with a bottle or other vessel, a stopper comprising a cap secured to the top thereof, a tubular spout of substantially the same diameter throughout its entire length extending out from the cap at an angle, whereby the liquid may be permitted to flow out without the aid of any additional vent or opening and means for closing the end of the spout, substantially as described.

No. 31,333. House Sewerage System.

(*Système d'égout de maison.*)

George McNeill, Ottawa, Ont., 10th May, 1889; 5 years.

Claim.—1st. A system of house-drainage consisting of a vertical central ventilating pipe B, having its lower end connected with the street sewer by a continuation B₁ laid with a proper fall, an egg-shaped trap C connected to said pipe B by a short outlet pipe placed some distance from the bottom of said trap, and the waste pipes of a building having their lower or discharge ends connected with said trap below its connection with the ventilating pipe, substantially as set forth. 2nd. A trap consisting of a vessel having a removable cover, an outlet placed some distance from the bottom, and branches below the level of the outlet for connection with the waste pipes of a building, substantially as set forth.

No. 31,334. Veterinary Surgery.

(*Chirurgie vétérinaire.*)

Irving W. Benedict, Cobleskill, N.Y., U.S., 10th May, 1889; 5 years.

Claim.—1st. In an appliance to prevent masturbation or abuse in stallions, a shield to conform to the outline of the belly provided at its front with a perpendicularly-depending guard, and with means whereby the appliance is fastened to the animal, substantially as set forth. 2nd. An appliance to prevent masturbation or abuse in stallions, comprising a shield provided at its front with a perpendicularly-depending guard, and at its rear with extension-pieces, and an intervening hollowed-out space, whereby lateral displacement of the shield is prevented when secured in position in front of and around the sheath of the animal, substantially as set forth. 3rd. The shield A having rearward extensions, and combined with the guard B having braces c₁, c₂, substantially as set forth.

No. 31,335. Chemical Fire-Extinguisher.

(*Extincteur chimique d'incendie.*)

Israel L. Carr and Sylvester H. Grobb, St. Catharines, Ont., 11th May, 1889; 5 years.

Claim.—1st. In a chemical fire-extinguisher, constructing the same with separate compartments for all the chemicals unmixed, and which only become mixed by inverting the cylinder to generate gas, substantially as and for the purpose specified. 2nd. In a chemical fire-extinguisher, the combination, with the cylinder A, and vial C, of the compartment D, substantially as and for the purpose specified. 3rd. In a chemical fire-extinguisher, the combination, with the cylinder A, of the diaphragm b formed concave and having marginal openings c, and a central tube a passing through it, substantially as and for the purpose specified. 4th. In a chemical fire-extinguisher, the combination, with the cylinder A, of the plate b having openings c, and a tube a having a slot x, and bottom plugs y, z for holding the vial C, substantially as and for the purpose specified.

No. 31,336. Fishing Reel. (*Rouet de pêche.*)

William F. Kakas, Boston, (assignee of Charles K. Bradford, Lynnfield), Mass., U.S., 11th May, 1889; 5 years.

Claim.—1st. In a fishing reel frame or mounting, the combination of the sheet metal end rings or bands, the spool supporting end-plates made in separate pieces from said rings and secured therein, and the arched or bent sheet metal tie-pieces secured to and bridging the space between the rings, and having elongated bearings on said rings, said tie-pieces being made separately from said rings and secured

thereto by screws or other suitable fastenings, as set forth. 2nd. A frame or mounting composed of the discs or end plates, the rings affixed thereto and internally supported thereby, the arched or bent tie plates secured to and connecting said rings, one of said plates being provided with ears 8, 8, and the pole attaching plate bearing on said ears and attached to the tie plate on which the same are formed, as set forth. 3rd. In a fishing reel, the combination of a frame or mounting, a shaft journaled therein, a spool mounted on said shaft, and a system of gearing connecting the shaft and spool, whereby the rotation of the shaft is multiplied in being communicated to the spool, as set forth. 4th. The frame or mounting having the end plates 5, the shaft journaled in said end plates, the spool mounted on the shaft, the eccentric stud *a* supported by one of the end plates, the gears 2, 3 mounted on said stud and rendered adjustable thereby, and the gears 1, 4 affixed respectively to the shaft and spool and meshing respectively with the gears 2, 3, as set forth.

No. 31,337. Magazine Gun. (*Fusil à magasin.*)

Henry A. Pitcher and Joseph Morley, Neillville, Wis., U.S., 11th May, 1889; 5 years.

Claim.—1st. The combination, with the lock mechanism, of the cylinder arranged under the barrel, and having the vent communicating directly with the bore thereof, the piston in said cylinder in advance of the vent, and connected to the lock mechanism, and the spring M arranged in said cylinder and pressing rearward on the piston. 2nd. In a magazine fire-arm having the cylinder arranged under the barrel, and having the vent communicating directly with the bore of the barrel, the combination, with the lock mechanism, of the piston arranged in the cylinder in advance of the vent, the spring in said cylinder pressing rearward on the piston, the longitudinally movable drive rod G attached to the piston and engaging with the tumbler P, which is pivotally attached to the segment I, and the link J connecting the segment with the lock mechanism, substantially as set forth. 3rd. In a magazine fire-arm having the cylinder communicating with the bore of the barrel, the combination of the piston arranged in the cylinder, the drive rod attached thereto, the tumbler engaging with said rod, the segment, the lock mechanism, the link connecting the latter to the segment, the spring-pressed connecting rod attached to the segment, and the spring M bearing rearward on the piston, substantially as described. 4th. In a magazine fire-arm having the cylinder communicating with the bore of the barrel, the combination of the piston arranged in the cylinder, the spring M pressing rearward on the piston, the drive rod attached to the latter, the tumbler engaging with the drive rod, the segment, the lock mechanism, the link connecting the latter to the segment, the follower, the spring S pressing forward on the latter, and the rod connecting the follower to the segment, substantially as described.

No. 31,338. Name or Sign Plate.

(*Plaque d'enseigne.*)

Charles M. Underwood, Hamilton, Ont., (assignee of Hermann Wark, New York, N.Y., U.S.), 11th May, 1889; 5 years.

Claim.—1st. A name or sign plate consisting of a main frame having parallel longitudinal slits, a panel-plate between said slits made integral with the main frame, and provided with notches at its rear edges, and letters having bent prongs which are inserted into the slits and applied to said notches, substantially as set forth. 2nd. A name or sign plate composed of a main frame having parallel longitudinal slits, a depressed panel-plate between said slits, a longitudinal reinforcing bar or rib extending along the rear of the panel-plate, notches at the rear edges of the panel-plate, and letters provided with prongs that pass through the slits and engage the notches, substantially as set forth.

No. 31,339. Boat Launching Carriage.

(*Chariot de lancement des bateaux.*)

Henry J. Woods and The Rodger's Iron Manufacturing Co., Muskegon, Mich., U.S., 11th May, 1889; 5 years.

Claim.—1st. As an improvement in boat-launching carriages, the combination of the central longitudinal ways provided with rollers to receive the boat's keel, the side wheels provided with supporting-wheels, and wheels or rollers bearing upon the sides of the boat to preserve its equilibrium, and an engaging and disengaging bolt to retain the boat in position upon the carriage when desired, all constructed and operating, substantially as shown and described. 2nd. In a boat-launching carriage, the combination of the central longitudinal ways, provided with rollers to receive the boat's keel, the side brackets provided with the supporting-wheels, and wheels or rollers bearing upon the sides of the boat to preserve its equilibrium, and the metallic plate R jointed to the central longitudinal bars or ways provided with inclined jaws S, and a spring-operated holding bolt T arranged to retain the boat in position upon the carriage until it reaches the water, as set forth. 3rd. In a boat-launching carriage, the frame consisting of the central longitudinal ways provided with rollers for the reception of the keel of the boat, the side longitudinal bars provided with rollers to support the boat, and supported by rollers, the transverse bars securing the longitudinal bars in position, the plate R attached to the central longitudinal bars, its inclined jaws S, and the removable piece inserted into the dovetail groove *c* of the spring-operated locking bolt T, all arranged as and for the purpose specified. 4th. In a boat-launching carriage, the frame consisting of the central longitudinal bars carrying rollers for the boat's keel to run upon, and rollers to support the frame, the side longitudinal bars supported upon rollers, and carrying adjustable rollers for supporting the sides of the boat, the plates D for securing the longitudinal and transverse bars together, and the plate E for holding the central longitudinal bars in position, in combination with the spring-operated bolt T, and the links Y, Y, arranged in the manner described for withdrawing the bolt, substantially as set forth. 5th. In a carriage for boats, the combination of the central longitudinal bars forming ways for the keel, the side longitudinal bars carrying adjust-

table supports for holding the boat in an upright position, the transverse bars uniting the longitudinal bars, the plates D for firmly uniting the transverse and longitudinal bars, the plates E for holding the two central bars in their relative positions, and the braces L, all arranged substantially as set forth. 6th. In a launching carriage for boats, the combination of the longitudinal side bars, with the adjustable brackets carrying oscillating rollers at their upper ends, for keeping the boat in an upright position, substantially as set forth. 7th. In a launching carriage for boats, the combination, with the frame of the inclined oscillating rollers W, and the inclined rollers P attached to the longitudinal side bars K to keep the boat on an even keel, substantially as specified.

No. 31,340. Transmitter for Telephones.

(*Appareil transmetteur de téléphone.*)

James Straton, (assignee of Webster Gillett), St. John, N.B., 11th May, 1889; 5 years.

Claim.—1st. In a telephone transmitter, a body provided with a diaphragm, in combination with pivoted electrodes having their free ends in gravitative contact with said diaphragm, certain electrodes being connected with opposite poles of an electric battery, substantially as described. 2nd. In a telephone transmitter, the combination of a body, a diaphragm secured thereto, electrodes pivoted to semi-circular plates on said body, and having their free ends in gravitative contact with said diaphragm, whereby they are rendered self adjusting to the vibrations thereof, an electric battery having its conducting wires respectively connected with different semi-annular plates or holders, one wire being common to all electrodes in its plate, and an induction-coil disposed in the circuit of said battery, substantially as described. 3rd. In a telephone transmitter, the combination of a body, a diaphragm secured thereto, a conducting disk cushioned on said diaphragm, electrodes pivoted to said body having their free ends resting on said disk, an electric battery the conducting wires of which respectively connect with different portions of said body, and an induction-coil in the circuit of said battery, substantially as described. 4th. In a telephone transmitter, the combination of the body B, the diaphragm C secured to said body by holders *f, g*, said holders being respectively connected with opposite poles of an electric battery, the electrodes D having their free ends in electrical contact with said diaphragm, and an induction-coil disposed in the circuit of said battery, substantially as described. 5th. In a telephone transmitter, the combination of the body B, the diaphragm C secured thereto by holders *f, g*, the conducting disk H provided with the cushions *i*, the electrodes D pivoted to said holders, with their free ends in contact with said disk, the battery K having its connecting wires respectively connected with said holders, and an induction-coil in the circuit of said battery, substantially as described. 6th. In a telephone transmitter, the combination of a body, a diaphragm secured thereto by clamping plates, a conducting disk cushioned on said diaphragm, self-adjusting electrodes pivoted to said plates, and having their free ends in contact with said disk, a speaking tube, a battery having its conducting wires connected to opposite plates, and an induction coil interposed in said circuit by its primary wires, the secondary wires thereof connecting with the earth and a receiving station, substantially as described. 7th. In a telephone transmitter, the combination of a body B provided with a tube A, the diaphragm C secured to said body by holders *f, g*, the disk H supported by the cushion *i* on said diaphragm, the battery K having its connecting wires respectively connected with the holders *f, g*, the induction coil L interposed in the circuit of said battery by its primary wires, and the self-adjusting electrodes D pivoted in ears *h* on said holders, and having their free ends resting on said disk, all being arranged to operate substantially as described. 8th. In a telephone transmitter, the combination of a body, a diaphragm secured thereto by clamping plates, self-adjusting electrodes pivoted to said plates, and having their free ends overlapped on said diaphragm, an electric battery with conducting wires, and an induction coil in the circuit of said battery, substantially as described. 9th. In a telephone transmitter, the combination of a body, a diaphragm secured thereto by clamping plates, self-adjusting electrodes pivoted to said plates, and having their free ends overlapped on disk, an electric battery with conducting wires, an induction coil in the circuit of said battery, substantially as described.

No. 31,341. Barrel Hoop Machine.

(*Machine à cercles de barils.*)

Emil Olund, Hudson, Wis., and Alexander Johnson, Stillwater, Minn., U.S., 11th May, 1889; 5 years.

Claim.—1st. A saw, having alternate teeth at an angle to the plane of the body of the saw, and intervening teeth in the plane of the body of the saw, and tapering splitters, one on each side, and extending to near the teeth of the saw, employed in operative connection to cut and split the hoop from the hoop-pole in the path of the grain of the pole, substantially as shown and described. 2nd. A circular saw, having alternate teeth at an angle to the plane of the body of the saw, and intervening teeth in the plane of the body of the saw, and splitters tapered to a knife edge, one on each side, and extending to near the teeth of the saw employed in operative connection to cut and split the hoop from the hoop-pole in the path of the grain of the pole, substantially as shown and described. 3rd. In a barrel-hoop machine, the combination of a saw having tapering splitters, one on each side, and extending near the teeth of the saw to act in conjunction therewith, of a series of feed-rolls mounted upon vertical shafts, a series of gears connected with a common source of power and with each other, and swinging frames, such as H, J, K, and L for supporting said shafts and gears, whereby said feed-rolls may be actuated in unison, and a rotary and lateral movement imparted thereto, substantially as shown and described. 4th. The combination, with a circular saw having alternate teeth at an angle to the plane of the body of the saw, and intervening teeth in the plane of the body of the saw, of circular tapering splitters of different diameters, one on each side, and extending to near the teeth of the saw to operate in conjunction therewith, substantially as shown and described. 5th. The combination, with a circular saw, of circular concave tapering

splitters of different diameters, one on each side, and extending to near the teeth of the saw to operate in conjunction therewith, substantially as shown and described. 6th. The combination of a circular saw, clamping plates and annular tapering splitters, one on each side, and extending to near the teeth of the saw to operate in conjunction therewith, substantially as shown and described. 7th. In a barrel-hoop machine, the combination of a revoluble dressing knife, an idle compression roller adjustably mounted opposite to said knife, a chip-breaker located in the path of the hoop near to said knife, a spring for compressing the same against said hoop, and a spring fender in the path of said hoop upon the opposite side of said roll, whereby the back of the hoop may in its passage be held under resilient tension against said idle roller to impart a smooth inner surface and uniform thickness to said hoop, substantially as shown and described. 8th. In combination with the table, a standard mounted thereon, having rigid brackets, a driving shaft extending up through said standard, a shaft mounted in the ends of said brackets, laterally movable arms pivoted on the latter shaft above said brackets, a shaft mounted in the free ends of said arms and carrying a trimmer pulleys on said shaft, and belts passing around the pulleys, whereby the trimmer may be revolved from said driving shaft, substantially as set forth. 9th. The combination, in a hoop-making machine, of the table and the feed rolls, the knot trimmer for dressing the back of the hoop preparatory to its passage through the feed-rolls, a frame in which said knot-trimmer is journaled, having a lateral movement parallel to the table, means, as a spring, for causing said trimmer to exert a yielding pressure against the pole, and a hoop splitting and cutting saw arranged to operate in a plane perpendicular to the table, substantially as set forth. 10th. The combination, in a hoop-making machine, of the table, the hoop splitting and cutting saw, the feed rolls, the rotary knot-trimmer and front and rear guards for the latter supported on a sliding plate, and adjustable to and from the work, substantially as set forth. 11th. In combination with a knot trimmer, its shaft and supporting arm, a tubular bearing on said shaft, a thimble swivel connection between said bearing and thimble, and a shield nearly surrounding the trimmer and depending from said thimble, substantially as set forth. 12th. In combination with a knot trimmer, its shaft and supporting arm, a sleeve or thimble surrounding and having swivel-connection with said shaft, an outwardly-projecting flange on said sleeve provided with a perforated lug, an operating device working in said perforations, and a shield for the knot-trimmer depending from said plate, and adjusted to and from the trimmer by said operating device, substantially as set forth. 13th. The combination of a table and saw mounted thereon, a feed roller at the front edge thereof, a shaft carrying said roller and mounted in a pivoted bracket, a weighted lever connected to said bracket and a treadle for lifting said lever, substantially as shown and described.

No. 31,342. System of Telephonic Communication. (*Système de communication téléphonique.*)

The Bell Telephone Company (assignee of Charles F. Sise), Montréal, Qué., 11th May, 1889; 5 years.

Claim—In telephonic communication, the art of increasing the volume of tone by cutting out during the period of reception of message the induction coil of the transmitter.

No. 31,343. Base-Ball Bulletin Board. (*Tableau de notes de jeu de balle.*)

Edwin A. Grozier and Frederick A. Duneka (assignees of Edward S. Van Zile), New York, N.Y., U.S., 11th May, 1889; 5 years.

Claim—1st. A base-ball indicator, consisting of a bulletin board having a diagram of a base-ball field, with the position of the players marked thereon, and a series of indicating markers, each bearing a color number, or other distinguishing mark to denote a player, and having a catch or pin for attachment to the board, whereby the progress of a game may be set as despatches are received from the field, substantially as described. 2nd. A base-ball indicator, having numbered diagrams denoting the batting positions in numerical order, and markers, each bearing a separate number or other distinguishing mark to indicate players, substantially as set forth. 3rd. A bulletin board, having a base-ball diagram and markings designating hits, errors, etc., with a hole or catch in proximity thereto, in combination with markers, each bearing a device distinguishing it from the other markers. 4th. The combination, with a bulletin board, having names and position of players and diagram of ball field marked therein, and separate pins denoting players, of an adhesive marker to indicate the course of the ball, substantially as described.

No. 31,344. Shears. (*Cisailles.*)

Frank J. Cooper, Emporia, Kan., U.S., 14th May, 1889; 5 years.

Claim—In a pair of shears, having the upper blade and handle in two parts, the horizontal shank of the lower blade at P projecting from the upper heel part of the blade, and leaving a plain surface Q upon the heel part of the blade, offering no obstruction to the cut edge of material on that side, in combination with the block H forming with the shank P, the recess at T, so as to leave no obstruction to the passage of the cut edge of material on the other side, whereby all lateral strain upon the cut edges of material is prevented, substantially as set forth.

No. 31,345. Composition of Matter for Preserving Meat, Eggs, Butter and Fruit. (*Composition de matières pour conserver la viande, les oeufs, le beurre et les fruits.*)

John S. Carreth, Winnipeg, Man., 14th May, 1889; 5 years.

Claim—A compound, composed of refined borax, sulphuric acid, acetic acid and water, substantially in the proportions and for the purposes set forth.

No. 31,346. Implements and Machinery used in the Manufacture of Brick, Tile and Earthenware, and Method and Process of Using such Implements and Machinery. (*Outils et machinerie employés dans la fabrication des briques, des tuiles et de la poterie, et mode ou procédé tels outils et machinerie.*)

Albert S. Locke and Robert P. Locke, Toronto, Ont., 14th May, 1889; 5 years.

Claim—1st. The adjustment of the cleats attached to the under side of any kind of pallet, so as to balance the weight of the bricks resting on the pallets, and the construction or adaptation of moulds and dies to correspond with the position of the cleats on any such pallet. 2nd. The improved method of manufacturing bricks and tiles by means of pallets, moulds and dies, constructed and arranged as herein described. 3rd. The arrangement of the cleats at intermediate points under the pallets, and the construction of pallets of lighter or thinner material than any now in use, the cleats being moved towards the centre of the pallets, the material of which the pallet is made does not require to be made so stiff, strong or thick as in pallets having the cleats at or near the ends. 4th. The combination of pallets, moulds and dies, having spaces between the cavities, and between the holes in the dies corresponding to the position of the cleats on the pallets. 5th. The cleats made with holes or arches instead of being solid, thereby decreasing the weight and allowing the free circulation of the air through the bricks when drying. 6th. The method of equipping a brick yard cheaply, by means of a system of pallets, moulds and dies above described. 7th. And also we claim as our invention the above described method of constructing pallets, cleats, moulds and dies, and the combination of and methods of handling and using the pallets, cleats, moulds and dies above described, and in any form or way in which the same may be combined or used in the working of a brick and tile yard or factory, substantially as and for the purposes hereinbefore set forth.

No. 31,347. Agricultural Boiler or Barrel Heater. (*Baillonne d'agriculture ou étuve de tonnellerie.*)

Torger Tvedten, Cambridge, Iowa, U.S., 14th May, 1889; 5 years.

Claim—The combination, with a brick shell medium fire-place and smoke-stack, of two feed barrels, one on each side of fire-place and extending above and below it, a space between shell and barrels forming a flue leading to the smoke-stack, as shown and described.

No. 31,348. Steam Boiler and other Furnaces. (*Fourneaux de chaudière à vapeur et autres.*)

James H. Annandale, Polton, Scotland, 14th May, 1889; 10 years.

Claim—1st. In steam boiler and other furnaces, and fitted at the inner end of ordinary fire bars and between them and the bridge, a perforated hearth slab or grating mounted, so that it can be inverted or more or less inclined with means for turning the same, substantially as and for the purposes hereinbefore described. 2nd. The combination in a furnace of an invertible or turnable perforated hearth slab or grating at the inner end of ordinary fire bars, with a hollow bridge supplied with air and made with perforations for the issue of such air amongst the gaseous fuel products, substantially as hereinbefore described.

No. 31,349. Electric Motor. (*Moteur électrique.*)

Etna H. Davis and Reuben Westervelt, Elmira, N. Y., U. S., 14th May, 1889; 5 years.

Claim—1st. In an electric motor, the combination, with an electro magnet and its armature, of a circuit breaker operated by the lutter at the limit of its stroke, as and for the purpose set forth. 2nd. In an electric motor, the combination, with an electro-magnet and its armature, of a centrally pivoted lever operatively connected with the said armature, the said lever being one terminal of the magnet circuit, and being thrown out of connection with the opposite terminal by the movement of the armature towards the poles. 3rd. In an electric motor, the magnet B, armature C and arm K, having the yoke L, carrying the roller I, all in combination with the pivoted lever M, the beam at H adjusting screw O and contact spring P, as and for the purpose set forth. 4th. In an electric motor, the combination, with an electro-magnet and its armature, of a shaft carrying a flanged disk, and a clutch consisting of a notched bar co-operating with the flange, the said clutch being attached to the armature, as and for the purpose set forth. 5th. In an electric motor, the combination, with an electro-magnet and its armature, of a shaft carrying a flanged disk, and a clutch, consisting of a notched bar co-operating with the flange, the said clutch being attached to the armature, and a similar clutch on the opposite side of the disk for holding it when it has been moved, as a, f, c, p, s, f. 6th. In an electric motor, an electro-magnet and armature, a circuit breaker connected with the latter, in combination with a shaft carrying a flanged disk, and a clutch, consisting of a notched bar co-operating with the flange, the said clutch being attached to the armature, as and for the purpose set forth. 7th. In an electric motor, an electro-magnet and armature, a circuit breaker connected with the latter, in combination with a shaft carrying a flanged disk, and a clutch on the opposite side of the disk for holding it when it has been moved, as a, f, c, p, s, f. 8th. The combination, with a pair of branch circuits and a pair of springs, one in each branch circuit, of a disk with which the springs make contact, the said disk being grooved at its edge and leaving an insulating piece inserted at one point in its periphery, as and for the purpose set forth.

No. 31,350. Machine for Setting Saws.*(Machine à donner la voie aux scies.)*

Jonathan Hewitt, Ethel, Ont., 14th May, 1889; 5 years.

Claim.—A saw-set consisting of bed A, gauges B, lever C, backs E and thumb-screws F, all formed and combined substantially as set forth.**No. 31,351. Steam Boiler Furnace.***(Foyer de chaudière à vapeur.)*

John Good, Napanee, Ont., 14th May, 1889; 5 years.

Claim.—In a steam boiler furnace, the combination of the air pipe D passing longitudinally through the fuel, and having its front end returned and entering the air-tight ashpit and provided with a nozzle d111, the superheater E placed transversely under the boiler, steam pipe F connecting the superheater with the boiler pipe F, connecting the discharge end of the superheater, and passing through the front end of the air pipe, and terminating in the nozzle d111, forming a jet exhauster, the grate C, and secondary grate U, and the air-tight ashpits A111 and A111, substantially as set forth.**No. 31,352. Combined Punch, Shears and Saw Gunmer.** *(Poinçon, cisailles et machine à évider les dents des scies combinés.)*

James Schofield, Petoskey, Mich., U.S., 14th May, 1889; 5 years.

Claim.—1st. The combination, with a set of reversible and detachable tools, of a frame to which the tools may be interchangeably connected consisting of the base A cast with standards B, E, and seat H, and ears a, and the cam lever C pivoted to the standards B, substantially as and for the purpose set forth. 2nd. The combination, with the frame, constructed substantially as described, and provided with a cam-lever, of the reversible blade F detachably connected to the frame, substantially as and for the purpose set forth.**No. 31,353. Lobster Pound.** *(Vivier à homard.)*

James R. Burns, Friendship, Mich., U.S., 14th May, 1889; 5 years.

Claim.—A pound consisting of a series of independent compartments arranged one above the other, each compartment having a door through which the fish can be removed, and chutes extending down from the top of the pound into each separate compartment, substantially as and for the purposes specified.**No. 31,354. Hot Water Boiler.***(Bouilloire à eau chaude.)*

Eugène S. Manny, Montréal, Qué., 14th May, 1889; 5 years.

Résumé.—Dans une bouilloire, un écone collecteur D, tel que spécifié et pour les fins indiquées.**No. 31,355. Wrought Iron Grate.***(Grille en fer forgé.)*

Paul Goudron, Berthier, Qué., 14th May, 1889; 5 years.

Résumé.—Dans les grilles en fer forgé, la combinaison avec des barreaux C et C1, du double modillon A et B, a projections intérieures D, D1 et E, E1, creux F et F1, et a méplats G, G1, G11, et G111, fixé par bouton H ou par simple rivet, le tout tel que décrit et pour les fins indiquées.**No. 31,356. Apparatus for the Manufacture of Salt.** *(Appareil de fabrication du sel.)*

John L. Alberger, Horace Williams, Buffalo, and Louis R. Alberger, New York, N.Y., U.S., 14th May, 1889; 5 years.

Claim.—1st. The combination of the gravel box F, the closed evaporators D and E, the open grainer H, the pipes P, the shaft K, and the rotating arms R provided with scraper L, in the manner as and for the purpose described. 2nd. The combination of the grainer H, the pipes P, the rotating arms R having scraper L, the shaft K, the shaft T, the agitator arms W provided with flipper, in the manner as and for the purpose described. 3rd. The combination of the gravel box F, the heaters A and B, the evaporators D and E, the grainer H, the heater C, with the pump A3, and connecting pipes, in the manner as and for the purpose described. 4th. The dam, in combination with the grainer H, the pipes P and the inlet and exit pipes P1 and P3, in the manner as and for the purpose described. 5th. The dam, in combination with the grainer H, the flippers W, the arms U, and means for supporting and rotating them, in the manner as and for the purpose described. 6th. The combination of the tubular steam heated heaters A, B, the gravel box F, the evaporators D and E, the grainer H, the heater C, with the pump A3, and connecting pipes, in the manner as and for the purpose described. 7th. The combination of the grainer H, the agitator arms W, the pendent parts D, C, d, and the shaft T, in the manner as and for the purpose described. 8th. The combination of the heaters A, A1, with the gravel boxes F, G, the heater B, the pump A3, and connecting pipes, in the manner as and for the purpose described. 9th. The combination in a grainer, of a series of rakes provided with scrapers submerged in the brine, a series of agitators provided with flippers above the brine, and shafts T and K, in the manner as and for the purpose described. 10th. The combination of the grainer H, the suction pipe P3, the jacket pipe P2 enclosing it, the heater C, and the pump A3, in the manner as and for the purpose described. 11th. The combination of the pump A2, the pipe P4, with the pipe P3, the heater C, pump A3, and connecting pipes, in the manner as and for the purpose described. 12th. The combination of the grainer H, the inlet pipe P1, the exit pipe P, the pipes P, the dam, the rotating arms having scrapers, and the agitating arm provided with flippers, in the manner as and for the purpose described. 13th. The combination of the heaters A, A1, the

gravel boxes F, G, the evaporators D, E, the grainer H, heating pipes P, suction pipe P3, heaters B and C, with the pump A3, and connecting pipes in the manner as and for the purpose described.

No. 31,357. Boot or Shoe. *(Chaussure.)*

Justus W. French, Lynn, Mass., U.S., 14th May, 1889; 5 years.

Claim.—The herein described shoe, it consisting of an upper and lasting sole, cut and reduced in width along the ball portion thereof between the toe and shank portion, and having a lip b1, and an abutting edge b2 located within the edge of the line of the last in the direction of its width, the said upper being drawn against and stitched to the said abutting edges b2 along only the ball of the shoe, and an outer sole united to the upper by a line of fastenings which pass through and through the outer sole, the upper and inner sole about the toe of the shoe and along the shank thereof, the said fastenings employed to secure the outer sole in place passing through the upper and not through the lasting sole along the ball of the shoe, all substantially as described.**No. 31,358. Envelope and Stamp Moistener.***(Humecteur d'enveloppe et de timbre.)*

Abraham J. Elias, Buffalo, N.Y., U.S., 14th May, 1889; 5 years.

Claim.—As an improved article of manufacture, an envelope and stamp moistener, consisting essentially of a flat, thin tube A having on its upper end, a circular enlargement B, provided with a screw-cap C, said tube having on its lower end, an inwardly projecting neck or stricture a, and being fitted with a flat wick of woven fabric reaching to within a short distance of the circular enlargement, the whole being constructed and combined in the manner as and for the purpose set forth.**No. 31,359. Crystallizing Frame.***(Enseigne de cristal.)*

Albert E. Beller, Ogden, U.T., U.S., 14th May, 1889; 5 years.

Claim.—1st. A crystallized monogram or other like frame, consisting of an open frame provided with the strips b arranged within the frame to support and form the characters of the design, and crystals applied to the frame and to the design thereof, substantially as described. 2nd. As an improved article of manufacture, a crystallized monogram, or other like frame, consisting of an open frame provided with strips b arranged to support and form the characters, of the design, a fibrous covering for the portions of the frame intended to be incased with crystals, and the crystals applied to the said covered portions, as set forth.**No. 31,360. Loom.** *(Métier à tisser.)*

John L. Brook, Simcoe, Ont., 14th May, 1889; 5 years.

Claim.—1st. In a loom the pickers connected by cords to a pivoted lever extending across the face of a pulley, on the face of which a projecting stud is fixed, in combination with mechanism arranged to periodically revolve the said pulley, so as to cause its stud to strike the pivoted lever, and through the cords cause the pickers to move and operate the shuttle, as specified. 2nd. The weighted and flattened friction pulley K journaled on a stud fixed to the lay A, and arranged to mesh with the friction pinion J, deriving motion from the main driving-shaft of the machine, a stud U extending from the face of the pulley K and a pin R extending from the opposite side of the pulley K, and passing the longitudinally-adjustable rod S, in combination with the said rod S, connected to the pivoted lever X, and wedge-shaped plate Y pivoted in the frame of the machine, and extending through the bail f fixed to the lay of the loom, the pivoted lever L extending across the face of the pulley K, and connected to the pickers P by the cords N, and operated substantially as and for the purpose specified.**No. 31,361. Type Writing Machine.***(Graphotype.)*

Frederick G. Tilton, Boston, Mass., U.S., (assignee of J. dela Cruz Escobar, Matanzas, Cuba), 14th May, 1889; 5 years.

Claim.—1st. The type disk having two sets of flexible types at its edge, a pivot for such type disk, and the index plate, in combination with the printing mechanism, the centering arc and arm for moving the same and the type disk, the pinion gear wheel, connecting rod, finger plate, and spring for moving the disk in relation to the centering arc, and a stop for limiting the motion in either direction, substantially as set forth. 2nd. The combination in a type writing machine, with the means for moving the paper and giving the impression, of a type disk having two sets of characters, an index plate and pivot for supporting the disk, a centering arc and arm above the type disk, and an arm below the type disk, the two arms being connected outside the edge of the index plate, so as to move together, gearing below the type disk, and finger plate and connecting mechanism supported by the arm and serving to turn the type disk in one direction or the other relatively to the centering arc, and a stop to limit the motion and cause either one set or the other of the type to occupy the correct position relatively to the centering disk, substantially as set forth.**No. 31,362. Apparatus for Manufacturing Gas.** *(Appareil à gaz.)*

William G. Wood, Detroit, Mich., U.S., Thomas A. Bourke, John A. Smith, Charles H. DeJesse, John McArdle and George S. Duncan, Windsor, Ont., 15th May, 1889; 5 years.

Claim.—1st. In an apparatus for manufacturing fuel or illuminating gas, the combination of the air-pump or blower A, the generator B, the gas holder C, the connections D, E and G between said generator and gas holder, and the charge for generating hydrogen gas and

carbureted air simultaneously, substantially as described. 2nd. The combination, with the air-pump, gas holder and generator connected and arranged substantially as described of the alternate layers of iron and zinc turnings, sulphate of copper, and sponge, and the generating acid and hydro-carbon, substantially as described. 3rd. The combination, of the air-pump A, the generator B, the valved pipes D, E and G, the perforated pipe F, the valved pipe I, the pump K connected thereto, and the charge in the generator adapted to generate hydrogen and carbureted air, in the manner substantially as described. 4th. The combination, with the air-pump A, the generator B connected thereto as described, and having the generating charge adapted to generate hydrogen and carbureted air, substantially as described, of the zinc and copper rods Q and R, and the electrical generator P, all arranged to operate substantially as described.

No. 31,363. Art or Process of Manufacturing Gas. (*Art ou procédé de production du gaz.*)

William G. Wood, Detroit, Mich., U.S., Thomas A. Bourke, John A. Smith, Charles H. Delisle, John McArdle and George S. Dunoon, Windsor, Ont., 15th May, 1889; 5 years.

Claim.—1st. The herein described method of manufacturing fuel or illuminating gas, consisting in generating carbureted air and hydrogen gas in such intimate contact with each other in the same generator, that the hydrogen may chemically combine in its nascent state while the hydro-carbon gas produced by carbureting atmospheric air, substantially as described. 2nd. The herein described method of manufacturing fuel or illuminating gas, consisting in generating hydrogen gas and carbureted air in intimate contact with each other in the same generator, and under the constant influence of galvanic current produced in the generator itself, and an exterior current intermittently applied to produce electrolysis, substantially as described.

No. 31,364. Harrow. (*Herse.*)

The Rogers Fence Company, (assignee of Timothy Rogers), Springfield, Ohio, U.S., 15th May, 1889; 5 years.

Claim.—A harrow composed of two or more sections, each section consisting of a draught bar A, reversible sections constructed of the bars E, longitudinal bars G, a brace H, socket plates J having ribs K and L, socket plates M having flanges O, and vertical walls P, two sockets Q, upper and lower flanges S, vertical and inclined walls T and U, bolts R, sleeves V, trunnions W, screws X, and teeth, runners Y, hooks and eyes D and C, all formed and combined as hereinbefore set forth.

No. 31,365. Window Blind Fastener.

(*Arrête-store de fenêtre.*)

George J. Frost and George Dickson, Toronto, Ont., 15th May, 1889; 5 years.

Claim.—The combination, with a window-blind and roller, of a spring metal clasp bent to conform to and spring into the window-roller, the said clasp having legs with spike-shaped toes, substantially as and for the purpose specified.

No. 31,366. Button Hole Attachment for Sewing Machines. (*Appareil à boutonnières pour machines à coudre.*)

Harris Button Hole Attachment Company, (assignee of Henry J. Williams), New York, N.Y., U.S., 15th May, 1889; 5 years.

Claim.—1st. In a button-hole attachment for sewing machines, the combination, substantially as hereinbefore set forth, of the bed-plate, the feed-plate having a longitudinal slot *g* at its rear end, the toothed rack above the slot and around its edge, the driving-pinion engaging with the rack, the guide-blocks at each end of the slot, and the hooks hinged to the bed-plate and engaging with opposite side of the feed-plate, for the purpose specified. 2nd. In a button-hole attachment for sewing-machines, the combination, substantially as hereinbefore set forth, of the bed-plate, the feed-plate, the toothed rack on the feed-plate, the driving pinion engaging therewith, means for driving the pinion, and the hooks hinged to the bed-plate, and engaging with opposite sides of the feed-plate for holding the pinion in engagement with the rack. 3rd. In a button-hole attachment for sewing machines, the combination, substantially as hereinbefore set forth, of the bed-plate, the feed-plate, the toothed rack on the feed-plate, the driving-pinion engaging with the rack, the hooks hinged to the bed-plate, and engaging with opposite sides of the feed-plate, the block having an inclined lower face *o* secured to the feed-plate for disengaging the hooks at one extremity of the longitudinal movement of the feed-plate, said feed-plate being provided with a curved or rounded end to allow the hooks to disengage themselves at the other extremity of its longitudinal movement.

No. 31,367. Furniture Caster.

(*Roulette de meuble.*)

Louis Hammel, (assignee of Ephraim Hambuier), Detroit, Mich., U.S., 15th May, 1889; 5 years.

Claim.—An improved caster formed of the ball B, the frame constructed in two halves slidingly engaging with each other by a dovetail tenon, and mortice formed on the dividing plane, the globular shell cut away upon opposite sides of the dividing plane, and the bearing I, the parts being arranged and constructed substantially as described.

No. 31,368. Punching Device. (*Poinçon.*)

Anson W. Payne, Henry E. DeLano and Adelbert G. Councilman, Maine, N.Y., U.S., 15th May, 1889; 5 years.

Claim.—1st. A punch for gumming saws mounted on a traveling frame, and adapted to swing over into the same, substantially as and for the purpose set forth. 2nd. The combination, of the punch frame, the arms C extending rearward therefrom, and having a pivotal connection therewith, and the hinged brace connecting the arms C, and the punch frame when extended, substantially as specified. 3rd. The combination of the punch frame, the punch having an offset on its rear side, a coiled spring fitted on said offset, an adjustable stop on the offset to vary the tension of the spring, and a cam-lever bearing on the upper end of the punch, substantially as specified.

No. 31,369. Lubricator for Car Axles.

(*Boîte à graisse.*)

Thomas H. Wright, Sandwich, Ont., (assignee of Arthur W. Wright, Detroit, Mich., U.S.), 15th May, 1889; 5 years.

Claim.—A car axle lubricator consisting of inner walls A, outer walls *a*, feeders B and bars E, all formed and combined substantially as and for the purpose hereinbefore set forth.

No. 31,370. Commode. (*Siège d'aisance.*)

Jesse Kinney and Julian G. Dickinson, Detroit, Mich., U.S., 15th May, 1889; 5 years.

Claim.—1st. In a commode or water closet, the cover provided with a disinfectant receptacle secured thereto, substantially as described. 2nd. In a device of the kind described, a seat cover hinged thereto and provided with a detachable disinfectant receptacle, and provided with suitable perforation for admitting the disinfectant into the pail, substantially as described. 3rd. In a commode or similar device, the combination of the pail A provided with the perforated shelf M, the seat C provided with the shoulder D, the gasket E, the upper gasket J, of the hinged cover thereto, and provided on its under side with a disinfectant receptacle, substantially as described.

No. 31,371. Railway Ticket.

(*Billet de chemin de fer.*)

Peter E. McDonald and S. O. Brooks, Detroit, Mich., U.S., 15th May, 1889; 5 years.

Claim.—1st. A railway ticket holder, constructed with an elongated orifice in one of its faces, substantially as and for the purpose described. 2nd. A railway ticket holder, provided with folding covers, one of said covers constructed with an elongated orifice, substantially as and for the purpose described. 3rd. A railway ticket holder having in combination therewith a coupon ticket inclosed therein, said holder closed at its ends and provided with an elongated orifice on one of its faces to permit the outward movement of the ticket through said orifice, substantially as described. 4th. A railway ticket holder constructed with an elongated orifice in one of its faces, and having in combination therewith, a bar located upon the edge of said holder forward of said orifice, substantially as described. 5th. A railway ticket holder provided with an elongated orifice having in combination therewith, a bar upon its outer edge, and a coupon ticket located in said holder, said bar located at a little distance from said orifice, a portion of the holder being left between the orifice and bar, substantially as and for the purpose described. 6th. A railway ticket holder provided with an elongated orifice having in combination therewith, a coupon ticket and a bar, said bar freed from the transverse edge of the holder to permit the passage of the ticket between it and the holder, substantially as described. 7th. A railway ticket holder provided with folding covers, one of said covers provided with an elongated transverse orifice, and in combination therewith, a fastening device to hold said covers together, substantially as described. 8th. A railway ticket holder provided with folding covers having in combination therewith, an inclosed mileage ticket, one of said covers constructed with raised margins at the sides and ends to form a pocket for said ticket, and the other cover provided with an elongated orifice through which the ticket may be moved outward, substantially as described. 9th. A railway ticket holder provided with folding covers having in combination therewith, a folded ticket, one of said covers constructed with raised margins to form a pocket to receive said ticket, and a retaining strip C, substantially as described. 10th. A railway ticket holder provided with a mileage scale, substantially as described. 11th. A ticket holder having a coupon ticket in combination therewith, said holder provided with an orifice through which said ticket may be projected, and constructed to form a bearing for the thumb upon said ticket to operate said ticket, substantially as described. 12th. A ticket holder having a coupon ticket in combination therewith, said holder provided with an orifice through which said ticket may be projected, and a margin *o* abutting against the ticket, said holder constructed to form a bearing upon the ticket to operate the ticket, substantially as described. 13th. A ticket holder having a coupon ticket, in combination therewith, said holder constructed with covers embracing the ticket, one of said covers provided with an orifice through which the ticket may be projected, substantially as described.

No. 31,372 Plane. (*Rabot.*)

Wilhelm Meister, Apolda, Germany, 17th May, 1889; 5 years.

Claim.—A plane in which the iron does not entirely pass through the stock, but is adjustably secured by screws on a bedplate in the stock, substantially as described.

No. 31,373 Store Counter and Office Stool.*(Banc de magasin et de bureau.)*

George Scott, Montréal, Qué., 17th May, 1889; 5 years.

Claim.—In a store counter stool, and in combination with the seat, the hub and foot plate A and A', bracket B with sleeve B', and socket H, cap C and screw bolt D, ring E, plate G, stud I, dog J and lip K, all substantially as herein described and set forth.

No. 31,374. Coating Compound. (Badigeon.)

John F. Martin, Chicago, Ill., U.S., 17th May, 1889; 5 years.

Claim.—A coating compound composed of a base or body, composed of common glue, sulphur, paris white, and zinc, white compounded, substantially as and for the purposes set forth.

No. 31,375. Spring Vehicle. (Voiture à ressorts.)

Henry A. Moyer, Syracuse, N.Y., U.S., 17th May, 1889; 5 years.

Claim.—The connection of the hind running gear with the front runner gear, by means of two reaches connected intermediately to the side springs of the vehicle.

No. 31,376. Roller Quartz Mill.*(Moulin à quartz à rouleaux.)*

John M. Bryan, San Francisco, Cal., U.S., 17th May, 1889; 5 years.

Claim.—1st. In a roller quartz mill, the mortar having a circular die or crushing surface, and flaring walls and outer wall having screened openings, the upright post fixed in the centre of said mortar, the horizontal plate centered on and adapted to rotate on said post and having boxes for axes of crushing rollers on its upper face, the crushing rollers with axes journaled in the said boxes, and the horizontal driving pulley travelling on said centre-post and adapted to drive the crushing rollers, either by being attached directly to the horizontal plate, or by resting directly upon the tops of the said rollers and driving them by frictional contact, all in combination and for operation as hereinbefore set forth. 2nd. In a roller quartz mill, a mortar having a fixed centre-post, and a horizontal rotating plate centred upon and arranged to travel around said post, provided with axle-boxes on its upper surface to take the axes of upright crushing rollers, in combination with a horizontal driving-pulley adapted to rotate on said post as a centre and to drive the crushing rollers, substantially as hereinbefore set forth. 3rd. In a roller quartz mill, having an annular crushing space, and crushing rollers travelling therein, the combination of spring arms L, L adapted for attachment to the parts that carry the rollers, and the scrapers K, K, fixed on said arms and capable of adjustment, as described.

No. 31,377. Dental Drill. (Foret dentaire.)

Adelbert H. Winn, Nashville, Mich., U.S., 17th May, 1889; 5 years.

Claim.—In a dental drill, a driving shaft and a shaft having the tool attached, in combination with bearings connected by a hinge joint and adjusted by a worm gear and screw, and gears having semi-circular interlocking teeth, substantially as described.

No. 31,378. Bridle. (Bride.)

Herbert H. McLean, L'Etéte, N.B., 17th May, 1889; 5 years.

Claim.—A bridle having the cheek straps and cheek reins connected to a spring snap, comprising the flat U-shaped springs C, C', having punched journal bearings 2, the flat journal D in said bearings, the flat tongue E having one end turned around said journal, and the band F bent around the crown of the springs, as set forth.

No. 31,379. Musical Skipping Rope Handle.*(Manche musical de corde à sauter.)*

John N. Pringle, Belleville, Ont., 17th May, 1889; 5 years.

Claim.—1st. The combination of the handle A with the skeleton frame D, D, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the frame D, D and steel spring E, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, with the spring E and the cog wheel R, substantially as and for the purpose hereinbefore set forth.

No. 31,380. Station Indicator.*(Indicateur de station.)*

Joseph R. Angel, Bald Mount, Penn., U. S., 17th May, 1889; 5 years.

Claim.—As an improvement in station indicators, the combination of the casing B having the sockets O, the shafts I, I having angular inner ends, the belt carrying rollers K having recesses L, the pintles M adapted to engage the sockets O, and the springs N normally projecting the pintles outward to engage the socket, as specified.

No. 31,381. Oil Lamp. (Lampe à huile.)

Charles D. Aria, London, Eng., 17th May, 1889; 5 years.

Claim.—1st. In burners for railway roof, reading, wall, ring, stand, carriage and other like lamps, a secondary reservoir traversed by a vertical air tube, said tube being arranged to extend within the wick case, or to just below the under edge of the same, substantially as described and shown and for the purposes specified. 2nd. The combination, with a secondary reservoir traversed by a central vertical air tube, of an open or skeleton frame or support to receive the wick case, and to maintain it at a safe distance from the oil in said secondary reservoir, while allowing free passage of air to such oil

and to the wick case, substantially as described and shown. 3rd. In burners for lamps of the kind referred to, the combination of a secondary reservoir traversed by a central vertical air tube, an open or skeleton frame or support, and a wick case detachably connected to said support, substantially as and for the purposes specified.

No. 31,382. Stove Pipe Thimble.*(Dé de tuyau de poêle.)*

Alexander Staub, Fort Wayne, Ind., U.S., 17th May, 1889; 5 years.

Claim.—1st. In a stove pipe thimble, the combination, with the plates 21 and 41 and the cylinders 9 and 10, of the plates 11 and 19, and the cylinders 22 and 23, all formed substantially as shown and described and the wires 71 and 24, as and for the purposes set forth. 2nd. In a stove pipe thimble, the combination, with the plate 21 and cylinder 10, of the plates 11 and 19 and the cylinder 22, all formed substantially as shown and described, and the wires 24 as and for the purposes set forth.

No. 31,383. Collapsible Chair.*(Fauteuil brisé.)*

Herbert L. Whitehead, Indianapolis, Ind., U.S., 17th May, 1889; 5 years.

Claim.—As an article of manufacture, a chair composed of a seat frame S, hinge bars b, braces 2 and 3, back frame B pivoted at 2 to the seat frame, jointed bars b, jointed braces l, uprights 2 and a rack r provided with notches on the rear of the seat frame S, all formed and combined substantially as and for the purpose hereinbefore set forth.

No. 31,384. Liquid and Pneumatic Door Check. (Ressort de porte à liquide et pneumatique.)

Henry A. House and Henry A. House, Jr., Bridgeport, Conn., U.S., 17th May, 1889; 5 years.

Claim.—The combination, with the compressing piston D and the central spindle B having ports a, b above and below said pistons, and a vertical channel H connecting said ports, of the stem F and vertically adjustable cap H, the valve disk G and the coil spring K, substantially as set forth.

No. 31,385. Rear Sight for Fire Arms.*(Visière pour armes à feu.)*

Daniel V. Bean, Plover, Wis., U.S., 17th May, 1889; 5 years.

Claim.—A rear sight of white material, having a curved or depressed upper surface, and an underlying dark spot at the central point of said depression, said spot being in contradistinction to a vertical line.

No. 31,386. Rosette for the Harness of Horses. (Rosette pour les harnais.)

Ernest F. Pflueger, Akron, Ohio, U.S., 17th May, 1889; 5 years.

Claim.—An improved article of manufacture, consisting of a harness mounting, comprising a transparent plate of glass having roughened edges, and a substance, such as ground pearly, gold or silver leaf applied in an ornamental manner to the back of the glass, a metal back shape to correspond to the glass plate and having a fastening loop or loops, and a sheet of material also similarly shaped to the glass plate interposed between the back and glass plate, and these parts held together by a metal edging overlapping the face and back concealing the roughened edges of the transparent plate.

No. 31,387. Medicated Sweat Pad.*(Collier de cheval hygiénique.)*

Ernest F. Pflueger, Akron, Ohio, U.S., 17th May, 1889; 5 years.

Claim.—The medicated sack-pad for harness, consisting of the medicated cloth sides, and an intermediate flattened layer of ground cork and astringent chemicals with starch and carbolic acid, said sides being held together by edge stitches and by quilting seams through said intermediate layer, substantially as specified.

No. 31,388. Hame Tug. (Mancelle.)

George W. Moliere, Ocean View, Cal., U. S., 17th May, 1889; 5 years.

Claim.—A hame tug, consisting of a hollow leather casing for the reception of the entire end of the trace, a metal eye or clip with shanks extending along the inside walls at the leather casing, and leaving space between them for the trace, and set screws passing through the hollow casing, the extended shanks and the trace, substantially as shown and described.

No. 31,389. Temporary Binder.*(Reliure mobile.)*

George A. Harvie, Windsor, N.S., 17th May, 1889; 5 years.

Claim.—A temporary binder, consisting of a bar A provided with stationary flexible metallic prongs A1, and a bar B provided with perforations to receive the prongs and nail heads C to hold the prongs when bent after filling, as set forth.

No. 31,390. Scavenging Incinerator.*(Foyer consommant les ordures.)*

Rodias Ouimette and Géléas Lavoie, Montréal, Qué., 20th May, 1889; 5 years.

Claim.—1st. In a scavenging incinerator, the steam pipes X communicating at d with an injector at e, with the steam drum f through

the pipe *g*, steam drum *f* having a pressure gauge *h* and pipe *i*, substantially as described and for the purpose set forth. 2nd. In a scavenging incinerator, the combination of the steam pipes *X* and accessories with the casing *K*, projections *c* and *b*, fire boxes *P*, *Q*, *R* and *S*, grates *V* and *W*, ash pits *V1* and *W1*, spaces or apertures *t*, *s* and *st*, wall *Pe*, doors *a*, *e*, *r*, *v* and *w*, substantially as described and for the purposes set forth.

No. 31,391. Safety Attachment for Vehicle Poles. (*Appareil de sûreté pour les timons des voitures.*)

Charles W. Eunson, Emerald Grove, and David Conger, Janesville, Wis., U.S., 20th May, 1889; 5 years.

Claim.—The combination, with the casting *D*, of a latch pivoted within a vertical recess formed in the lower portion of the casting, and a spring adjusted within a chamber or recess formed within the upper portion of the latch and adapted to actuate the same, all arranged and operating substantially as described and for the purpose specified.

No. 31,392. Cutter for Making Rosettes. (*Découpoir pour faire les rosettes.*)

Joseph Paquette (assignee of Victor Lahaie), Montréal, Qué., 20th May, 1889; 5 years.

Claim.—A cutter *A* for making rosettes, composed of the holder *E*, horizontal plate *D*, rests *B* and *C*, to which is attached the cutters *F* and *F'* by means of the screws *H*, substantially as described and for the purposes set forth.

No. 31,393. Bank Account Book. (*Livret de banque.*)

Walter Thomson and D. B. Shotwell, Fargo, Dak., U.S., 20th May, 1889; 5 years.

Claim.—1st. The bank account book *A*, having a suitable number of full leaves *C*, an alternate series of short leaves *B*, each of said short leaves having margin *b*, creased or perforated at *b'*, substantially as and for the purposes set forth. 2nd. The bank account book herein described, composed of alternate long and series of short leaves, the several long leaves prepared to receive the depositors' names on the left hand side, and both also prepared to receive the accounts for several successive days, the right-hand end of each of said short leaves, having a margin adapted by folding to receive the last day's balance, which margin is adapted by straightening out to form the beginning of the next day's account on the next page.

No. 31,394. Harness Pad Hook. (*Crochet de collier de cheval.*)

George A. Triggerson, Brantford, Ont., 21st May, 1889; 5 years.

Claim.—The pad hook *A* having a cavity on the top side, in which the layer *Clays*, the bolt *B*, washer *C*, all formed and combined as and for the purpose hereinbefore set forth.

No. 31,395. Door Check. (*Ressort de porte.*)

John J. Krom, St. Augustine, Fla., U.S., 21st May, 1889; 5 years.

Claim.—In a door check, the combination of a vertically-movable rod, a lever fulcrumed at one end at a point immediately above the rod, a spring for normally pressing the rod in one direction, and a sliding link pivoted to the lever at one side of the fulcrum thereof, and have a sliding connection with the vertically-movable rod to be capable of a limited movement longitudinally of the same, substantially as described for the purpose set forth.

No. 31,396. Tablet for Receiving Sound Records. (*Tablette pour recevoir l'empreinte des sons.*)

Charles S. Tainter, Washington, D.C., U.S., 21st May, 1889; 5 years.

Claim.—A tablet for receiving sound records, having a recording surface, composed of a mixture of carnauba wax and a softer wax, substantially as described.

No. 31,397. Tablet for Receiving Sound Records. (*Tablette pour recevoir l'empreinte des sons.*)

Charles S. Tainter, Washington, D.C., U.S., 21st May, 1889; 5 years.

Claim.—1st. A tablet for receiving sound records, having a recording surface composed essentially of osokerite wax, substantially as described. 2nd. The method of preparing osokerite wax for use in a sound recording tablet, by heating the same to approximately the temperature described until it loses about twenty per cent. of its weight, substantially as described.

No. 31,398. Vehicle Spring. (*Ressort de voiture.*)

Ellis M. Von Valkenberg and Frank L. Wood, Union Grove, Wis., U.S., 21st May, 1889; 5 years.

Claim.—An elastic band spring *C*, formed as described, in combination with a false bolster *F* connected movably to, and resting on, the spring, and a bolster *F* on which the spring is supported, substantially as and for the purpose set forth.

No. 31,399. Washing and Steaming Machine. (*Machine à blanchir à la vapeur.*)

Henry J. F. Rose, High Bluff, Man., 21st May, 1889; 5 years.

Claim.—1st. The combination, in a washing and steaming machine, of the two boilers or tanks *A* and *H*, the groove *C*, the ring *E* and

the lid *D*, for the purpose specified. 2nd. The combination of the two boilers or tanks *A* and *H*, the band *J* and the deflector *K*, all substantially as described. 3rd. The combination of the boilers *A* and *H*, with the tubular or channelled bottoms *B* and *I*, all substantially as set forth and described.

No. 31,400. Process of Manufacturing Round Reins, Bridles, Winker Braces and the like. (*Procédé de fabrication des guides, rênes, branches d'ocillères et autres choses semblables rondes.*)

Alonso Lobdell, Racine, Wis., U.S., 21st May, 1889; 5 years.

Claim.—The process herein described of making filled round bridles, reins, and the like, which consists in, first shaping the outer leather into a double U-form, then slipping the filling-strip into it, then sewing the outer strip and filling-strip together on lines on each side of the central opening, and finally splitting the two strips midway between the edges of the outside strip, and finishing each strip so made in the usual way, substantially as set forth.

No. 31,401. Singletree. (*Palonnier.*)

James R. Freeland, Wellsville, N.Y., U.S., 21st May, 1889; 5 years.

Claim.—The combination of the singletree provided with a rearwardly-projecting bail or segment having two stops or offsets, the bolt upon which the singletree is pivoted and on which it draws, and the rearwardly-projecting bail or segment fastened at opposite ends to opposite ends of the bolt, and provided with an offset or shoulder overlapping and adapted to engage the shoulders on the rearwardly-projecting bail, substantially as and for the purpose shown and set forth.

No. 31,402. Bit for Dovetailing Holes Drilled in Rocks. (*Fleuret de mine à expansion.*)

William Hall, Port Colborne, Ont., 21st May, 1889; 5 years.

Claim.—1st. The bit *B* having the inclined plane enlargement *Br*, and the bit *C* having a projecting cutting edge *Ct* at the lower end, as set forth. 2nd. The combination of the bit *B* having a sleeve *Ba* and inclined enlargement *Br*, and the jumper bit *C* having a cutting edge *Ct*, offset from the lower end, and operated as set forth.

No. 31,403. Rubber Boot. (*Botte de caoutchouc.*)

Mary T. Wyncoop, Utica, N.Y., U.S., 21st May, 1889; 5 years.

Claim.—A boot-leg open in front and having the flaps *A* and *H* *b* on opposite sides, the said flaps being adapted to close one upon the other when the boot-leg is closed, and the gore or tongue *B* having its edges attached to the inner sides of the flanges *a* and *b*, substantially as described.

No. 31,404. Car Door Opener.

(*Ouvreuse de porte de char.*)

Heinrich Sommerfeld, Canton, Ohio, U.S., 21st May, 1889; 5 years.

Claim.—The lever *A* provided with slot *B*, in combination with door *L*, bolt *c* and pivot *b*, substantially as shown and described.

No. 31,405. Door Check. (*Arrête-porte.*)

Benjamin A. Mitchell, Jr., Philadelphia, Penn., U.S., 21st May, 1889; 5 years.

Claim.—1st. A door check consisting of a yoke *A1*, having jaws *A* and spring *B*, all formed and combined as shown and described. 2nd. In a door check consisting of the yoke *A1*, jaws *A* and spring *B*, the wedge *C* connected with said yoke, all formed and combined as shown and described.

No. 31,406. Process of Obtaining Manganese Alloys. (*Procédé de production des alliages de manganèse.*)

Orlando M. Thowless, Newark, N.J., U.S., 21st May, 1889; 5 years.

Claim.—That improvement in the process of obtaining alloys of manganese, which consists in mixing ferro-manganese with silex, a metal and a flux in substantially the proportions specified, subjecting the mixture to heat in a suitable receptacle and separating the alloy from the contents of the vessel by pouring it out of the receptacle in a liquid form, substantially as described.

No. 31,407. Rivet Set and Header.

(*Poinçon-tête et rivet.*)

William Lowe, Glendive, M.T., U.S., 21st May, 1889; 5 years.

Claim.—1st. As an improved article of manufacture, a rivet set and header consisting of a body portion *A* having a slot *B*, and a perforation extending from the base thereof to the face of the implement, substantially as shown. 2nd. The improved rivet set and header consisting of a body portion *A*, provided with a slot having an inclined rear wall and straight side walls, a perforation *b* extending through the lower end of the implement, and communicating with the slot, and a recess *a*, substantially as shown and for the purpose set forth.

No. 31,408. Manufacture of Fuel from Coal Slack and Similar Substances. (*Fabrication des agglomérés combustibles de charbon et autres substances similaires.*)

John Bowling, London, Eng., 21st May, 1889; 5 years.

Claim.—1st. In the process of manufacturing fuel from coal and coke slack, breeze and similar substances, agitating the mixture of

tar or pitch, or tar and pitch, and coke or coal dust in the presence of an excess of water, for the purpose specified. 2nd. The process of manufacturing fuel from coal and coke slack, breeze and similar substances, by mixing the same with water and tar or pitch, and treating the mixture, all substantially as described.

No. 31,409. Tablet for Use in Graphophones.
(*Tablette à l'usage des graphophones.*)

Charles S. Tainter, Washington, D.C., U.S., 21st May, 1889; 5 years.
Claim.—A graphophone tablet comprising a paper cylinder formed by two or more separate helically wound strips cemented together, and covered with a coating of wax or a wax-like composition, substantially as hereinbefore described.

No. 31,410. Working and Ground Interlocking of Railway Point and Signal Apparatus. (*Appareil de manœuvre et de raccordement des aiguilles et signaux de chemins de fer.*)

Joseph Hill, Walworth, William Smith, Herne Hill, and John P. O'Donnell, New Malden, Eng., 21st May, 1889; 5 years.

Claim.—1st. The apparatus or ground gear for railroads comprising A B and C, wherein a selector bar B with a kind of sideways or radial motion (engaging with A whilst disengaging with C, or conversely engaging with C whilst disengaging with A) derived from the switch point stretcher bar (or in certain cases a substitute therefor) becomes the medium, whereby locking, detaching and signalling actions may be performed by one single lever in lieu of two or more. 2nd. Applying a secondary set of ground locking gear D E F crossways to a primary set A B C of ground locking gear, or to the connections of the two signal-side bars A and C of the latter. 3rd. The normal locking bar Q, as an optional addition to the above ground gear when use crosswise to an actual switch point stretcher bar, which normal locking bar moreover causes as above described, safety ensuring actions by being sympathetically connected with A and C. 4th. The forms of switch point stretcher bars H, H', working in conjunction with the ground locking or lever saving gear A B C above referred to, having apertures or openings, as b, c, for the unique purpose of carrying selector bars, such as B or E, and other openings, as h₁, h₂, or block pieces, as g, for locking and detaching purposes.

No. 31,411. Car Coupler. (*Attelage de chars.*)

Samuel Byrne, Toronto, Ont., 22nd May, 1889; 5 years.

Claim.—In a car coupling, the combination, with the drawhead A, of the plate G, and the link C, formed and arranged substantially as shown and described.

No. 31,412. Extension Seat for Pew Ends.
(*Rallonge de siège pour bancs d'églises.*)

George F. Bambridge, Toronto, Ont., 22nd May, 1889; 5 years.

Claim.—1st. A pew end b and c, substantially as and for the purpose hereinbefore set forth. 2nd. An extension seat, consisting of back d, seat e and brace f, to fold and shut into lower part of pew end, substantially as and for the purpose hereinbefore set forth.

No. 31,413. Car Coupling. (*Attelage de chars.*)

Charles Pouliot, Saint Charles, Que., 22nd May, 1889; 5 years.

Claim.—1st. The combination of a coupling, having the chamber C, hook latch A and spring G, rod K and lever L, with the hook link F, having the hooks E and lugs H, substantially as shown and described. 2nd. The combination of a coupling, having the hook latch A and spring G, with the pin I projected through the top of the coupling and into the hook latch A, and holding an ordinary loop coupling link, substantially as shown and described. 3rd. The combination of a car coupling, having the hook latch A, chambers C and J, rod K and lever L, with a hook link having converged ends, hooks E and lugs H, substantially as shown and described.

No. 31,414. Brush Holding Cabinet.
(*Buffet pour les pinceaux.*)

Samuel Hall, St. John, N.B., 22nd May, 1889; 5 years.

Claim.—1st. A cabinet, having a brush holder arranged within the same, substantially as shown and described. 2nd. The combination, with a cabinet arranged to contain liquid in its lower part, of a series of brush holders arranged within the same, substantially as shown and described. 3rd. A brush holding cabinet, consisting of a receptacle adapted to contain liquid in its lower portion, a door arranged in one side of the cabinet, and a brush holding device arranged within the case, substantially as and for the purpose described. 4th. An air-tight brush holding and carrying cabinet, consisting in a receptacle having the door in one side, said door being provided with a suitable packing, and a brush holding device carried within the receptacle, substantially as shown and described. 5th. An air-tight brush holding case, consisting of a rectangular case having its lower portion divided into two compartments by a vertical partition, a door hinged to the case and provided with a suitable packing, and a brush holder arranged within the case, substantially as described. 6th. An air-tight brush holding and carrying case, consisting of a suitable receptacle, and having its bottom portion lined with metal, and formed with an opening for the introduction of the brushes, a door hinged to the case, provided with a suitable packing and adapted to close the opening, and a brush holding device arranged within the case, substantially as shown and described.

No. 31,415. Car Coupling. (*Attelage de chars.*)

William T. Andrews, Winnipeg, Man., 22nd May, 1889; 5 years.

Claim.—In a car coupling, hook A₁, pin B₁, block d, spring e, chain f₄ and lever G, all formed and combined and set forth and shown.

No. 31,416. Machine for Washing Clothes.
(*Machine à blanchir le linge.*)

Warren Fowles, Mexico, Mo., U.S., 22nd May, 1889; 5 years.

Claim.—The washing machine cylinder A, having openings B in its periphery and sides, each of which openings has a raised edge lip b, and a flaring and concave edge lip b₁, substantially as described and for the purpose hereinbefore set forth.

No. 31,417. Car and Locomotive Engine Replacing Frog. (*Appareil pour remettre les chars et locomotives sur la voie.*)

Burt E. Tilden, Cleveland, Ohio, U.S., 22nd May, 1889; 5 years.

Claim.—1st. A car and locomotive replacer, composed of segmental shell, having walls C and C₁ of different relative heights, and a curved or segmental top C₂ uniting the upper edges of the walls C and C₁, and having braces E uniting the walls C and C₁ and bracing the top C₂, the lower edge of the walls being widened and having spurs D and D₁, also F and F₁, the curved top having at each end a transverse spur g, and having carrying handle G, substantially as described. 2nd. A car and locomotive replacer, having a wear plate H secured to the inclined surface of a segmental shell, substantially as described and for the purpose set forth.

No. 31,418. Nut Lock. (*Arrête écrou.*)

Joseph D. Cleek, Abington, Va., U.S., 22nd May, 1889; 5 years.

Claim.—In a nut lock, the combination of the grooved bolt, the key adapted to fit in said groove, and having the outwardly turned foot, the nut having the outwardly sloping ratchet notches around the outer end of the threaded opening, and the annular recess around the inner end of said opening, all as shown and described.

No. 31,419. Portable Steam Boiler.
(*Chaudière à vapeur portative.*)

William T. Bate, Conshohocken, Penn., U. S., 22nd May, 1889; 5 years.

Claim.—1st. The combination of the shell of the boiler, comprising the tubed cylindrical barrel and tubed depending leg at the rear, with opposite water chambered cheek-pieces extending forward from the depending leg of the boiler and forming the sides of the fire-box, each cheek-piece being a self-contained independent structure outside of and forming a joint with the barrel and leg of the boiler, all substantially as specified. 2nd. The combination of the shell of the boiler, comprising the tubed cylindrical barrel and tubed depending leg, with the fire box casing having a front plate conforming to the shape of the cylindrical barrel, a back plate conforming to the shape of the depending leg and opposite water chambered cheek-pieces extending forward from said depending leg and forming the sides of the fire-box, each cheek-piece being a self-contained independent structure outside of, and forming a joint with the barrel and leg of the boiler, all substantially as specified. 3rd. The within described water-chambered cheek-piece for the fire-box of a steam boiler, the same consisting of a jointless rectangular frame forming the top, bottom and ends of said cheek-piece, and opposite side plates secured to said frame, so as to form therewith a hollow rectangular slab, all substantially as specified.

No. 31,420. Foot Guard. (*Garde-pied.*)

Thomas A. Griffin, Chicago, Ill., U.S., 22nd May, 1889. 15 years.

Claim.—A foot guard for railways, consisting of a T-shaped piece of metal, the head of the T being adapted to extend from rail to rail, and the stem of the T being adapted to substantially bisect the space between the rails.

No. 31,421. Waterproof and other Garments
(*Vêtements imperméables et autres.*)

Joseph J. Byers, New York, N.Y., U.S., 22nd May, 1889; 5 years.

Claim.—1st. A shoulder form for garments, comprising a base piece having ventilating perforations, an arched form secured to the base piece and open at the outer end, and a sliding piece on the base piece having ventilating perforations coinciding with the ventilating perforations in the latter, substantially as described. 2nd. A shoulder form for garments, comprising a base piece having ventilating perforations and cord holes, an arched form secured to the base piece and open at the outer end, and a sliding piece on the base piece having ventilating perforations coinciding with the ventilating perforations of the latter, and provided with pull cords extending through the cord holes, substantially as described. 3rd. The combination of a garment, having a perforated shoulder piece and cord holes G, the perforated longitudinally sliding piece C, having end cords D, an arched form B over the shoulder open at the outer end, and a covering B₁ over the form, substantially as described.

No. 31,422. Circular Weaving Machine.
(*Métier à tisser circulaire.*)

Canadian Rubber Company, Montreal, Que. (assignee of Alfred A. Brooks, Cambridge, and William O. Webber, Lawrence, Mass.), U.S., 22nd May, 1889; 5 years.

Claim.—1st. In a circular weaving machine, a travelling shuttle carrier having a shuttle thread or yarn guide secured to the shuttle

carrier to travel therewith, and having its end extended to the weaving point, but back of a radial line drawn from the centre of the shuttle carrier to the centre of the weaving pin, as and for the purposes described. 2nd. In a circular weaving machine, the combination of the weaving pin, the shuttle carrier adapted to be driven upon a circular track about the weaving pin, and a shuttle thread or yarn guide carried by the shuttle carrier and having its end extended backward from a radial line drawn from the centre of the shuttle carrier to the centre of the weaving pin, whereby the weaving point is brought or caused to be located upon the weaving pin back of such radial line, as and for the purposes specified. 3rd. The combination in a circular weaving machine, of the weaving pin, the shuttle carrier, a shuttle thread or yarn guide carried thereby, the said guide being arranged back of the radial line drawn from the centre of the weaving pin to the centre of the shuttle, and means for adjusting the horizontal position of the guide in relation to the weaving pin, as and for the purposes specified. 4th. The combination in a circular weaving machine of the weaving pin, the shuttle carrier, a shuttle thread or yarn guide carried thereby, the said guide being arranged back of the radial line drawn from the centre of the weaving pin to the centre of the shuttle, and means for providing the said guide with a vertical movement in relation to said weaving pin, substantially as described. 5th. In a circular weaving machine, the shuttle carrier adapted to be driven upon a circular track about the weaving pin, and having the thread or yarn guide as, as and for the purposes specified. 6th. In a circular weaving machine, the circular track *a*, at about the weaving pin on which the shuttle carrier is driven, the outer track *a* being lower than the inner track *a*, as and for the purposes specified. 7th. In a circular weaving machine, the rotary filling threads presenting guide *E* having the point *e* provided with a rounded outer surface, and a recess *E*₂ upon its inner surface, as and for the purposes specified. 8th. In a circular weaving machine, in combination with the weaving pin and with reciprocating weaving sheds or heddles, a rotary filling yarn or thread guide shaped to hold a number of warp threads from the filling while it is being fed and drawn to place in the circular fabric, whereby the filling may be laid in place under uniform tension before the warp threads are crossed thereon, and the warp threads then closed or shut quickly and tightly upon the same, as and for the purposes specified. 9th. The combination in a circular weaving machine of the bobbin *C*, the reciprocating heddles *B*, *B*₁ and the yielding take-up *d*₁ supported by the circular castings *d*₂, there being a separate take-up for each warp thread, as and for the purposes specified. 10th. In a circular weaving machine, the warp thread take-ups *d*₁, each comprising a rod having an eye at its outer end and through which the warp thread passes, and having the shank *d*₂ movable in the support *d*₃ in opposition to the spring *d*₆, as and for the purposes specified. 11th. The combination in a circular weaving machine of the shuttle tracks *a*, *a*₁ and the thread-holding pins *a*₂, with the shuttle carrier having the vertical rolls *a*₃, *a*₃ to run upon the tracks, and the horizontal rolls *a*₇, *a*₈ to run upon the pins, as and for the purposes specified. 12th. In a circular weaving machine, the combination of the weaving pin, the shuttle tracks *a*, *a*₁, the outer one *a*₁ being lower than the inner one, one or more shuttle carriers adapted to be driven upon said tracks, the heddles *B*, *B*₁, the pins *a*₂, yielding take-ups *d*₁ and a guide or point for determining the weaving point upon the weaving pin carried by the said shuttle or shuttle carrier, and arranged to bring the weaving point back of a radial line drawn from the centre of the weaving pin to the centre of the shuttle carrier, and shaped to hold the two sets of warp threads open for the better drawing of the filling or shuttle thread or yarn, and then adapted to release the said threads, so that they close upon the said filling threads or yarn with considerable snap or force, as and for the purposes specified.

No. 31,423. Mop Wringer. (*Essoreuse de torchon.*)

Arthur W. Burnham, Charles Gifford, Gardiner, Me., and Joshua W. Powell, Brooklyn, N.Y., U.S., 23rd May, 1899; 5 years.

Claim.—1st. The combination of the rigidly secured standard *G*₁, roller *I* journaled in the upper end thereof, vibrating standard *K*, rocking bar *L*, link-bar *M*, rock-bar *M*₁, and means for operating the rock arm *M*, substantially as set forth. 2nd. In combination with the elements of claim 1, the ball-clamps *F* *F* arranged at right angles to the rolls, and having springs *c* and arms *c*₂ connected to link bar *M*. 3rd. The plate-spring *N*, which engages the rocking-bar *L*, and standard *K*, substantially as set forth.

No. 31,424. Railway Motor.

(*Moteur de chemin de fer.*)

The Valentine and Grigg Motor Company, (assignee of Joseph R. Valentine and Alexander T. Grigg), Pueblo, Col., U.S., 23rd May, 1899; 5 years.

Claim.—1st. The combination, with a car, of an engine which is fixed upon the car, a pair of driving-wheels mounted in the frame of the car impelled by such engine, and movable, in which are concentric with the axis of the engine-shaft, and a compound lever operable from the engine-platform either to lift the wheels from the track, or to hold them in positive and rigid engagement therewith. 2nd. The combination, with a car, of an engine mounted upon such car, a pair of driving-wheels mounted upon such car, and adjustable up or down in ways thereon, a connection between the driving-shaft of the engine and the axle of the driving-wheels, and a lever whereby the driving-wheels are movable either into or out of engagement with the car track. 3rd. In a car which is provided with a brake-rod and with brake-chains and brakes, the combination of driving-wheels, an engine, a lever which is operable to adjust such wheels either upon or away from the track, and a chain which connects such operating-lever with the brake-chains, whereby both the driving-wheels and the supporting-wheels are controlled by a single operator.

No. 31,425. Wire Screen. (*Store métallique.*)

John J. Jones, (assignee of Dietrich Wesemann), Los Angeles, Cal., U.S., 23rd May, 1899; 5 years.

Claim.—1st. The combination, of the rail, of the screen having the groove *E* therein, and the groove *F* opening into the groove *E* at or near its mid-width at a point wholly within the groove, the trough *D* retained in said grooves and not exposed to view, and the material of the screen having its edges lapped around one side of the trough. 2nd. The combination of the screen-frame provided with the T-shaped groove *G* in one of its stiles, the guide *H* *I* *L* held in the groove *G*, the stops *K*, *K*₁ provided with grooves *J*, *J* and *J*₁, and the rectangular trough *L*, *L*₁ secured to the other stile. 3rd. In a screen, substantially such as set forth, the combination of the stile *A* having the T-shaped groove therein, the guide *H* conformed to the shape of the groove and provided with the tongue *I*, *I*, and the hole *N*, and a spring-bolt adapted to be inserted into and withdrawn from the hole, as and for the purpose set forth.

No. 31,426. Wire Screen and Means for Securing Wire Gauze in Screen Frames. (*Store métallique et moyens de poser la toile métallique dans les châssis des stores.*)

John J. Jones, (assignee of Dietrich Wesemann), Los Angeles, Cal., U.S., 23rd May, 1899; 5 years.

Claim.—The combination of the rail of the screen having the grooves *G*, *G*₁ therein, the trough *T* inserted in the grooves of the frame, and the material of the screen having its edge lapped around one wall *t* of the trough.

No. 31,427. Apparatus for Driving the Spindles in Machines for Spinning, Doubling and Twisting. (*Appareil de commande des broches dans les machines à filer, doubler et retordre.*)

Charles W. Jones, London, Ont., 23rd May, 1899; 5 years.

Claim.—1st. In spinning, doubling, and twisting machinery, the combination of the cylinder *C*, series of spindles *D* wheel with wharves *A*, endless banding *B* threaded continuously over guide pulleys, cylinder spindle wharves and regulator guide pulleys *D*₁ at the angles, and the friction pulley *K* of the tension regulator, substantially as set forth. 2nd. In a tension regulator for spinning, doubling, and twisting machinery, the combination of a base *E* carrying brackets, the arms or brackets *F* secured to said base and having the axle journaled therein, a drum *H* containing a spring tending to turn the same upon its axle, and limited in its rotation by a pin *h*, an axle or spindle upon which said drum is journaled, and connected by a spring and provided with a ratchet wheel *G*₁ gearing in a spring detent *G*₂ secured to the bracket or bearing in which the axle is journaled, a strap *J* secured upon the face of said drum, and carrying a clevis *k*, friction pulley *K* journaled in said clevis, substantially as set forth. 3rd. In a tension regulator for spinning, doubling and twisting machinery, a drum journaled upon an axle, and covering a spring coiled upon said shaft and connecting it with the drum, said axle journaled in brackets and having means to apply a crank or key for winding it, and a ratchet wheel gearing in a spring detent, the drum limited to one turn or revolution by a pin projecting from one side or end, and adapted to strike the forward end of the bracket or arm, a strap with clevis at the end in which a friction pulley is journaled attached to the face of said drum, so that a pull thereon greater than the resistance of the coiled spring will turn said drum against the resistance of said spring, and the spring exert steady tension upon said strap, substantially as set forth. 4th. In combination with an axle *G* journaled in brackets *F* and held thereto by ratchet *G*₁, and detent *G*₂, spring *I* coiled upon said axle and connecting it to a drum by which it is covered, a drum *H* having a helical rim or face of varying diameter, and a strap *J* attached to said helical face, substantially as set forth.

No. 31,428. Relief Valve for Fire Engines or Pumps. (*Souape de secours pour engins ou pompes à incendie.*)

Alvarado Mayer, Detroit, Mich, U.S., 23rd May, 1899; 5 years.

Claim.—1st. The combination of the cylinder *W*₁ suitably connected with the waterway *A*, the pressure piston *R* working in the cylinder *W*₁, and secured on the piston rod or valve stem *R*₁, the piston or valve seat *r*, the piston rod or valve stem *R*₁ provided with the screw *m*, and carrying the piston *R* and valve *N*, and extending through the cylinder *K*, and cap *K*₁, the cylinder *K*, the cylinder cap *K*₁, the valve chamber *P* with inlet and outlet pipes, the valve *N*, the valve seat *n*, and the coiled spring *S*, substantially as shown and described. 2nd. The combination of the waterway, the cylinder *B* containing, the relief valve *F*, the enlarged portion *B*₁ of the cylinder *B* containing, the piston *F*₁ on the relief valve *F*, the relief valve *F* and piston *F*₁ vertically perforated, the valve stem *F*₁ engaging with the gland *X*₁, the gland *X*₁, the conduit from the relief valve, the perforated cylinder cap *B*₁, the cap *I* over the perforations in the cylinder cap *B*₁, the gland *G* holding in place the cap *I*, the screw-stem *H* governing the relief valve, the pipe *J* leading from the cap *I* to the valve chamber *P* in cylinder *K*, the small cylinder *K*, the valve chamber *P* and its outlet, the valve *N* in the small cylinder *K*, the graduated valve stem *R*₁, the small cylinder cap *K*₁ provided with an orifice for the passage of the graduated valve stem *R*₁, the pressure spring *S*, the piston on foot of valve stem *R*₁, the cylinder *W*₁ containing piston *R*, and the pipe *K* leading from the cylinder *W*₁ to the waterway *A*, substantially as described.

No. 31,429. Art or Process of Manufacturing Gas for the purposes of Illuminating, Heating, Power and other uses. (*Art ou procédé de production du gaz pour les fins d'éclairage, de chauffage, de la puissance et d'autres.*)

Eugene de Beauharnais, Toronto, Ont., 23rd May, 1889; 5 years

Claim.—The method or process of manufacturing illuminating or heating gas by introducing air, water, alkali and hydrocarbon oil, substantially in the proportions named, into a retort or apparatus, prepared as described, heated high enough to decompose them, and of the passing the resultant gas through water, substantially as described for the purpose specified.

No. 31,430. Garden Hoe. (*Houe de jardinier.*)

Basil D. D. Rorison and Richard Bangham, Windsor, Ont., 23rd May, 1889; 5 years.

Claim.—1st. The combination, with the fork D having sockets *d*, of the blade E having its ends turned up and secured in said sockets *d*, substantially as described. 2nd. As an improved article of manufacture, the hoe herein shown comprising a handle A, the fork D having shank C, and sockets *d*, and the blade E with turned up ends secured in said sockets, all substantially as shown and described.

No. 31,431. Sand Band for Carriage and Waggon Axles. (*Garde-sable pour les essieux des voitures et des wagons.*)

The Frontier Axle Company, (assignee of Adalbert F. Miles), Stanstead, Qué., 23rd May, 1889; 5 years.

Claim.—The combination of the axle A with shoulder A', threaded sand band F, with boss F' threaded to correspond with A', as herein set forth and for the purposes described.

No. 31,432. Power Elevator Skid.

(*Sabot d'enrayage d'ascenseur à puissance.*)

William D. Morris, Ottawa, Ont., 25th May, 1889; 5 years.

Claim.—1st. A power elevator skid, constructed substantially as herein shown and described, and consisting of a frame shafts journaled to the frame carrying chain wheels to elevate heavy and unwieldy objects by means of a hook engaging with such object, and the chain engaging with the wheels, and an operating mechanism, as set forth. 2nd. In a power elevator skid, the combination of the shoe I engaging with the chain U when loaded, by means of which it holds its grip to raise any object with the hook L, substantially as herein shown and described and as and for the purpose set forth. 3rd. In a power elevator skid, the combination, with the worm X having the mitre wheels J, of the wheel D, made one with the shaft C, substantially as and for the purpose set forth. 4th. In a power elevator skid the combination, with the chain U, having the shoe T, and hook L of the chain wheels C, C', the wheel and worm D, X, the mitre wheels J, and crank shaft H, substantially as and for the purpose set forth.

No. 31,433. Machine for Cutting up Meat and other Substances. (*Machine à hacher la viandes et autres substances.*)

Hermann Albrecht, Philadelphia, Penn., U.S., 25th May, 1889; 5 years.

Claim.—1st. The combination, in a machine for cutting up plastic or yielding substances, of the following instrumentalities, namely: first, a conical shell having within its larger end spiral cutting ribs, and beyond said ribs perforations through its walls, second, a rotary cutter head formed as a continuous spiral knife, the cutting edge of which conforms to the interior of the shell and forms an acute angle with the ribs within said shell, and, third, a hopper at or near the larger end of the shell, substantially as and for the purposes set forth. 2nd. The combination, in a machine for cutting up plastic or yielding substances, of the following instrumentalities, namely: first, a conical shell having within its larger end spiral cutting ribs, and beyond said ribs perforations through its walls, second, a rotary cutter-head formed as a continuous spiral knife, the cutting edges of which conforms to the interior of the shell, and forms an acute angle with the ribs within said shell, third, a hopper at or near the larger end of the shell, and, fourth, a movable feed plate within said hopper, substantially as and for the purposes set forth. 3rd. The combination, in a machine for cutting up plastic or yielding substances, of the following instrumentalities, namely: first, a conical shell having within its larger end spiral cutting ribs, and beyond said ribs perforations through its walls, second, a rotary cutter-head formed as a continuous spiral knife, the cutting edge of which conforms to the interior of the shell, and forms an acute angle with the ribs within said shell, third, a journal projecting from the larger end of said cutter-head, fourth, a bearing for said journal beyond the larger end of the conical shell, and fifth, a hopper at or near the larger end of said shell, substantially as and for the purposes set forth. 4th. The combination, in a machine for cutting up plastic or yielding substances, of the following instrumentalities, namely: first, a conical shell having within its larger end spiral cutting ribs, and beyond said ribs perforations through its walls, second, a rotary cutter-head formed as a continuous spiral knife, the cutting edge of which conforms to the interior of the shell and forms an acute angle with the ribs within said shell, third, a journal projecting from the larger end of said cutter-head, fourth, a bearing for said journal beyond the larger end of the conical shell, fifth, a hopper at or near the larger end of the said shell, sixth, vibratory feed plate applied to said hopper, seventh, a cam upon the journal of the cutter-head which occasions the vibratory movement of the feed plate, and, eighth, means

for rotating the journal, cutter-head and cam, substantially as and for the purposes set forth. 5th. The combination, in a machine for cutting up plastic or yielding substances, of the following instrumentalities, namely: first, a conical shell having within its larger end spiral cutting ribs, and beyond said ribs perforations through its walls, second, a rotary cutter-head formed as a continuous spiral knife, the cutting edge of which conforms to the interior of the shell and forms an acute angle with the ribs within said shell, and which is provided with a radial cutting heel, and, third, a hopper at or near the larger end of the shell, the discharge opening of which is into said shell across a cutting edge with which the cutting heel of the cutter-head co-operates and forms a shears, substantially as and for the purposes set forth. 6th. The combination, in a machine for cutting up plastic or yielding substances, of the following instrumentalities, namely: first, a conical shell having within its larger end spiral cutting ribs, and beyond said ribs perforations through its walls, second, a rotary cutter-head formed as a continuous spiral knife, the cutting edge of which conforms to the interior of the shell and forms an acute angle with the ribs within said shell, and which is provided with a radial cutting heel, third, a hopper at or near the larger end of the shell, the discharge opening of which is into said shell across a cutting edge, with which the cutting heel of the cutter-head co-operates and forms a shears, fourth, a vibratory feed plate applied to said hopper, fifth, a cam upon the journal of the cutter-head, suitable means essentially for instance such as set forth, for occasioning the vibratory movement of the feed plate, and, sixth, means for rotating the cutter-head, substantially as and for the purposes set forth. 7th. In combination, the hopper and stand, the conical shell adapted to be screwed thereto, and provided with a notched flange, and the gravity notch pawl, substantially as and for the purposes set forth.

No. 31,434. Electrical Switch.

(*Commutateur électrique.*)

Walter Thompson, Orange, N. J., U.S., 25th May, 1889; 5 years.

Claim.—1st. The improved switch, combining with a sliding bar, having opposite inclines, providing a ridge or crown *gr*, a spring arm serving as a conductor, substantially as and for the purpose set forth. 2nd. The improved switch herein described, combining with a suitable bar and conductors for electricity, a sliding bar having opposite inclines, one of which is provided with a plate serving as a terminal, and spring arms serving as the co-operating terminal, substantially as and for the purpose set forth. 3rd. The improved switch herein described, combining therein a bed, a sliding bar having opposite inclines *gr*, *gr'* on opposite sides thereof, and spring arms *c*, *c'* extending from suitable bearings in opposite directions into engagements with the opposite sides of said bar, substantially as and for the purposes set forth. 4th. The combination, with the disc or bed plate *a*, having screws or pins *f*, *f'*, and a cap *j*, a slotted bar *d* of non-conducting material extending at its opposite extremities through said cap, the said bar being provided with opposite inclines *gr*, *gr'*, the latter being provided with a contact plate serving as a terminal, of a circuit and a spring arm *c* serving as a co-operating terminal, substantially as and for the purposes set forth. 5th. The combination, with the disc or bed plate *a*, having screws or pins *f*, *f'*, and a cap *j*, a slotted bar *d* of non-conducting material, extending at its opposite extremities beyond the limits of said cap, the said bar being provided with opposite inclines *gr*, *gr'* on opposite sides thereof, and spring arms *c*, *c'*, extending into engagement with the opposite sides of said bar, substantially as set forth.

No. 31,435. Twine Holder. (*Dévidoir à ficelle.*)

William C. Riesberry, Carberry, Man., 25th May, 1889; 5 years.

Claim.—1st. The combination, with the twine holder box A, provided with loop 8 pendant from the bottom, and a suspending fixed bail B having arms 4 secured to the opposite sides of said box, of the gravitating bail C hung pendently from said arms and provided with a loop 6, substantially as set forth. 2nd. The combination, with the twine box A provided with a loop 8, and bail B having arms 4 secured to opposite sides of the box, of the gravitating bail C provided with bent ends 10 and a loop 6, and the gravitating bail E hung to arms 4 and overbalancing bail C when raised to the zenith by the ends 10 of bail C, engaging bail E, as and for the purpose set forth.

No. 31,436. Wash Board. (*Planche à savonner.*)

George P. Fuller, Kalamazoo, Mich., U.S., 25th May, 1889; 5 years.

Claim.—The combination, with the wash-board, provided with side bars B, B', having their upper ends bevelled, and the head board C, of the combined cap bar and protector D, comprising the integral similar bars E, F, arranged at an angle to each other, substantially as and for the purpose specified.

No. 31,437. Caster. (*Roulette de meuble.*)

John S. Robbin, West Bay, Mich., U.S., 25th May, 1889; 5 years.

Claim.—1st. A blank for a caster, consisting of the back or body portion *a*, having the arm portions *b* and *b'* extending laterally in opposite directions from its side edges, and provided with the openings *c* and *c'*, and having the portion *d* extending upwardly from its upper edge, and provided with the openings *e* and the portion *d'* extending downwardly from its lower edge and provided with the opening *e'*, substantially as herein set forth. 2nd. In a caster, a frame formed of one piece cut from a sheet of rolled metal, and consisting of the vertical body portion, having the upper end lower pivotal supports *d* and *d'* bent to a horizontal position from the upper and lower edges of the said body portion, and provided with the openings *e* and *e'* for the pintal, and having the arms *b* and *b'* integral with and bent forwardly from the lateral side edges of the said body portion for carrying the roller, substantially as set forth.

No. 31,438. Automatic Fire Escape.*(Sauveteur d'incendie automatique.)*

Frank A. Westbrook, Port Jervis, N. Y., U. S., 25th May, 1889; 5 years.

Claim.—1st. The combination in a fire escape, of the frame, consisting of the two parts A, B, and the lever G by which the two parts are forged together and made to clamp the rope between them, the upper end of the lever being provided with a ring for the supporting rope or strap which is to go around the body, to catch in substantially as shown. 2nd. In a fire escape, the combination of the two parts of the frame A, B loosely connected together at their outer ends, the part A being provided with the ears H, and the part B with a projection L, and the lever G provided with journals A, ring N and a recess in which the projections L shall catch, substantially as set forth.

No. 31,439. Electro-Magnetic Transmitter.*(Transmetteur electro-magnétique.)*

John T. Williams, Mount Vernon, N. Y., U. S., 25th May, 1889; 5 years.

Claim.—1st. The combination, with a series of three or more helices placed at suitable distances apart, and with a tube, trough or track extending through said helices, of a hollow core or carriage which can freely pass through, said helices, and a series of circuit closers, one for each helix, detached from said carriage and their connections with a dynamo machine or other source of electricity, said circuit closers being actuated by the passing carriage, and serving to close and to break the circuits through the successive helices in the series, substantially as described. 2nd. The combination, substantially as herein shown and described, with a series of helices placed in line with each other, and with a magnetic core or carriage which can freely pass through all the helices, of a series of circuit closers actuated by the magnetic influence of the core or carriage, contacts for said circuit closers, and the connections of these contacts and of the helices with a dynamo machine, or other source of electricity. 3rd. The combination, substantially as herein shown and described, of a tube, trough or track, a series of surrounding helices, a magnetic carriage constructed to move upon the track through the helices, a series of circuit closers actuated by the magnetic influence of the carriage, and their connections with a dynamo machine or other source of electricity. 4th. The combination of a metallic tube, trough or track connected to one pole of a generator of electricity, a series of helices which surround said tube or track, and one end of each of which connects with said tube or track, a series of contacts, one for each helix and connected to the other end thereof, a series of magnetic circuit closers, one for each helix and all connected to the second pole of the generator of electricity, and a magnetic carriage constructed to pass through the successive helices, said circuit-closers being operated by the magnetic carriage, substantially as described. 5th. The combination, with a series of helices, three or more, provided with a series of circuit closers, one for each helix, and a tube, trough, or track extending through the helices, of a magnetic core or carriage arranged to pass through said helices in said tube, trough, or track, said circuit closers being actuated by the magnetic influence of the carriage, substantially as described. 6th. The combination of a series of helices, two or more, surrounding a tube, trough or track, and a magnetizable core, or carriage, free and detached from the other parts of the apparatus, and extending at least from the inside of one helix to the inside of the second succeeding helix, together with circuit closers for introducing the said helices into an electric circuit, substantially as described. 7th. The combination of a helix, a magnet constructed to close the circuit through said helix, and a core or carriage constructed to pass through said helix and to actuate said magnet, substantially as described.

No. 31,440. School Bag. (Sac d'écolier.)

John E. Edwards, Toronto, Ont., 25th May, 1889; 5 years.

Claim.—1st. In a school bag, the combination of parallel suspender straps passing around said bag, and sliding adjustably through slip links attached to one end of the suspender straps, substantially as described. 2nd. In a school bag, the combination of a bag A, with turn over flap B, parallel suspender straps c, c, passing around said bag, detachably joined together at their upper ends by a suitable buckle d, and fastened at their other ends to the turn over flap B, having at their fastened ends slip-links D, D through which the unfastened ends of said suspender straps adjustably play, substantially as described.

No. 31,441. Flexible Pipe Coupling for Railroad Cars. (Joint de tuyau élastique pour les chars de chemins de fer.)

Peter Lord, Hull, Qué., George P. Brophy, Ottawa, Ont., and Charles Leduo, Hull, Qué., 27th May, 1889; 5 years.

Claim.—A flexible pipe coupling, in which a rectangularly bent central section has both of its ends provided with lateral openings, and exterior tapered bearings fitted to and held in chambers formed on adjoining sections of the coupling, said chambers enclosing annular passages around the central section, the whole being arranged to provide for both vertical and horizontal movement, substantially as hereinbefore shown and described.

No. 31,442. Pipe Hanger. (Gâche de tuyau.)

George C. Blackmore, Newark, N. J., U. S., 27th May, 1889; 5 years.

Claim.—The combination with a loop divided into two sections, hinged together at one end, and their free ends provided with apertures, as described, of a belt having a screw thread at its end, and a bolt head having a screw socket fitted to the said bolt end, and having outwardly projecting studs fitted loosely to the apertures in the loop sections, substantially as and for the purpose set forth.

No. 31,443. Wheel. (Roue.)

Thomas J. Rice, Beulah, Col., U. S., 27th May, 1889; 5 years.

Claim.—As a new article of manufacture, a wheel, whose spokes E are inwardly inclined at their bases b^2 reversely to the adjacent surface of the hub A, so that a wedge-like union of the hub and spokes is established, and served by driving the hub in or out of contact, without dislocating the spokes, and whose outer bases b_1 are inclined outwardly from a transverse medium line to correspond with the adjoining faces of the felly, and thus held by frictional contact, solely for the purpose set forth and in the manner specified and illustrated.

No. 31,444. Seal Lock for Hasp Fasteners.*(Serrure scellée pour les gâches de morillons.)*

William A. Firstbrook, Toronto, Ont., 27th May, 1889; 5 years.

Claim.—A seal lock for hasp fasteners, consisting of a staple or swivel-plate having a curved extension formed on it to correspond and lie in contact with the curved portion of the hasp, a hole being bored through the hasp and through the curved extension of the plate, to permit the insertion of a wire, provided with an ordinary seal, substantially as specified.

No. 31,445. Machine for the Purpose of Subaqueous Mining. (Machine de mine sous marine.)

John A. Mathews and Hiram T. Sourry, Vancouver, B. C., 27th May, 1889; 15 years.

Claim.—1st. The use of a dredger, in combination with a series of wire brushes, for the purpose of recovering the precious metals from the bottom of a river, or otherwise. 2nd. The use of a submerged flume, with or without side wings, and containing pockets or riffles, for the purpose of securing and retaining the deposit disturbed by the operation of the dredger or brushes, as aforesaid, in combination with the before described pontoon or dredger.

No. 31,446. Optical Device for the Observation of Localities by Reflection. (Appareil d'optique pour l'observation des localités par la réflexion.)

Edward A. Trapp, Brooklyn, N. Y., U. S., 27th May, 1889; 5 years.

Claim.—1st. The main tube, provided with branch tubes and a series of reflectors, one of the latter being provided for each of said branch tubes, and adapted to be arranged at equal angles with the axial lines of the tubes, substantially as set forth. 2nd. The main tube, having the telescope at one end, and the reflector or reflectors and branch at the other, substantially as and for the purposes set forth. 3rd. The main tube, having the eye-piece, the reflector or reflectors and the end piece, the whole arranged and operating substantially as set forth. 4th. The series of tubes extending at angles to each other, one end of the series having an eye piece, and the other end an end piece, combined with the reflectors at the meeting ends of said tubes, said reflectors being arranged at equal angles with the axial lines of the tubes, substantially as set forth. 5th. The main tube, combined with the branch tube and reflector, the latter being at equal angles with the axial lines of the tubes, and carrying means for illuminating, substantially as set forth.

No. 31,447. Seal Lock. (Serrure scellée.)

Eduard Meise, Pittsburgh, Penn., U. S., 27th May, 1889; 5 years.

Claim.—1st. In seal locks, the combination with a bow, of a frangible seal plate connecting the ends thereof and so closing the bow, and locking apparatus in one arm of said bow, engaging with the seal plate, substantially as and for the purposes set forth. 2nd. In seal locks, the combination, of a bow carrying a block turning in only one direction, and a frangible seal plate having a stop thereon against which said block is turned, substantially as and for the purposes set forth. 3rd. In seal locks, the combination of a bow, having a seat or seats in one arm and a locking apparatus in the other arm, and a frangible seal plate engaging with said seat or seats in one arm, and having a forked end passing over said locking apparatus, substantially as and for the purposes set forth. 4th. In seal locks, the combination, with a bearing, of a rotating block fitting within said bearing and having a cam face formed thereon, and a cylindrical pin engaging with said bearing and cam face, substantially as and for the purposes set forth. 5th. In seal locks, the combination, with a bearing having its inner face serrated or roughened, of a rotating block fitting within said bearing, and having a cam face formed thereon, and a cylindrical pin engaging with said bearing and said cam face, substantially as and for the purposes set forth. 6th. In seal locks, the combination of the bow having in one arm thereof a seat extending longitudinally of the arm, and having locking apparatus in the other arm provided with a locking bar extending out on the side of said arm, and a seal plate having one end fitting into said seat and the other end engaging with said locking bar, so that the face of the seal plate is exposed when the lock is hanging in a perpendicular position, substantially as and for the purposes set forth. 7th. In seal locks, the combination, with the bow or body a , having the socket e in one arm thereof, of the sleeve f , the rotating block g fitting within said sleeve, and the washer n holding the block within the sleeve, and means for securing the sleeve within the socket, substantially as and for the purposes set forth. 8th. In seal locks, the combination, with the body or bow a , having the socket e provided with a key way p , of the sleeve f , having the corresponding key way p , the key o , the rotating block having the collar i extending over said sleeve and key, and the washer n engaging with said block, substantially as and for the purposes set forth. 9th. In seal locks, the combination, with a bow-shaped body and a seal plate closing the

ends of said bow, and locking apparatus to secure it in place, of an inspection tag adapted to be slipped upon one arm of the body before the lock is sealed, and receive any inspection marks to be made, substantially as and for the purposes set forth.

No. 31,448. Horse Shoe Nail.

(*Clou à cheval.*)

James Vernon, Newton Stewart, Scotland, 27th May, 1889; 5 years.

Claim.—1st. A horse shoe nail, coated or plated with a non-corroding substance, as and for the purpose described. 2nd. A horse shoe nail of an oval or semi-oval form, coated with a non-corroding substance, as and for the purpose described.

No. 31,449. Railroad Crossing.

(*Passage de chemin de fer.*)

Jesse T. Mabhey, Forest, Ohio, U.S., 27th May, 1889; 5 years.

Claim.—1st. As an improvement in railroad crossings, the rail sections pivoted at their centres, and the bent inclined arms over which said rail sections move, substantially as shown and described. 2nd. As an improvement in railroad crossings, the rail sections pivotally secured at their centres, the arms $\frac{1}{2}$ pivotally connected to said rail sections, the bent inclined arms C and the supporting plates C having inclined upper surfaces, substantially as shown and described. 3rd. As an improvement in railroad crossings, the pivoted rail sections having the connecting arms, the bent inclined arms over which said rail sections move, the hinged post, the pivoted arms connected thereto, and the jointed levers, substantially as shown and described. 4th. The combination, with the stationary post, of the hinged post secured thereto and having a right angular arm or bracket, the grooved hoop or band, the arm or lever, the pivoted rail sections, the jointed levers and the connecting arms secured to said right angular arm or bracket, and the signal rod or bar, substantially as shown and described. 5th. As an improvement in railroad crossings, the transverse plates α secured to the rails by means of spikes, and the chairs secured on the outer sides of said rails, substantially as shown and described, whereby said rails are held against lateral displacement with relation to each other, as stated.

No. 31,450. Die for Making Eye Bars.

(*Etampe pour faire les barres à aillettes.*)

John F. Kingsley, Athens, Penn., U.S., 27th May, 1889; 5 years.

Claim.—1st. The combination, with a lower die-section, having a recess at one end and central longitudinal rib, of the flat upper die section having central longitudinal groove, substantially as described. 2nd. The combination, with the upper die section flat upon its under face, and provided with a central longitudinal groove, of the lower die-section having a central longitudinal rib and recessed at one end, and the interchangeable plates at said recessed end, substantially as set forth. 3rd. The combination, with the lower die section, having central longitudinal rib and a recess at one end, of the upper die section flat upon its under face, and formed with central longitudinal groove and depression n and the rammer, substantially as described. 4th. The combination, with the lower die-section having at one end a recess, and the plates at said recessed end, of the upper die-section, the rammer and the removable piece, all substantially as described. 5th. The combination, with the lower die section having recess at one end, and the plates at said recessed end, of the upper die-section, formed with depression n , the rammer and the removable piece I having the projection p adapted to fit said depression, substantially as described.

No. 31,451. Apparatus for Raising and Moving Earth. (*Appareil pour remuer et enlever le sol.*)

Howard A. Carson, Boston, Mass., U.S., 27th May, 1889; 5 years.

Claim.—1st. In an apparatus for raising and moving earth or other material, a train of drums N attached to a continuous shaft adapted to travel, and hung from the rail H, in combination with the ratchet wheels P and pawls Q, substantially as and for the purposes set forth. 2nd. In an apparatus for raising and moving earth, or other material, a train of drums adapted to travel, secured to short shafts mounted in bearings hung from the track, in combination with short shafts connected to the shafts of the drums by universal joints, substantially as and for the purposes set forth. 3rd. In an apparatus for raising and moving earth or other material, a train of drums N adapted to travel, secured to shafts L mounted in bearings K hung from the track H, in combination with shafts L connected to the shafts L by universal joints M, bevelled gears T, U, shaft B, driving drum Y and rope Z, substantially as shown and described. 4th. The ring buffers m , in combination with the shaft V, carrying the driving drum V, and bevelled gear U and the counter buffers d , substantially as and for the purposes set forth. 5th. A train of drums mounted upon a shaft, and supported in bearings hung from the track, in combination with bevelled gears T, U, driving drum Y and rope Z, substantially as and for the purposes set forth. 6th. In combination with a movable frame supporting a train of drums secured to a shaft mounted in bearings hung from the track, said shaft consisting of sections secured together by universal joints, and driven by bevelled gears from a counter shaft, which is driven by a rope passing around a drum on said shaft, substantially as shown and described. 7th. In combination with a movable frame supporting a track, a train of drums secured to a shaft mounted in bearings hung from the track, and driven by bevelled gear from a counter-shaft, which is driven by a rope passing around a drum on said shaft, substantially as shown and described.

No. 31,452. Suspender. (*Bretelle.*)

Edwin B. Simpson, Brooklyn, N.Y., U.S., 27th May, 1889; 5 years.

Claim.—1st. In a suspender, the combination, with shoulder straps and back button-hole tabs, of connecting pieces between the shoulder straps, and tabs with which the shoulder pieces are pivotally united, said connecting pieces being connected together along their adjacent edges by two or more flexible connections, substantially as specified. 2nd. In a suspender, the combination, with shoulder straps and back button-hole tabs, of connecting pieces with which both the shoulder straps and the button-hole tabs are pivotally united, said connecting pieces being connected together along their adjacent edges by flexible connections, substantially as specified.

No. 31,453. Manufacture of Devices for Producing Sparkling Effects. (*Fabrication d'appareils pour produire des effets brillants.*)

Edward Smith and Frederick Smith, London, Eng., 27th May, 1889; 5 years.

Claim.—1st. As a new article of manufacture, glass formed with a series of curved projections at one side, and with a roughened or uneven surface at the other side, for the purposes specified. 2nd. As a new article of manufacture, glass formed with a series of curved projections at one side, and with a roughened or uneven surface at the other side, consisting of numerous projections for the purposes specified. 3rd. As a new article of manufacture, glass formed with a series of curved projections at one side, and with a roughened or uneven surface at the other side, consisting of conoidal projections for the purpose specified. 4th. As a new article of manufacture, glass formed with a series of curved projections at one side, and with a roughened or uneven surface, consisting of numerous projections at the other side, said projections being arranged in regular order, substantially as hereinbefore described. 5th. As a new article of manufacture, glass formed with curved projections 2, arranged in regular order at one side, and with a roughened or uneven surface, consisting of numerous projections of pyramidal form at the other side, substantially as hereinbefore described. 6th. As a new article of manufacture, glass formed with a series of curved projections at one side, and with a roughened or uneven surface, consisting of numerous conoidal projections at the other side, some or all of said conoidal projections, having in combination therewith a coating of transparent or translucent dye or stain, substantially as herein described for the purpose specified. 7th. As a new article of manufacture, glass formed with a series of curved projections at one side, and with a roughened or uneven surface, consisting of numerous projections of pyramidal form at the opposite side, in combination with a coating of silver, substantially as herein described for the purpose specified. 8th. The combination, with glass, formed with a series of curved projections at one side and with a roughened or uneven surface at the other, of metal or a metalized body arranged at the back of said roughened or uneven surface, substantially as herein described for the purpose specified.

No. 31,454. Steering Apparatus for Vessels.

(*Appareil pour gouverner les vaisseaux.*)

John B. Snelling, New York, N.Y., U.S., 27th May, 1889; 5 years.

Claim.—In a steering apparatus, the combination of the combined standard and internally toothed rim F, with the wheel shaft and its gear J, the drum and its gears L mounted loose on studs fixed in the flange on said drum, the cap-plate K in which the shaft has its front bearing, and bolts for securing said plate to the standard, as shown and described.

No. 31,455. Electric Railway Signal.

(*Signal électrique de chemin de fer.*)

William H. Waddell, Lexington, Va., U.S., 27th May, 1889; 5 years.

Claim.—1st. In an electric railway signal, the combination with a track A, of the two pairs of parallel conductors B, B' located on opposite sides of the track and provided with the breaks E, located as described. 2nd. In an electric railway signal, the combination of the two pairs of parallel conductors B, B', insulated from each other, with the two pairs of contacts g, g, g_1, g_1 carried by each car, one pair being provided with battery i and the other pair with bell j , arranged and connected as set forth. 3rd. In an electric caution railroad signal, the combination of the two pairs of conductors B, B', provided with breaks E, and circuit breakers F, as set forth. 4th. A railroad electric signal, comprising conductors B, B', contacts g, g_1 carried by a train, and batteries and alarms for the same, substantially as described.

No. 31,456. Invalid's Lounge.

(*Causeuse d'invalides.*)

Wallace L. Dossett, Toronto, Ont., 27th May, 1889; 5 years.

Claim.—1st. The head section A hinged to the frame of the lounge, in combination with the pivoted lever E connected by the cord F to the lever H, arranged substantially as and for the purpose specified. 2nd. The foot section B and centre section C hinged together, as described, and having a post K connected to and projecting below their junction, in combination with the cords M and N and pivoted lever L, arranged substantially as and for the purpose specified.

No. 31,457. Facing for Walls of Buildings.

(*Parément pour les murs des bâtiments.*)

Alfred M. Hansen, Fulton, Ill., U.S., 27th May, 1889; 5 years.

Claim.—The combination, with a building wall, of the metallic facing A provided with the transverse grooves a filled with fire-

proof material *d*, representing the face view of a brick or stone wall. He said facing having the inward projections *b* adapted to hold the plane portions of the facing away from the wall to form the air spaces *c*, substantially as and for the purposes described.

No. 31,458. Sewing Machine Shuttle.

(*Navette de machine à coudre.*)

Charles Raymond, Guelph, Ont., 27th May, 1889; 5 years.

Claim.—A shuttle-spring, having a post connected to and projecting from a point near its front end, the said post being rivetted or otherwise fastened to a short spring plate, which fits into a recess made in the shuttle near its front end, so that the end of the spring projecting in front of the post shall be substantially flush with the face of the shuttle, the head of the screw which connects the spring-plate to the shuttle passing through the shuttle-spring, so that the thread in passing below the shuttle spring is permitted to slip over the head of the screw and be in contact with the post which holds the shuttle-spring, substantially as specified.

No. 31,459. Attachment to the Hand or Garden Rake to Prevent Clogging.

(*Disposition au râteau de jardinier pour l'empêcher de s'engorger.*)

James Robertson, Glencoe, Ont., 27th May, 1889; 5 years.

Claim.—The use or application of the perforated bar H, as an attachment to the ordinary hand or garden rake by suspending it from the back of the rake over the teeth of the same, so as to work loosely upon the teeth, substantially as and for the purpose hereinbefore set forth.

No. 31,460. Sash Lock and Holder.

(*Arrête-croisée.*)

Robert J. Buchanan, Pittsburgh, Penn., U. S., 27th May, 1889; 15 years.

Claim.—The combination of the lock frame or casing B, and the bell-crank lever A pivoted therein, one arm projecting to engage a rack plate D outside the casing, and the other arm gravitating and provided with a handle or knob C to manipulate and lock the lever, as set forth.

No. 31,461. Process, Means and Apparatus for the Separation of Glycerine and the Distillation of Fatty Acids.

(*Procédé, disposition et appareil pour la séparation de la glycérine et la distillation des acides gras.*)

Paul Marix, Paris, France, 27th Mai, 1889; 15 years.

Résumé.—1o. La méthode pour recueillir la totalité de la glycérine du corps gras, consistant dans la suite des opérations suivantes: maintenir la distillation à une température inférieure à celle qui détruirait les parties neutres, restées par suite de la saponification presque toujours incomplète du corps gras, n'introduire la vapeur sèche dans la matière à distiller à la température voulue et à une pression d'environ 3-10 atmosphères, alimenter l'appareil d'une façon continue et n'arrêter l'alimentation que lorsque les matières neutres qui ne distillent pas se sont accumulées en quantité pouvant nuire à la marche régulière de la distillation, reprendre ces produits neutres pour les traiter comme les corps gras ordinaires à l'auto-clave afin d'en séparer la glycérine des acides gras. 2o. (a) Le procédé d'extraction de la glycérine des corps gras, consistant à produire la séparation de la glycérine dans un autoclave sans introduction dans celui-ci de vapeur ou de gaz, ce procédé consistant à porter les matières en traitement à la température et à la pression nécessaires à cet effet au moyen de la circulation d'un liquide, d'une vapeur ou d'un gaz surchauffé à travers un serpentinet fermé passant dans l'autoclave et débouchant par ses deux extrémités à l'extérieur, les matières à traiter étant agitées pendant l'opération. 3o. Le système de chaudière de distillation A portant intérieurement une série de tubes D formant serpentinet de vapeur, et aboutissant à un barboteur D, disposé à la partie inférieure de la chaudière et débouchant en dehors de la maçonnerie pour nettoyage des barboteurs F ou G permettant de diriger et de conduire la marche de la vapeur, l'alimentation de la chaudière se faisant par l'intermédiaire d'un tube L en forme d'U, d'un tuyau M, d'un serpentinet N avec robinet de réglage d'introduction, le tout comme il a été ci-dessus décrit.

No. 31,462. Corset. (*Corset.*)

William H. Cooper, Ashbourne, Eng., 31st May, 1889; 5 years.

Claim.—1st. A corset, having one or more elongated vertical openings bounded by two opposing concave edges, and having means for adjusting the distance apart of the said edges, whereby the waist of the corset can be widened or narrowed without affecting the width of the top and bottom thereof, substantially as set forth. 2nd. In a corset, one or more adjustable elongated vertical openings, bounded by two opposing concave edges D, in combination with a pair of bolts B adapted to pull in opposite directions, the said bolts being attached to the corset at or about the centre of the edge or edges D remote from their pulling ends, and being provided at the said pulling ends with an adjustable fastening device, whereby the waist of the corset may be narrowed or widened without affecting the width at the top and bottom thereof, substantially as set forth. 3rd. In a corset, one or more main pieces A joined together by their vertical edges for a short distance from the top and bottom thereof, and having the remaining portion D of said edges shaped concavely, in combination with an encircling belt B formed in two lengths, having their overlapping ends attached to the opposing edges of said main pieces, at

or about the middle thereof, whereby the space between the middle of said pieces may be adjusted, and the waist of the corset narrowed or widened without affecting the width at the top and bottom, substantially as described. 4th. In a corset, an adjustable encircling belt B formed of two parts, having their fixed ends attached to the corset at or about the waist thereof, by overlapping alternating branches B₁, whereby the two parts of the belt may be pulled in the same straight line to adjust the width of the corset waist without interfering one with the other, substantially as described. 5th. In a corset, the combination, with two adjustable concave openings, as described, and with an encircling belt B formed of two parts having overlapping forked ends attached to the front edges of said openings, of the extra straps B₂, each attached to one of said parts passing through the fork of the other said part, and attached to the corset at the back edge of the adjacent concave opening, whereby the edges of said openings are prevented from overlapping when drawn together, substantially as described and shown.

No. 31,463. Tubular Lantern.

(*Lanterne tubulaire.*)

Robert Hermance, Schuylerville, N. Y., U. S., 31st May, 1889; 15 years.

Claim.—1st. The combination in a tubular lantern, of the stationary tubes constituting the frame and the globe, of a dome independently of the globe and pivoted to the stationary frame, substantially as described. 2nd. The combination, with the side tubes of a tubular lantern, of the tube D connecting the upper ends of said side tubes, the sleeve K loosely encircling said tube D and the dome connected with said sleeve, substantially as and for the purpose specified. 3rd. The combination in a tubular lantern, with the side tubes C, and tube D connecting the same at their upper ends, of the sleeve K loosely encircling said tube D, the dome, the short tube J attached at its lower end to said dome and at its upper end to said sleeve, and the brace L secured to said sleeve and dome, substantially as and for the purpose specified. 4th. The combination, with the side tubes of a tubular lantern, of the central braces α extending up through said tubes, substantially as and for the purpose specified. 5th. In a tubular lantern, the combination, with the reservoir thereof, of the horizontal tube B cut away near its centre, and secured to the top and sides of the reservoir, and to the neck γ thereof and having openings β , substantially as and for the purpose set forth. 6th. The combination in a tubular lantern, with a vertically adjustable globe G provided with a head I, and the wire support H arranged to rest under said head upon one side of the globe, of the spring M carried by the dome and constructed to hold the globe in two different positions, as set forth. 7th. The combination, with the side tubes and tube D connecting the upper ends thereof, of the dome pivoted to said tube D and provided with a notch e , and the spring J secured to one of said side tubes and engaging said notch, substantially as and for the purpose specified.

No. 31,464. Perfect Combustion Flue Furnace.

(*Fourneau à carneaux à combustion parfaite.*)

Robert Clark, Jr., Petrolia, Ont., 31st May, 1889; 5 years.

Claim.—1st. The arch M, in combination with and situated between the furnace K and boiler A, substantially as shown and described and for the purpose specified. 2nd. The flues H, I, J and K, in combination with the boiler A and boiler walls B, B, substantially as shown and described and for the purpose specified. 3rd. In combination, with the above, the bridge wall L having the flue l formed therein, substantially as shown and described and for the purpose specified.

No. 31,465. Cover for Circular Vessels.

(*Couvercle pour ustensiles circulaires.*)

Ives Bouliane, Les Petites Bergeronnes, Qué., 31st May, 1889; 5 years.

Claim.—A circular vessel, having a screw-threaded formed on its internal margin, in combination with a circular cover having a screw-threaded edge to fit into the margin of the vessel, and having also one or more sunken recesses to receive a key fitted to the same, substantially as shown and described.

No. 31,466. Metal Can, Box and other Receptacles.

(*Bidon, boîte et autres réceptacles métalliques.*)

Gustavus A. Waeber, New York, N. Y., U. S., 31st May, 1889; 5 years.

Claim.—1st. A metal can, box or receptacle, having around its perimeter a projection on the margins or corners of which are incisions, substantially as herein described. 2nd. A metal can, box or receptacle, having around its perimeter a projection on the margins or corners of which are incisions and a tongue upon said projection, substantially as specified.

No. 31,467. Runner Frame for Sleighs and Sleds.

(*Châssis à patins pour les traîneaux.*)

Ferdinand W. Hofele, New York, N. Y., U. S., 31st May, 1889; 5 years.

Claim.—1st. A runner-frame for sleds and sleighs, composed of runners connected by an upwardly-bent and bow-shaped front, said runners and front being made of T-irons and U-shaped braces. also of T-irons, said braces being slitted at their lower ends and attached at opposite sides to the ribs of the runners, substantially as set forth. 2nd. A runner-frame for sleds and sleighs, composed of runners connected by an upwardly-bent and bow-shaped front, U-shaped braces attached to said runners, diagonal pieces attached to the top

of the braces and extended to the bow-shaped front, said extensions being provided with eyes for attaching the shafts, substantially as shown and described. 3rd. A runner frame for sleds and sleighs, composed of runners connected by an upwardly-bent and bow-shaped front, U-shaped braces attached to the runners, said runners and braces being made of T-irons, and diagonal pieces attached to the braces and to the bow-shaped front, substantially as set forth.

No. 31,468. Runner Frame for Sleds.

(*Châssis à patins pour les traîneaux.*)

Ferdinand W. Hofele, New York, N. Y., U. S., 31st May, 1889; 5 years.

Claim.—1st. A runner-frame for sleds, composed of parallel runners connected by an upwardly-bent, bow-shaped front, said runners

and front being made of U-shaped cross-section, yoke-shaped transverse braces attached to said runners and made of double T-shaped cross-section, and diagonal stiffening pieces connecting the top of the braces and extended to the bow-shaped front, substantially as set forth. 2nd. The combination of the U-shaped runners, having openings, transverse T-shaped braces attached to the runners, and having recessed webs at their lower ends, and rollers pivoted to transverse bolts and extending into the recesses of the braces and through the openings of the runners, substantially as set forth.

No. 31,469. Chair. (*Fauteuil.*)

John S. Anthes, Berlin, Ont., 31st May, 1889; 5 years.

Claim.—A chair or settee, having the side bars C and cross bars D of its back and seat grooved to receive and hold the edges of the panel A, substantially as shown and specified.

**CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO
THE FOLLOWING PATENTS.**

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| <p>1425. E. W. HARRAL, 2nd 5 years of No. 19,331, from the thirteenth day of May, 1889. Material for Covering Carriages, 29th April, 1889.</p> | <p>1434. J. F. EATON (executrix) 2nd 5 years of No. 19,648, from the twenty-fifth day of June, 1889. Improvements on Car Axle Trusses, 16th May, 1889.</p> |
| <p>1426. THE DOWNIE INCURSTATION PREVENTIVE CO. (assignee.) 2nd 5 years of No. 19,289, from the tenth day of May, 1889. Improvements in the Prevention and Removal of Scale in Boilers, 1st May, 1889.</p> | <p>1435. J. B. ARMSTRONG, 2nd and 3rd 5 years of No. 19,578, from the sixteenth day of June, 1889. Improvements in Tires for the Wheels of Road Vehicles, 17th May.</p> |
| <p>1427. F. T. HULETT, 2nd 5 years of No. 19,316, from the twelfth day of May, 1889. Improvements in Washing Machines, 2nd May, 1889.</p> | <p>1436. THE BELL TELEPHONE CO. (assignee). 3rd 5 years of No. 10,705, from the twenty-seventh day of November, 1889. Improvements on an Electric Speaking Telephone, 17th May, 1889.</p> |
| <p>1428. D. JOHNSON and W. D. BORLAND, 2nd and 3rd 5 years of No. 30,609, from the twenty-third day of January, 1884. Improvement in Ammunition and in its Manufacture, 3rd May, 1889.</p> | <p>1437. J. G. MALCOLM, 3rd 5 years of No. 9,998, from the twenty-eighth day of May, 1889. Refrigerator, 17th May, 1889.</p> |
| <p>1429. C. GOODYEAR, 3rd 5 years of No. 10,137, from the twenty-third day of June, 1889. Improvements on Sole Sewing Machines, 7th May, 1889.</p> | <p>1438. J. WEAKLEY, 2nd 5 years of No. 19,407, from the twenty-first day of May, 1889. Improvements in Tubular Lanterns, 20th May, 1889.</p> |
| <p>1430. A. HARRIS, SON & CO. (assignee), 2nd 5 years of No. 19,371, from the seventeenth day of May, 1889. Improvements in Grain Binders, 7th May, 1889.</p> | <p>1439. L. B. BAILEY, 2nd 5 years of No. 19,455, from the twenty-ninth day of May, 1889. Improvements in Lubricators, 27th May, 1889.</p> |
| <p>1431. E. B. EDDY, 3rd 5 years of No. 9,958, from the twelfth day of May, 1889. Improvements on Wash Boards, 11th May, 1889.</p> | <p>1440. C. HOEPFENER, 2nd 5 years of No. 19,492, from the thirty first day of May, 1889. Improvements relating to the Decomposition of Metallic Allied Salts by Electrolysis, 27th May, 1889.</p> |
| <p>1432. H. E. CAHEN <i>dit</i> REGNIER, 2nd and 3rd 5 years of No. 25,499, from the sixth day of December, 1891. Improvements in the Manufacture of Steel, 16th May, 1889.</p> | <p>1441. O. P. HURFORD, 2nd and 3rd 5 years of No. 21,233, from the sixteenth day of March, 1890. Improvements on Bolts for Purifying Middlings, 27th May, 1889.</p> |
| <p>1433. J. H. HARDING and E. S. ELLIOTT 2nd 5 years of No. 19,387, from the nineteenth day of May, 1889. Improvements on the Art or Process of Ornamenting Walls, Ceilings and other Surfaces, 16th May, 1889.</p> | <p>1442. F. CROMPTON (assignee), 3rd 5 years of No. 10,078, from the seventh day of June, 1889. Improvements in the Manufacture of Corsets and Bosom Pads, 28th May, 1889.</p> |

MAY LIST OF TRADE MARKS.

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3445. MONTREAL AMATEUR ATHLETIC ASSOCIATION, of Montreal, Que. The special insignia or distinguishing badges adopted by the Registrants, 3rd May, 1889.
3446. LA COMPAGNIE DU VIN DE ST. RAPHAEL, of Valence, Drome, France. The St. Raphael Wine, 7th May, 1889.
3447. }
 3448. } THE ELGIN NATIONAL WATCH CO., of Chicago, Illinois, U.S.A. Watches,
 3449. } 8th May, 1889.
 3450. }
3451. } THOMAS JEFFERSON WINSHIP, of Montreal, Que. Cigars,
 3452. } 8th May, 1889.
3453. JOHN ELMER GARDNER, of Toronto, Ont. The Diamond Salve, The Diamond Consumption Cure, The Diamond Oil, The Diamond Blood Purifier, 9th May, 1889.
3454. CHARLES ROBIN & COMPANY, Limited, of the Island of Jersey. Dry Codfish, 11th May, 1889.
3455. CHARLES LE MARQUAND, of Point St. Peter, Co. of Gaspé, Que. Dry Codfish, 13th May, 1889.
3456. BENS DORP & CO., of Amsterdam, Holland. All goods made from the Cocoa bean, 15th May, 1889.
3457. FRANCOIS XAVIER DUSSAULT, faisant affaires sous la raison sociale. B. HOUDE & CIE., de Quebec. Tabac, 16 Mai, 1889.
3458. WM. A. STEWART, of St. John, N.B. Soap, 17th May, 1889.
3459. ALEXANDER HUTTON DIXON, of Toronto, Ont. Certain medical remedies, 18th May, 1889.
3460. GEBHARD OTT, of Nurnberg, Bavaria, Germany. Tobacco Pipes, 20th May, 1889.
3461. CHARLES MACINTOSH & COMPANY, of Manchester, Lancashire, England. Waterproof Fabrics, 21st May, 1889.
3462. NORTH PACIFIC CANNING COMPANY, Limited, of Victoria, B.C. Fresh Salmon, 27th May, 1889.
3463. } THE DOMINION WADDING COMPANY, Limited, of St. Cunegonde, Que. Cotton
 3464. } Batting, 28th May, 1889.
3465. THE ROYAL SOAP MANUFACTURING COMPANY, Limited, of Winnipeg, Manitoba. Electric Soap, 28th May, 1889.
3466. H. SCHWEITZER & COMPANY, Limited, of 45 Farrington Street, London, England. Cocoa and Chocolate, 29th May, 1889.
3467. S. DAVIS & SONS, of Montreal, Que. Cigars, 31st May, 1889.

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4876. **Book of Photographic Views called: CATHEDRAL, CONVENT AND OTHER CATHOLIC INSTITUTIONS OF THE TOWN OF PETERBOROUGH.** George Buchanan Sproule, Peterborough, Ont., 2nd May, 1889.
4877. **WHIP-POOR-WILL.** Song. Words by Alexander McLaughlan. Music by W. O. Forsyth. A. & S. Nordheimer, Toronto, Ont., 2nd May, 1889.
4878. **MERCANTILE REPORT** (book). The Mercantile and Reporting Association, St. Catharines, Ont., 2nd May, 1889.
4879. **HEART'S-EASE.** A Melody. Arranged for the Piano by Miss Jane Porter, Toronto, Ont., 3rd May, 1889.
4880. **THE MERCANTILE TEST AND LEGAL RECORD.** Vol. XIX. No. 18, May 2, 1889 (periodical). Dun, Wiman & Co., Toronto, Ont., 3rd May, 1889.
4881. **SILVER BELLS GALOP.** By David Samuel Mills, London, Ont., 6th May, 1889.
4882. **PRIZE ESSAYS ON TOBACCO.** By R. A. H. Morrow. Rev. Dr. Wilson, Miss Laura Bigney, with an Introduction by Rev. A. J. McFarland, Robt. A. H. Morrow, Rev. Robt. Wilson, both of St. John, N.B., and Miss Laura Bigney, Lunenburg, N.S., 6th May, 1889.
4883. **LANDING A PRIZE.** By Mrs. Edward Kennard (book). The National Publishing Co., Toronto, Ont., 7th May, 1889.
4884. **MEHALAH.** By S. Baring Gould (book). The National Publishing Co., Toronto, Ont., 7th May, 1889.
4885. **McKILLOP'S COMMERCIAL AND LEGAL RECORD.** May 2, 1889 (periodical). James Jack, St. John, N.B., 7th May, 1889.
4886. **GOD IS A SPIRIT.** From the "Woman of Samaria." By W. Sterndale Bennett, Novello, Ewer & Co., London, Eng., 10th May, 1889.
4887. **THE MERCANTILE TEST AND LEGAL RECORD.** Vol. XIX., No. 19, May 9, 1889 (periodical). Dun, Wiman & Co., Toronto, Ont., 10th May, 1889.
4888. **THE BASEBALL SCORE BOOK.** Joseph Henry Holmes, Toronto, Ont., 13th May, 1889.
4889. **McKILLOP'S COMMERCIAL AND LEGAL RECORD.** May 9, 1889 (periodical). James Jack, St. John, N.B., 13th May, 1889.
4890. **ST. BASIL'S HYMNAL.** Rev. L. Brennan, Toronto, Ont., 15th May, 1889.
4891. **DIGEST OF REPORTED CASES TOUCHING THE CRIMINAL LAW OF CANADA;** with References to the Statutes, and an Index. By Thomas P. Foran, M.A., B.C.L. Carswell & Co., Toronto, Ont., 15th May, 1889.
4892. **N. HAYES' NATIONAL GUESSING CHART OF THE CENSUS OF 1890.** Newlands Hayes, Ingersoll, Ont., 16th May, 1889.
4893. **L'INDICATEUR DE QUEBEC, ST. SAUVEUR ET LEVIS** (The Quebec, St. Sauveur and Levis Indicator), 1889. T. L. Boulanger et Ed. Marcotte, Quebec, 16 Mai, 1889.
4894. **ONE MORNING, OH! SO EARLY.** Song. Words by permission from Mopsa the Fairy, by Jean Ingelow. Music by A. Goring Thomas. The Anglo-Canadian Music Publishers' Association (L'd.), London, England, 17th May, 1889.
4895. **IMPROVED FORM OF BOILER INSURANCE,** covering Loss of Life, Injury to Person, Damage to Property, Chomage, etc. Robt. Flaherty, Montreal, Que., 17th May, 1889.
4896. **THE MERCANTILE TEST & LEGAL RECORD.** Vol. XIX., No. 20, May 16, 1889 (periodical). Dun, Wiman & Co., Toronto, Ont., 18th May, 1889.
4897. **HARVEST.** By John Strange Winter (book). The National Publishing Co., Toronto, Ont., 23rd May, 1889.
4898. **HISTORY OF PROFESSOR PAUL.** By Stuart Livingston, Hamilton, Ont., 23rd May, 1889.
4899. **HIGH SCHOOL BOTANY.** By H. B. Spotton, M.A. (Revised Edition). W. J. Gage & Co., Toronto, Ont., 23rd May, 1889.
4900. **THE FOUNTAIN BOY AND THE BOY FOUNTAIN** (piece of statuary). Fred. A. T. Dunbar, Quebec, 23rd May, 1889.
4901. **THE MERCANTILE TEST & LEGAL RECORD.** Vol. XIX., No. 21, May 23, 1889 (periodical). Dun, Wiman & Co., Toronto, Ont., 25th May, 1889.
4902. **RITUAL OF THE ROYAL DEGREE AND MANUAL OF THE SELECT DEGREE ROYAL TEMPLARS OF TEMPERANCE.** W. W. Buchanan, Hamilton, Ont., 25th May, 1889.
4903. **CHERRIER'S QUEBEC CITY DIRECTORY, 1889-90.** (Annuaire Cherrier pour la ville de Quebec). A. B. Cherrier, Quebec, 27th May, 1889.

4904. GOSPEL TENT HYMNS. Compiled by Rev. R. C. Horner, B.O., and Rev. J. V. MacDowell, B.A., Rev. Ralph C. Horner, Ottawa, Ont., 28th May, 1889.
4905. THE WING OF AZRAEL. By Mona Caird (book). John Lovell & Son, Montreal - Que., 29th May, 1889.
4906. THE GIRL FROM MALTA. By Fergus Hume (book). The National Publishing Co., Toronto, Ont., 31st May, 1889.
4907. THE HIGH SCHOOL ALGEBRA, PART II. By I. J. Birchard, M.A., Ph. D., and W. J. Robertson, B.A., LL.B. Wm. Briggs, Toronto, Ont., 31st May, 1889.
4908. NOTES ON SHEPPARD. By Rev. Ralph C. Horner, B.O., with an Introduction by Rev. J. V. MacDowell, B.A. Rev. Ralph C. Horner, Ottawa, Ont., 31st May, 1889.
4909. THE MERCANTILE TEST & LEGAL RECORD. Vol. XIX., No. 22, May 30, 1889 (periodical). Dun, Wiman & Co., Toronto, Ont., 31st May, 1889.
4910. HISTOIRE DE LONGUEUIL ET DE LA FAMILLE DE LONGUEUIL. Alexandre Jodoin et Joseph Louis Vincent, Longueuil, Que., 31 Mai, 1889.



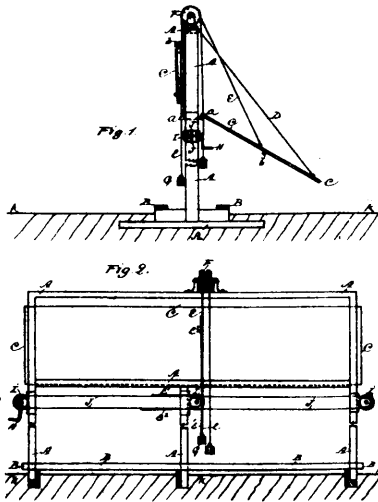
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

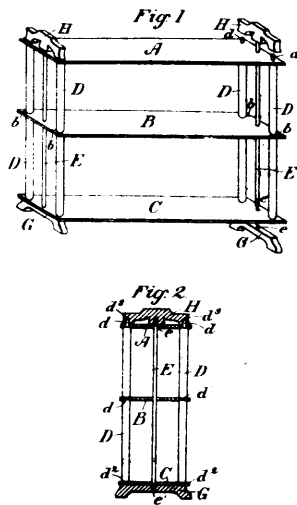
Vol. XVII.

MAY, 1889.

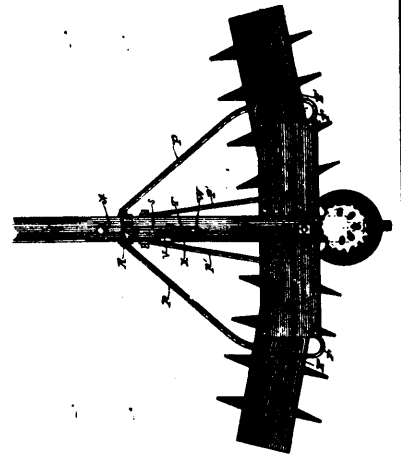
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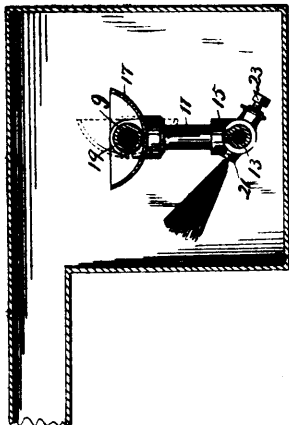
31212 New's Cover for Bricks



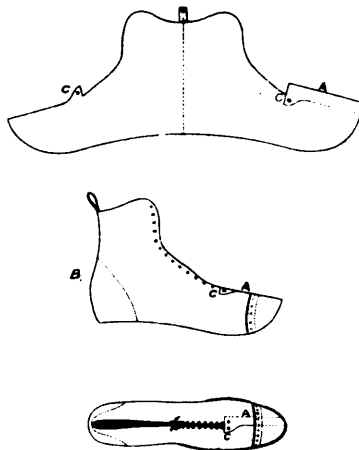
31213 Talbott's Book Rack.



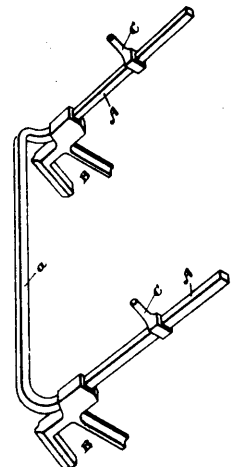
31214 Boyer's Harrow and Pulverizer



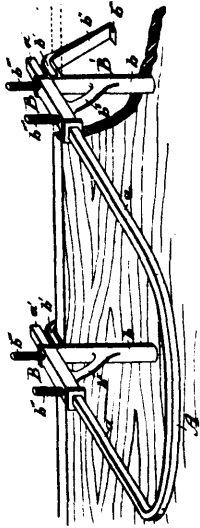
31215 Matthews' Hydro-Carbon Vaporizer and Burner.



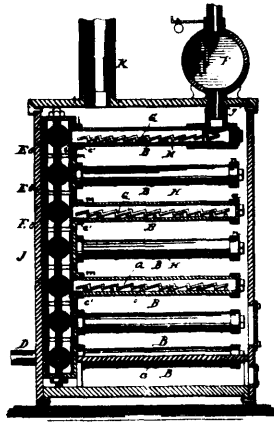
31216 Fortin's Shoe Vamp.



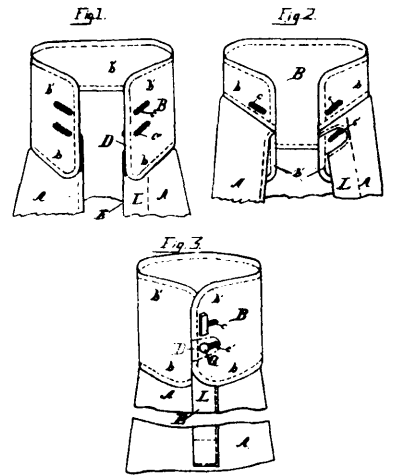
31217 Burrage's Bag-Holder.



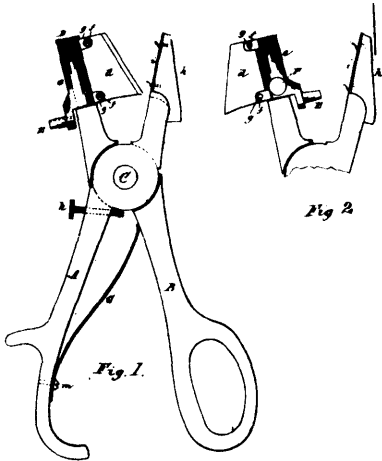
31218 Allen's Bag-Holder.



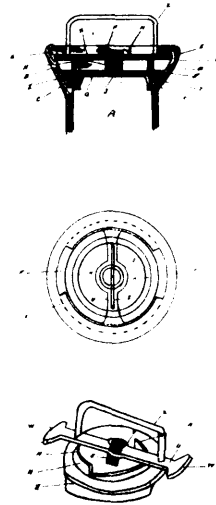
31219 Moore's Boiler.



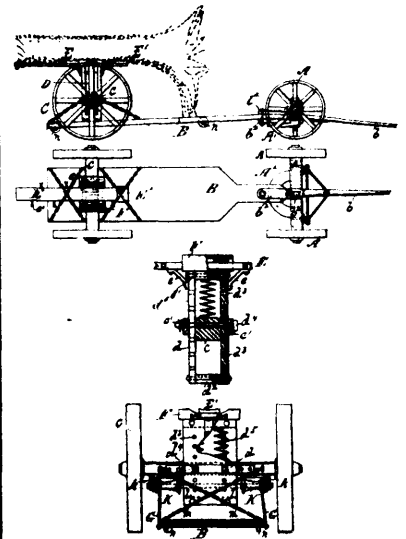
31220 Howell's Shirt Wrist Band.



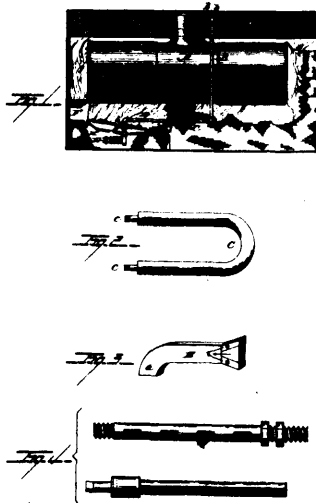
31221 Barry's Button Hole Cutter.



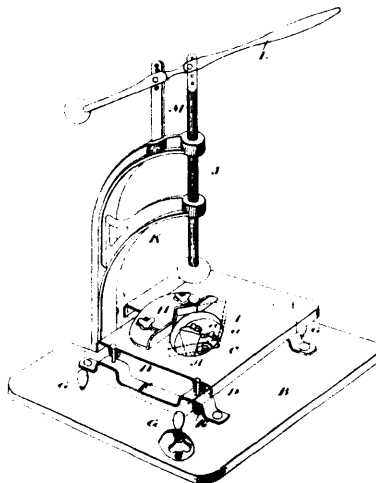
31222 Sawyer's Fruit Jar.



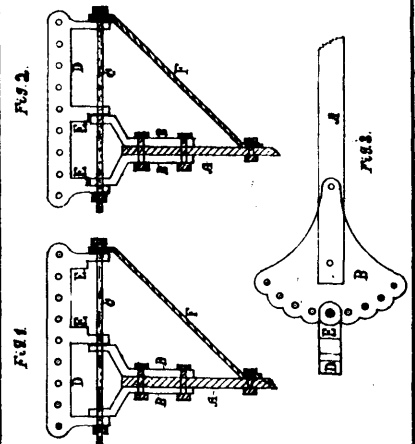
31223 Estes' Tree Transplanting Waggon.



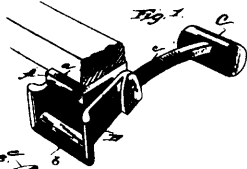
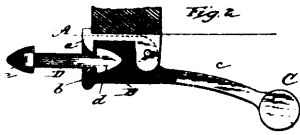
31224 Cornell's Air Injecting Device.



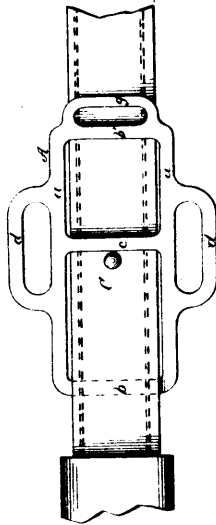
31225 McElroy's Machine for Manufacturing Rosettes, etc.



31226 Challen's Plough Clevis.



31227 Fairman's Car Coupling.



31228 Cole's Harness Buckle.

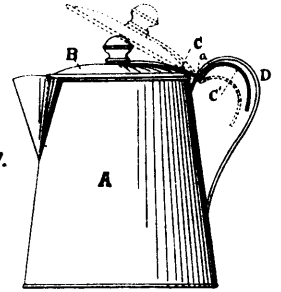


Fig. 1.

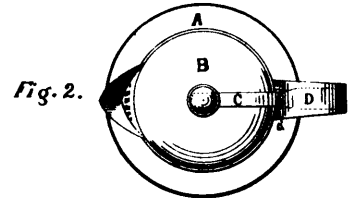
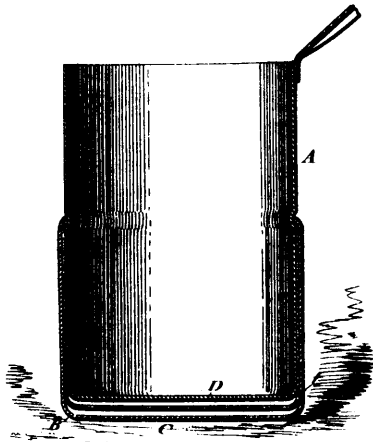


Fig. 2.

31229 Wright's Coffee or Tea Pot.



31230 Fredericks' Cooking Utensil.

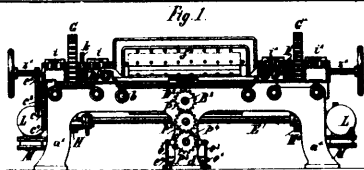


Fig. 1.

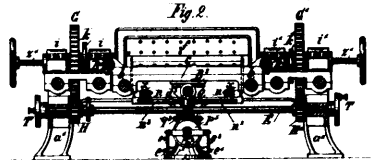


Fig. 2.

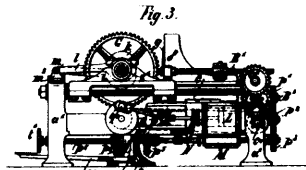


Fig. 3.

31231 Oncken's Machinery for Cutting Wood for Boards, etc.

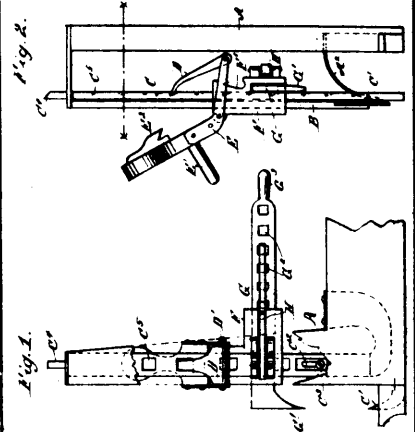
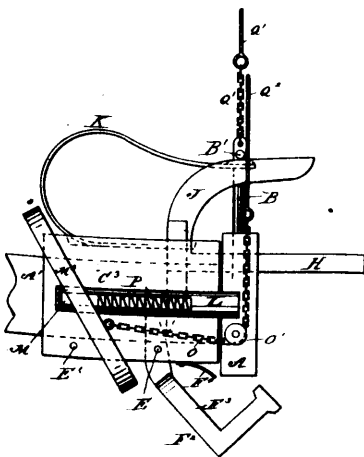


Fig. 1.

Fig. 2.

31232 Fleisher's Saw Mill Dog.



31233 Dwyre's Car Coupler.

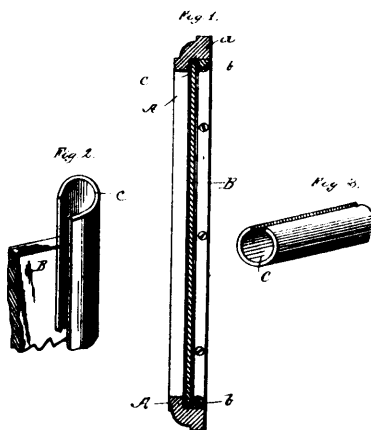


Fig. 1.



Fig. 2.

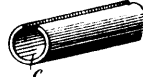
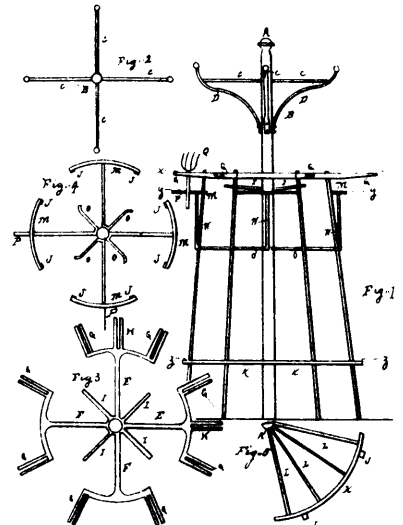
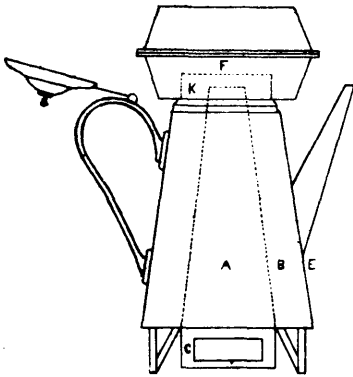


Fig. 3.

31234 Auth's Window Glass Setting.



31235 Herrick's Rack for Agricultural Tools.



31236 Shipman's Lamp or Gas Boiler, etc.

FIG. 1.

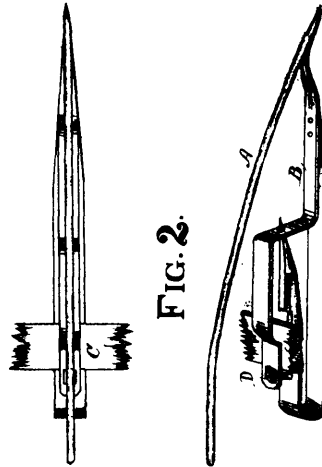
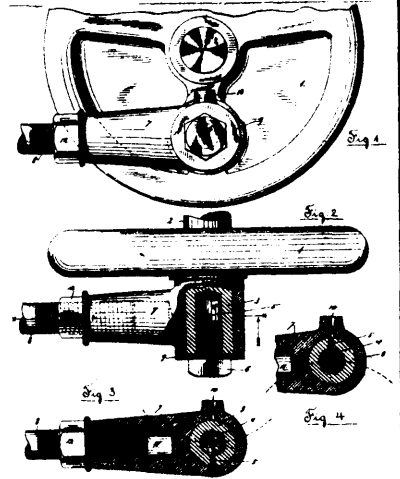
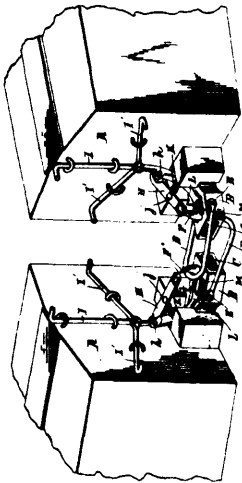


FIG. 2.

31237 Ney's Machine for Cutting Peas.



31238 Parker's Crank Pin.



31239 Diller & White's Car Coupling.

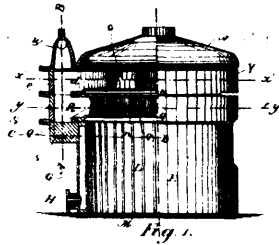


Fig. 1.

31240 Beaupré's Hot Water Furnace.

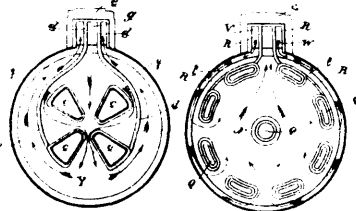
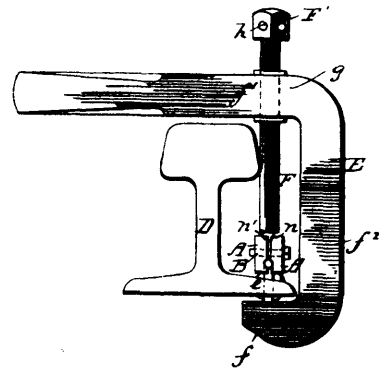
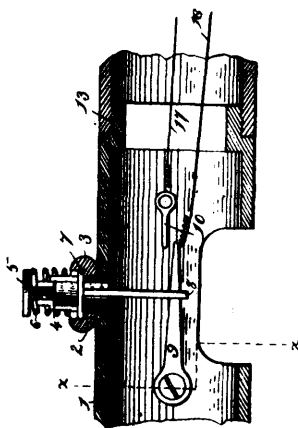


Fig. 7.

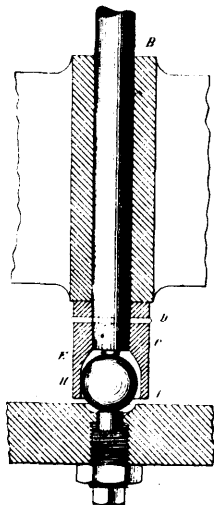
Fig. 8.



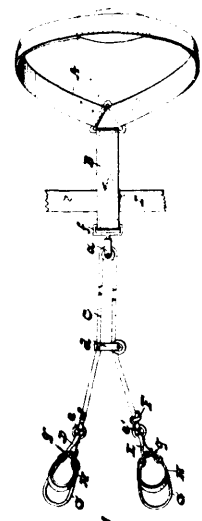
31241 Stitael & Weinedel's Device for Securing Wire to Railway Rails.



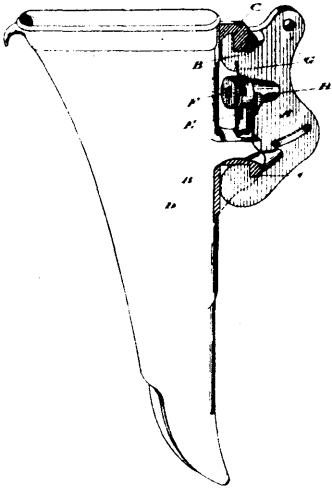
31242 Kester's Regulator for Dynamo-Electric Machines.



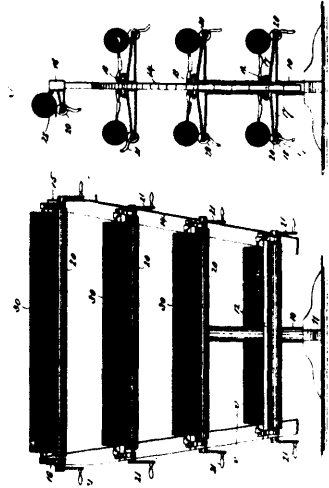
31243 Johansson's Step Bearing for Shafts.



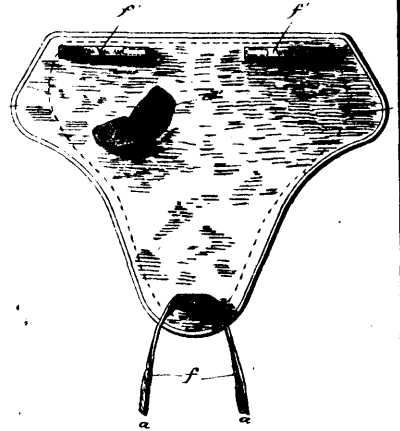
31244 Fales' Hopple.



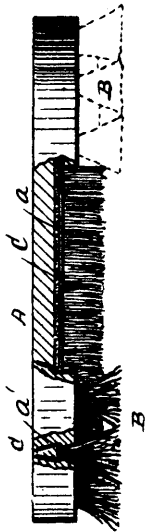
31245 Downing's Seed Drill.



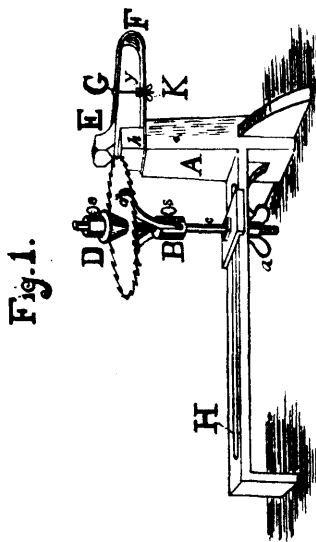
31246 Tea & Hosford's Wire Cloth Holder.



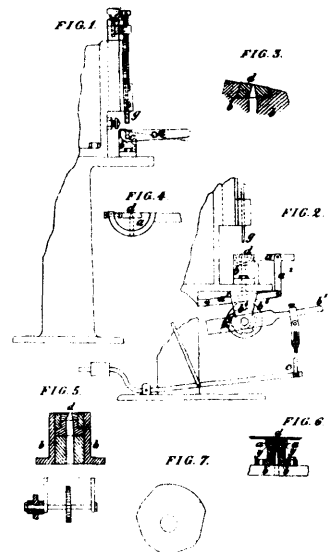
31247 Stewart's Diaper.



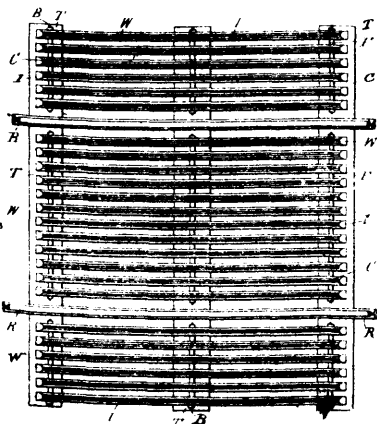
31248 Strickel's Brush.



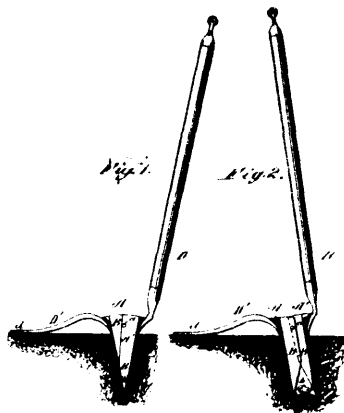
31249 Laughlin's Saw Set.



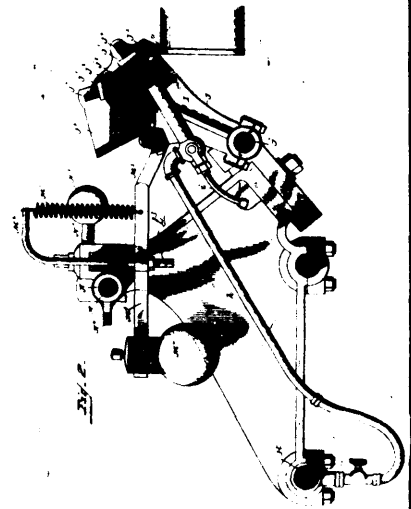
31250 Rasmussen's Punching Machine.



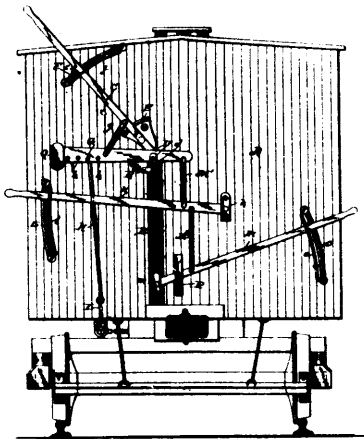
31251 Hall's Railway Cattle Guard.



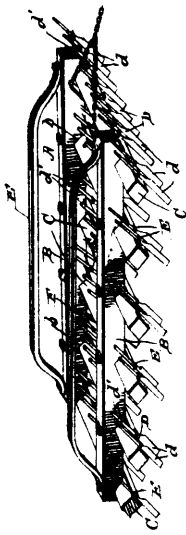
31252 Black's Potato Planter.



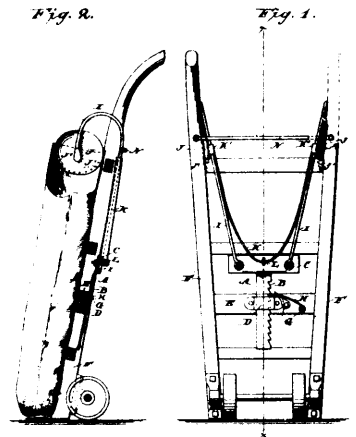
31253 Dolan's Soldering Machine.



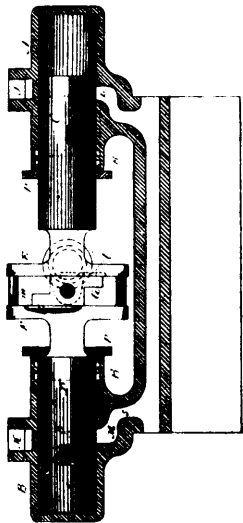
31255 Fletmeyer's Car Brake.



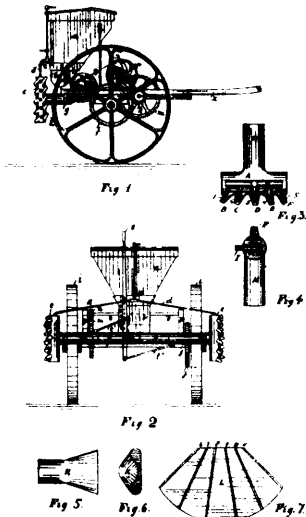
31256 Whipps' Harrow.



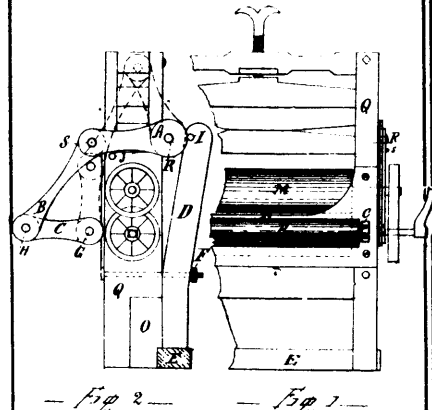
31257 Fischer's Bag-Holder.



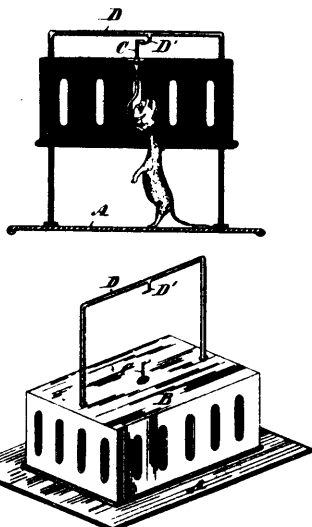
31258 Laforge & Barker's Steam Engine.



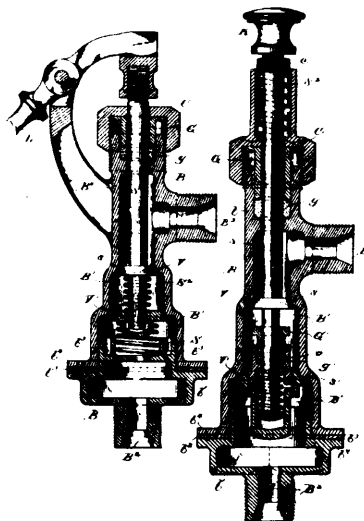
31259 Strawson's Machine for Distributing Solid or Liquid Substances over Land.



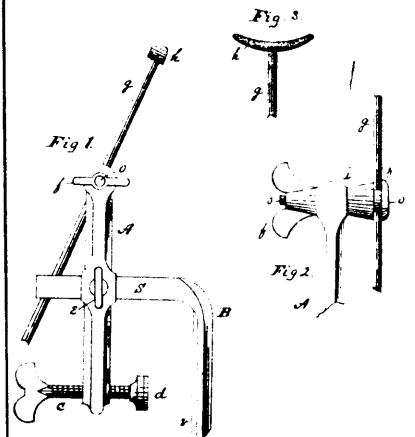
31260 Kinleyside's Clothes Wringer.



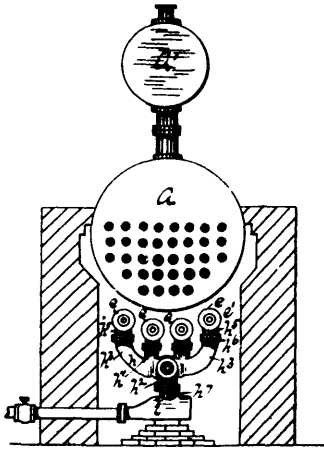
31261 Denman's Trap.



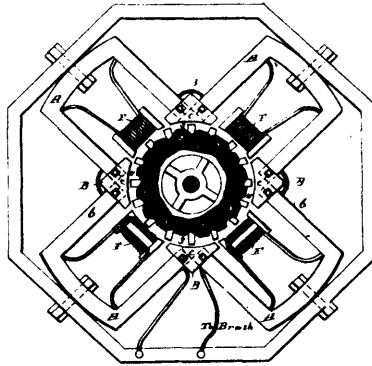
31262 Forestier's Stop Cook.



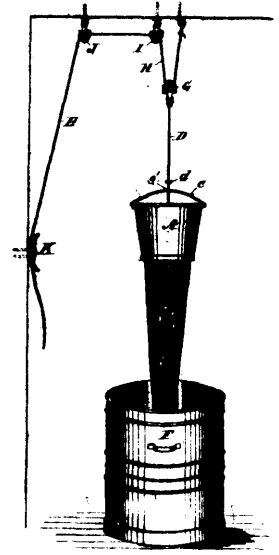
31263 Ryan's Head Rest.



31264 Eno's Steam Generator.



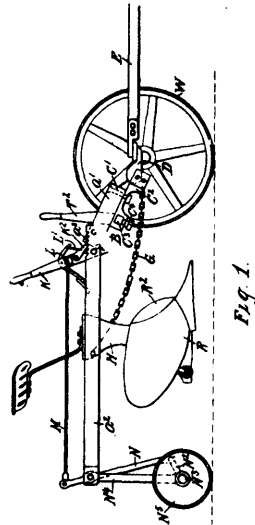
31265 Kester's Dynamo Electric Machine.



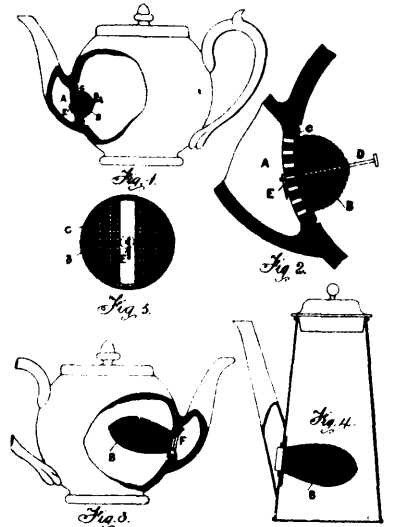
31266 Strong's Milk Erator.



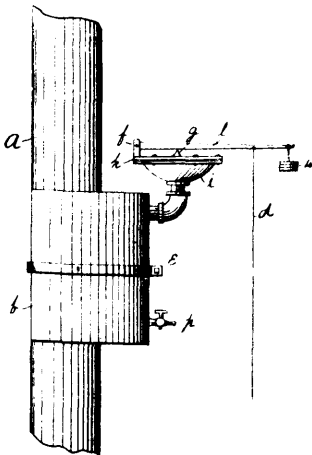
31267 Coon's Transplanting Implement.



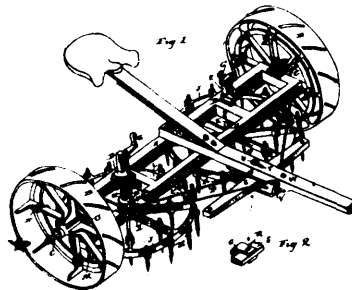
31268 Wilson's Plough.



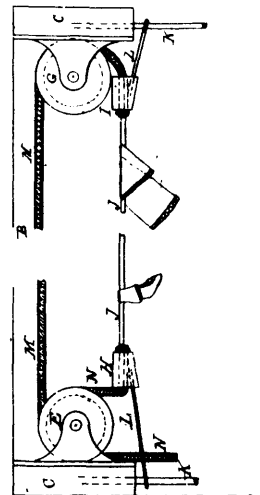
31269 Bowman's Tea and Coffee Pot.



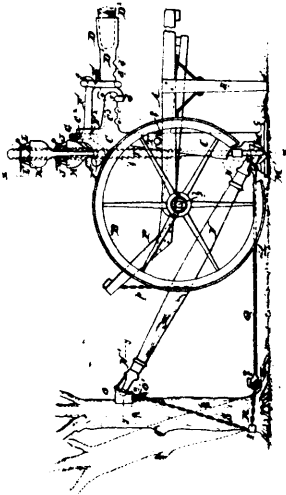
31270 Atsatt's Apparatus for Control of Combustion.



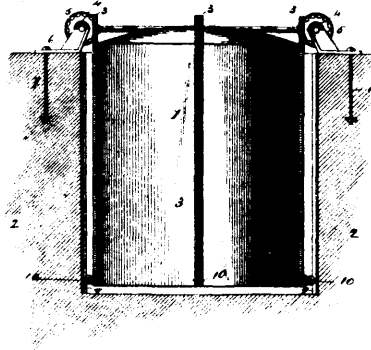
31271 Stump's Harrow.



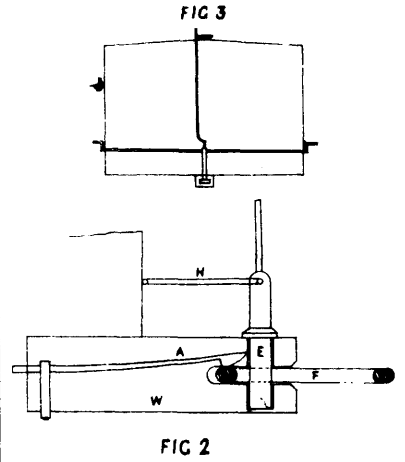
31272 Lincoln's Clothes Drier.



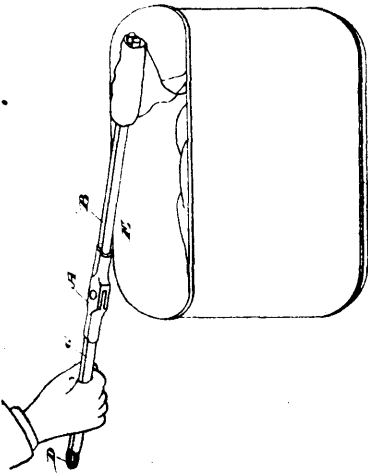
31273 Foulke's Machine for Uprooting Trees.



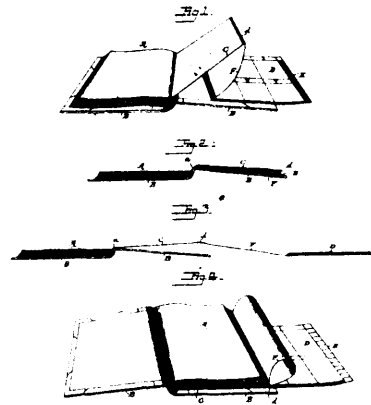
31274 Hammond's Gasometer.



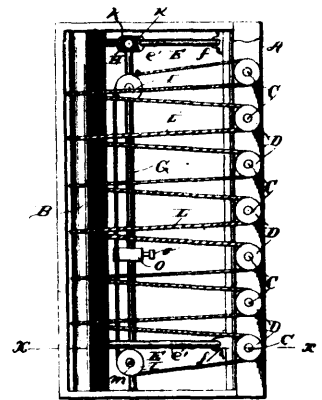
31275 Boss' Car Coupling.



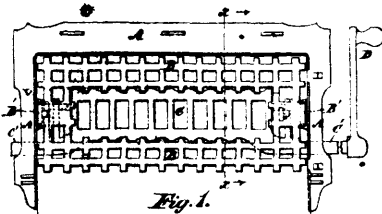
31276 Scott's Clothes Stick.



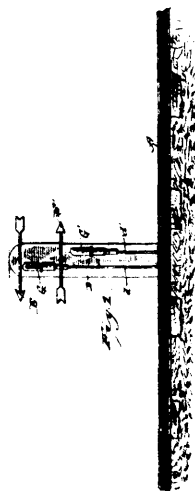
31277 Rigby's Indexing.



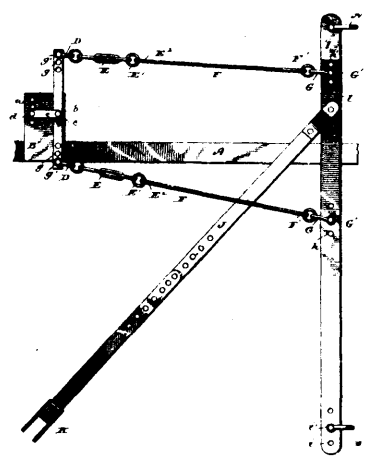
31278 Kenney's Tension Regulator.



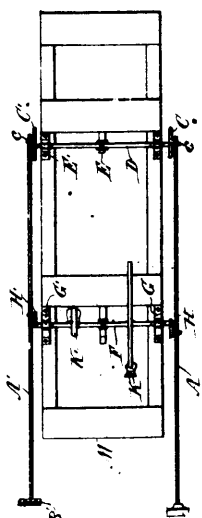
31279 King's Stove and Range Grate.



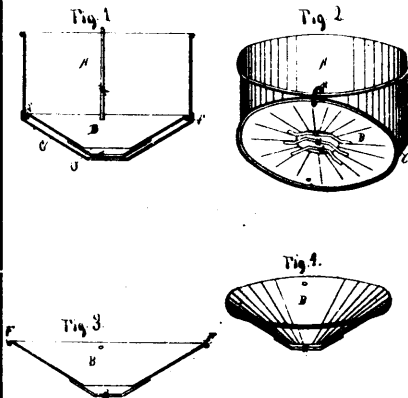
31280 Leedy's Railway Signal.



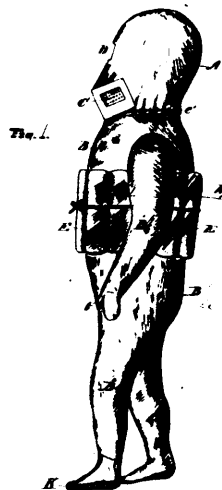
31281 Brown's Evener for Vehicles.



31282 Desmarats' Motor for Vessels.



31283 Jacobs' Feed Box.



31284 Hiller's Life Saving Garment.

Fig. 1.

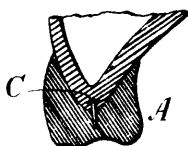
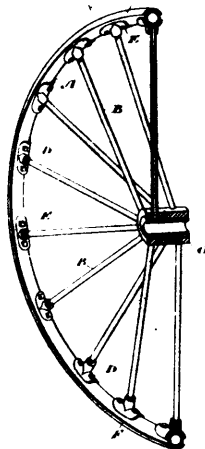


Fig. 2.



31285 Floyd's Artificial Tooth.



31286 Gillies' Wheel.

Fig. 1.



Fig. 2.

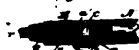
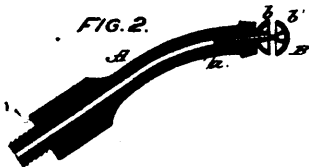


Fig. 3.

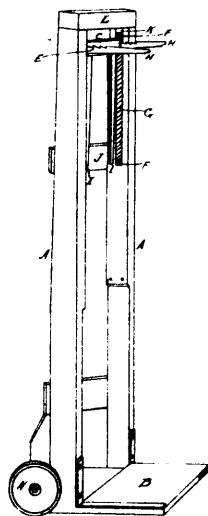


31287 Rose's Addition Register for Pencils, etc.

FIG. 2.



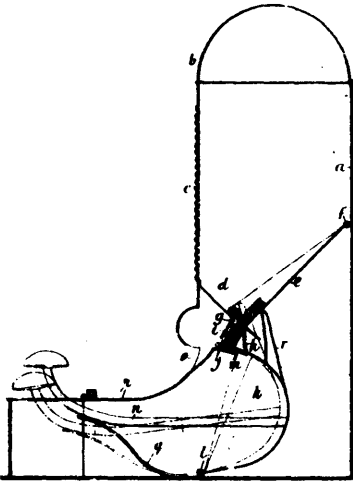
31288 Rose's Mouth-Piece for Pipes, etc.



31289 Wilson's Truck and Bag Holder.



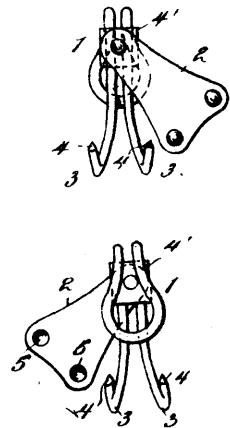
31290 Bielenberg's Fire-Place, etc.



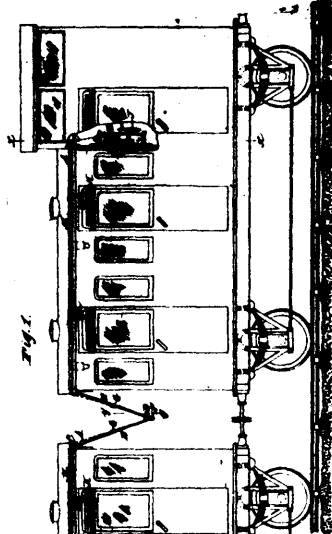
31291 Cannon's Box for Delivering Matches, etc.



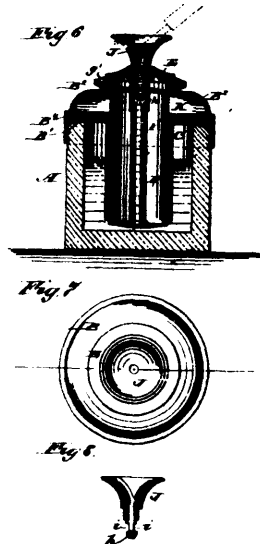
31292 Kattentidt's Machine for Casting Photographic Dry Plates.



31293 Paramore's Fastening for Suspenders.



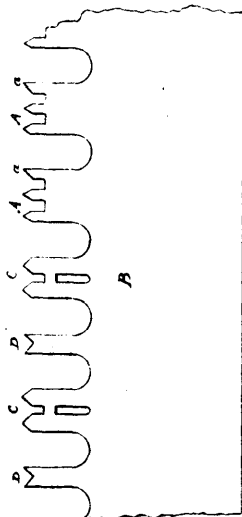
31294 Montgomery's Means for Locking and Unlocking Railway Car Doors.



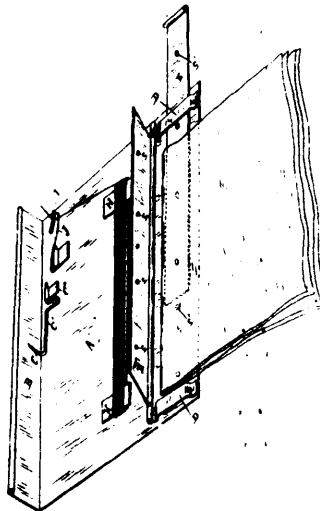
31296 Davis' Ink Stand.



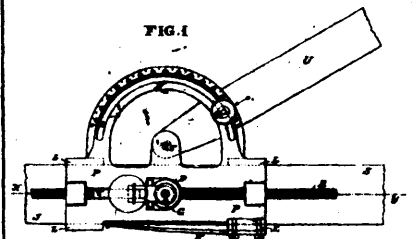
31297 Goodwin & How's Nut Lock.



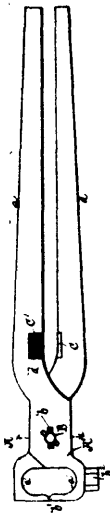
31298 Groa's Cross-Cut Saw.



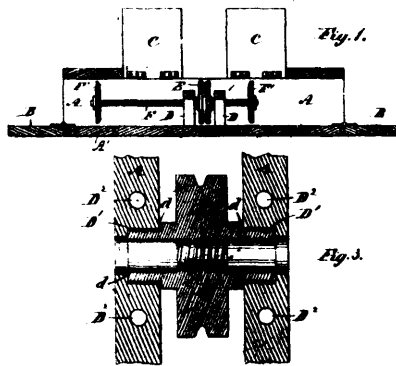
31299 Dornbirer's Temporary Blinder.



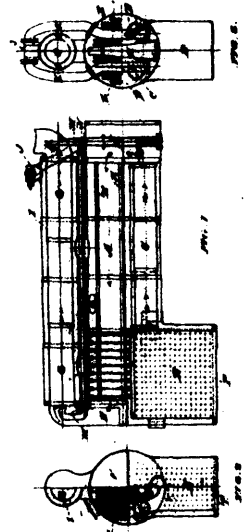
31300 Both's Scale Divider and Section Liner.



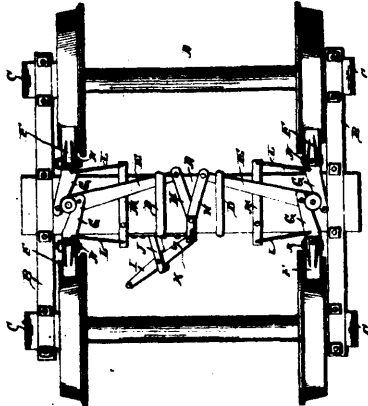
31301 Sponseller's Combinator Tool, etc.



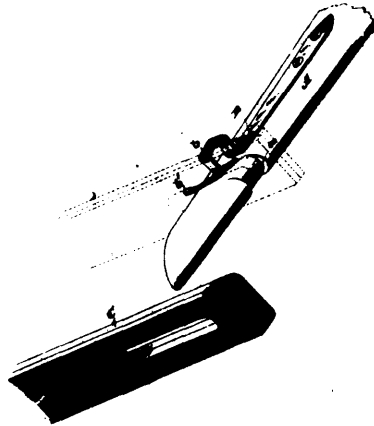
31302 McLean's Baling Press.



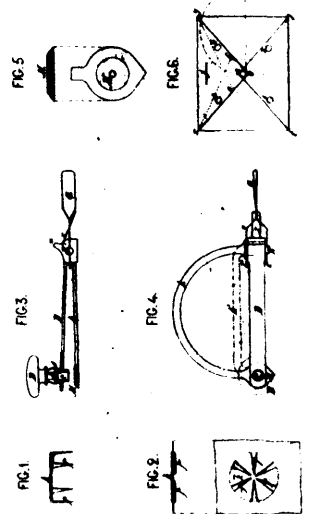
31303 Sharkey's Locomotive Roller.



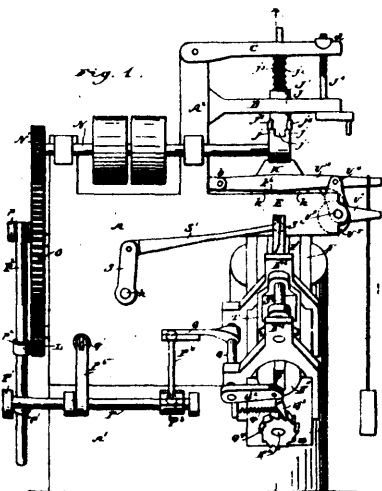
31304 Mayer's Car Brake.



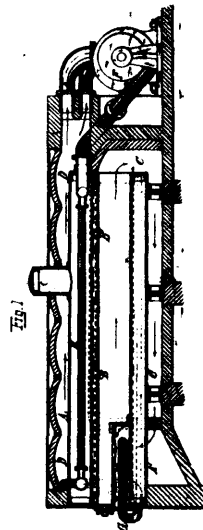
31305 Newsom & Oxley's Tug Fastening.



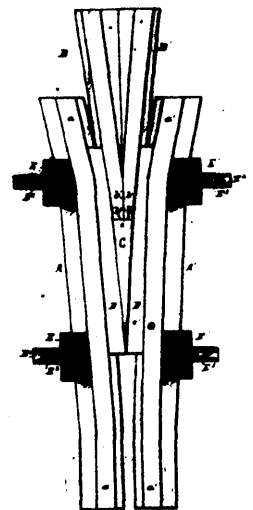
31306 Gros & Poure's Machine for Sealing Letters, etc.



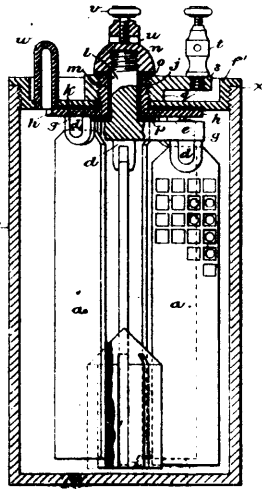
31307 Stoke's Rasp and Rasp Punching Machine.



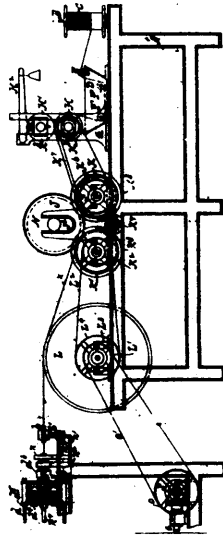
31308 Oldroyd's Furnace.



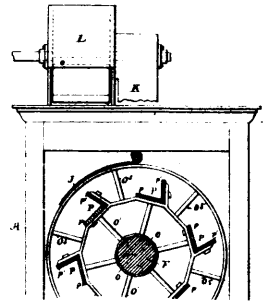
31309 Darwin's Railway Frog.



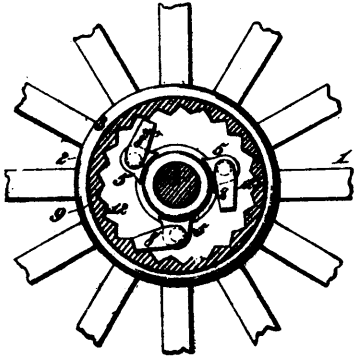
31310 Flick's Secondary Battery.



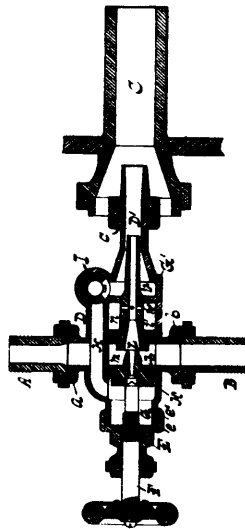
31311 Cheyne's Machine for Finishing and Completing Twines, etc.



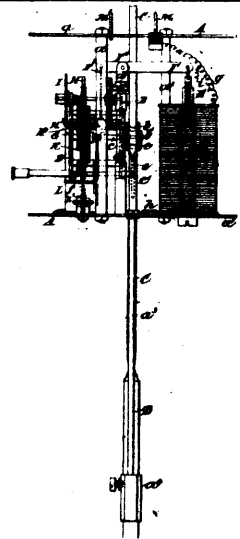
31313 Case's Rotary Bolt.



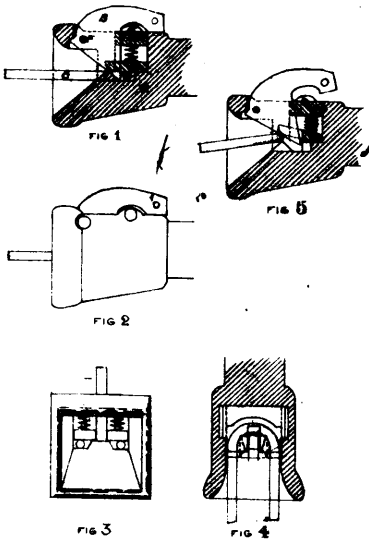
31314 Summers' Pawl and Ratchet Mechanism for Seeding Machine Wheels.



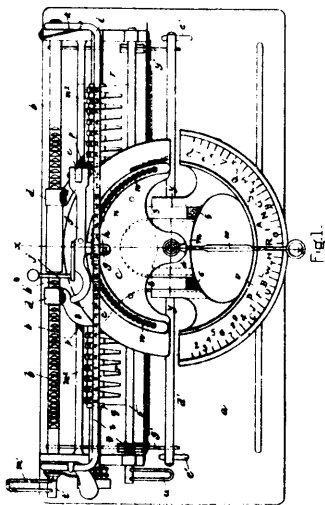
31315 Fisk's Spray Oil Burner.



31316 Lea's Method of Checking the Feed of an Arc Lamp, etc.



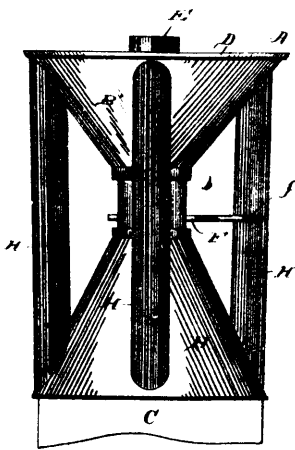
31317 Boney's Car Coupler.



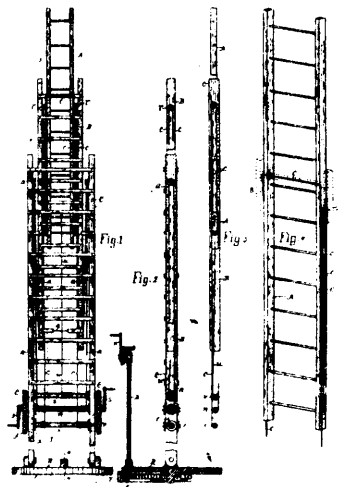
31318 Allen's Type Writing Machine.



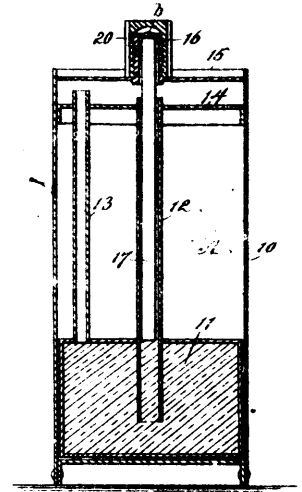
31319 Heller's Toy Picture.



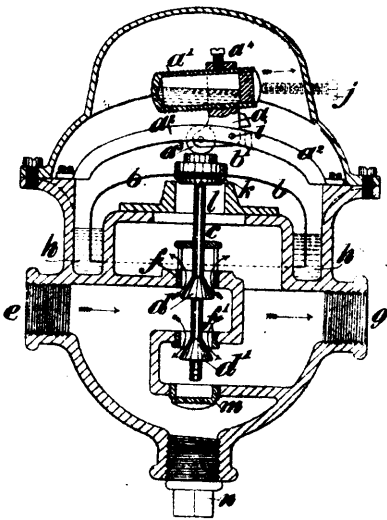
31320 Barnes' Heating Drum.



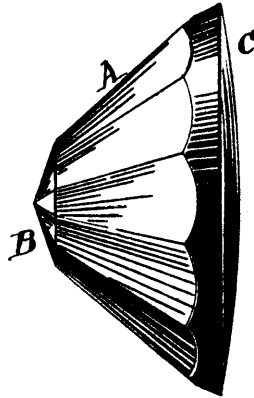
31321 Sutherland's Fire Ladder.



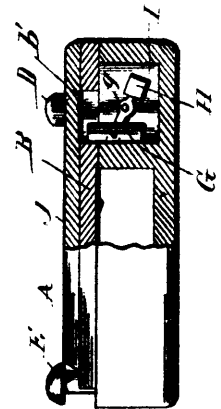
31322 Earle's Marine Signal Bomb.



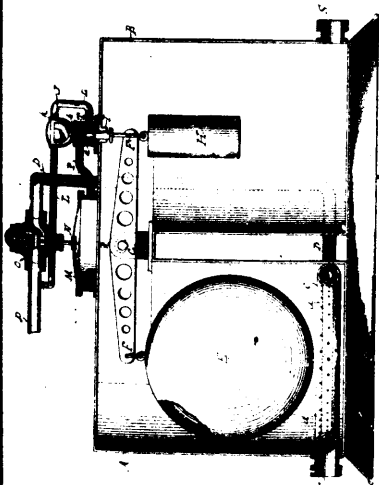
31323 Bardsley's Gas Regulator



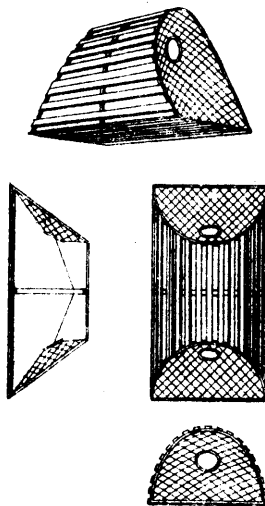
31324 Coad's Lens.



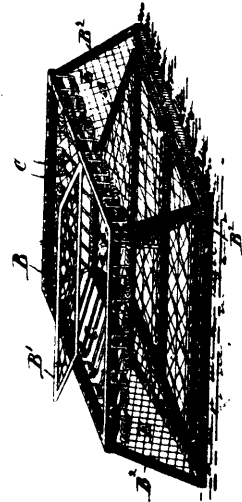
31325 Kimball's Tobacco Box.



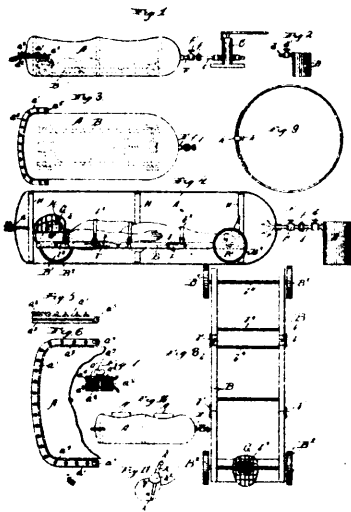
31326 Frost's Device for Regulating the Quality of Carburetted Gas.



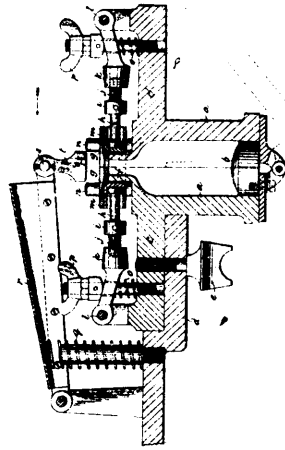
31327 Forrest's Machine for Catching Lobsters.



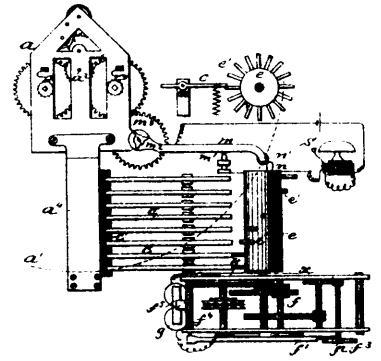
31328 Hurst's Lobster Trap.



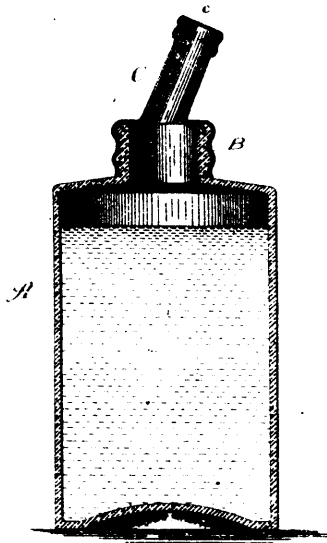
31328 Horsey's Apparatus for Embalming.



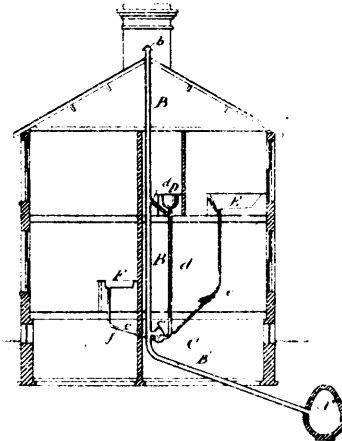
31330 Washington's Bottle Mould.



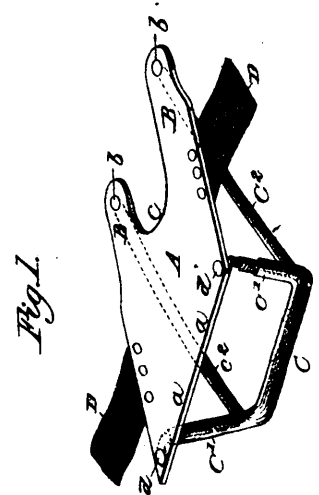
31331 Fessenden's Time Detector.



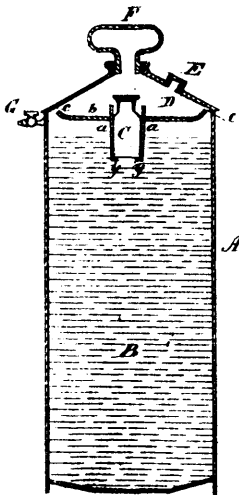
31332 Redington's Bottle Stopper.



31333 McNeill's House Sewerage System.



31334 Benedict's Veterinary Surgery.



31335 Carr's Fire Extinguisher.

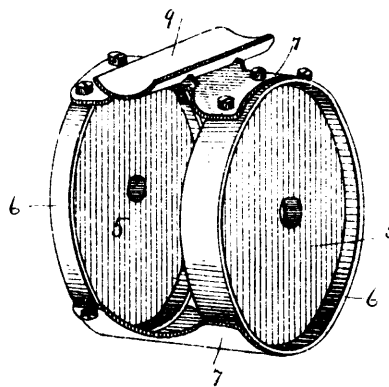
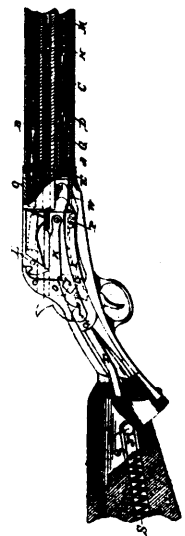
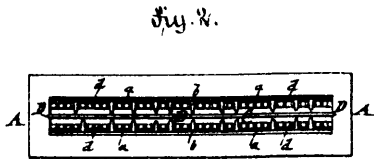


FIG. 7.

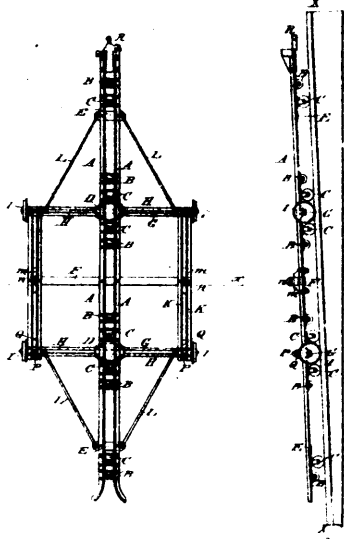
31336 Bradford's Fishing Reel.



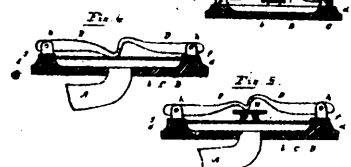
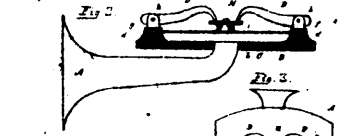
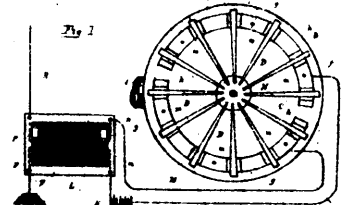
31337 Pitcher's Magazine Gun.



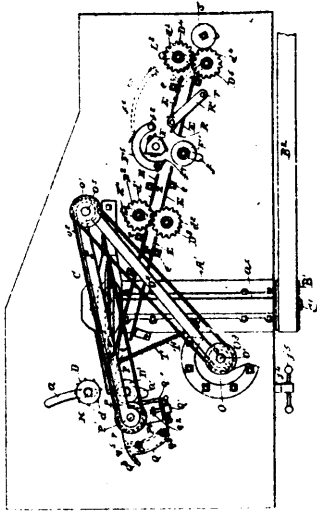
31338 Wark's Sign Plate.



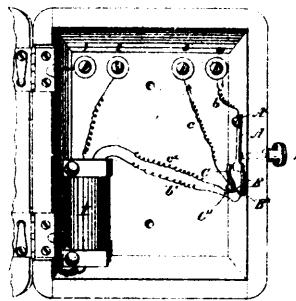
31339 Woods' Boat Launching Carriage.



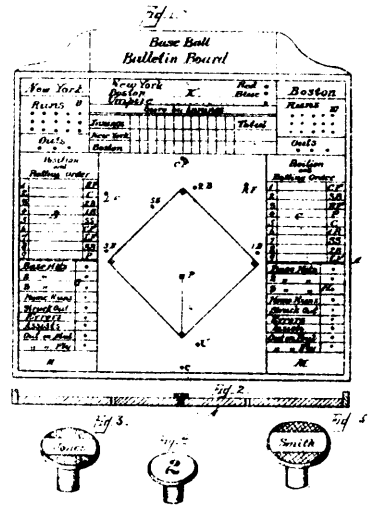
31340 Gillett's Transmitter for Telephones.



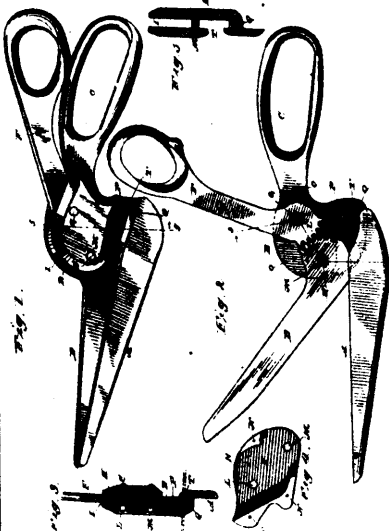
31341 Olund's Barrel Hoop Machine.



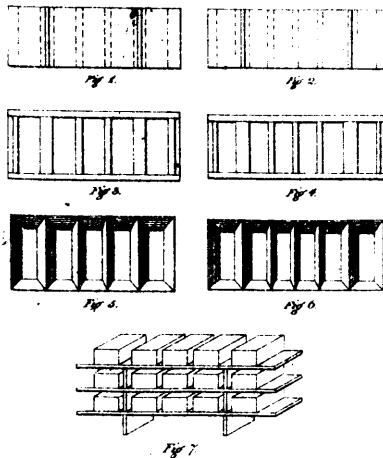
31342 Sise's System of Telephonic Communications.



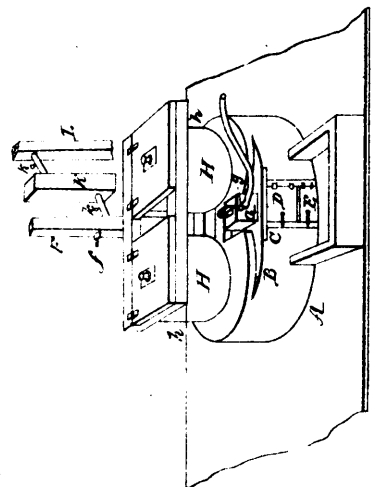
31343 Van Zile's Base Ball Bulletin Board.



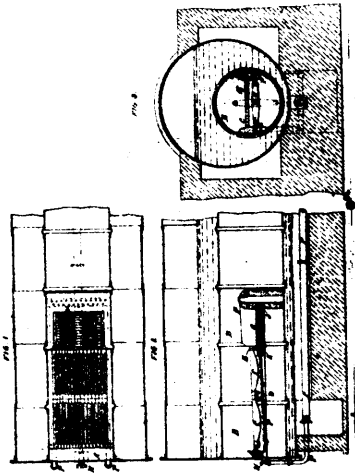
31344 Cooper's Shears.



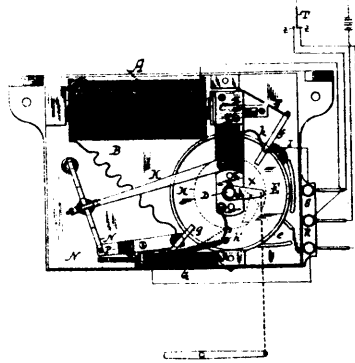
31346 Locke's Machinery for Manufacturing Brick, etc.



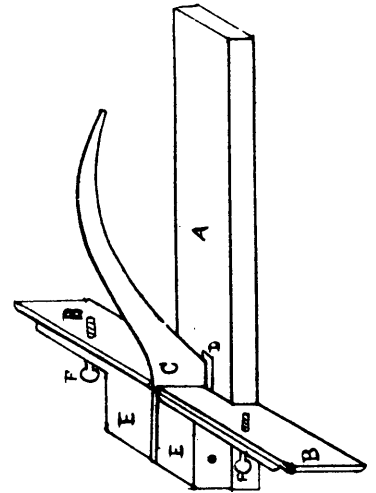
31347 Tvedten's Agricultural Boiler, &c.



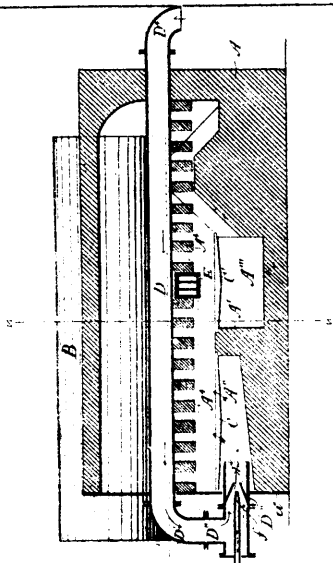
31348 Annandale's Furnace.



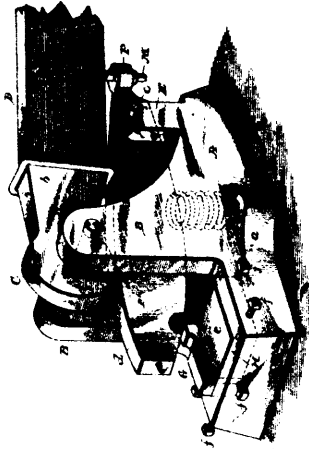
31349 Davis & Westervelt's Electric Motor.



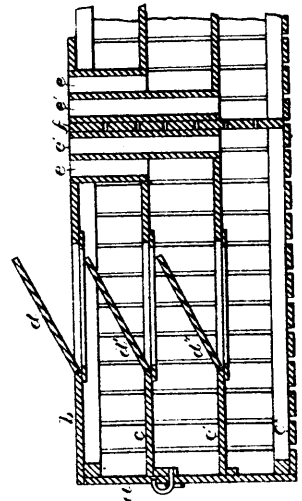
31350 Hewitt's Machine for Setting Saws.



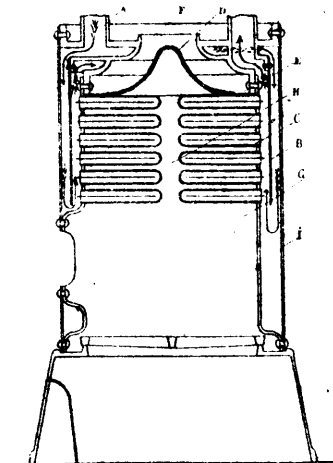
31351 Good's Furnace.



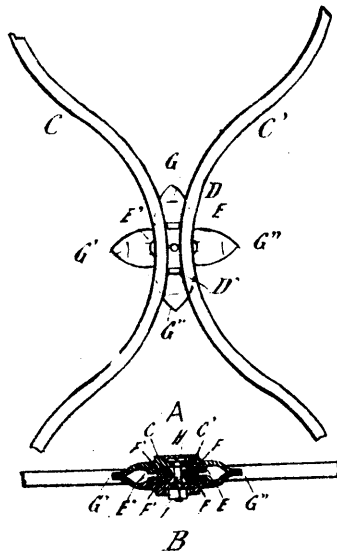
31352 Schofield's Punch, Shears and Saw Gummer.



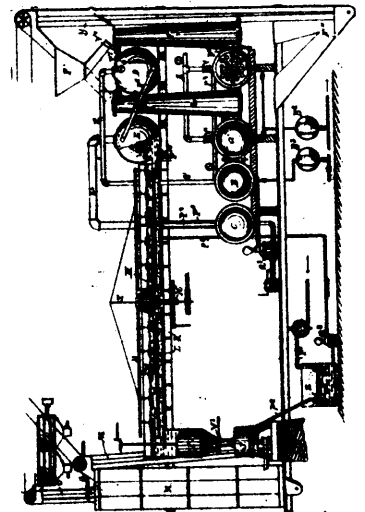
31353 Burns' Lobster Pound.



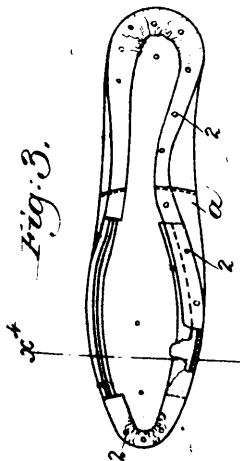
31354 Manny's Boiler.



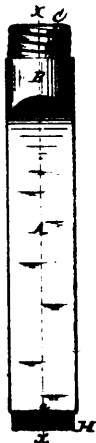
31355 Goudron's Grate.



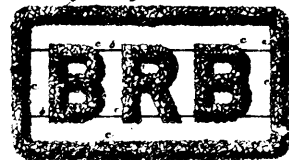
31356 Alberger & Williams' Apparatus for the Manufacture of Salt.



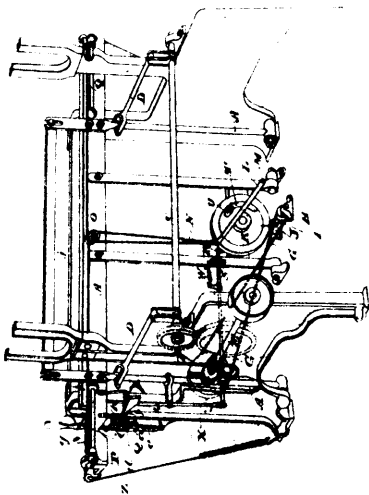
31357 French's Boot or Shoe.



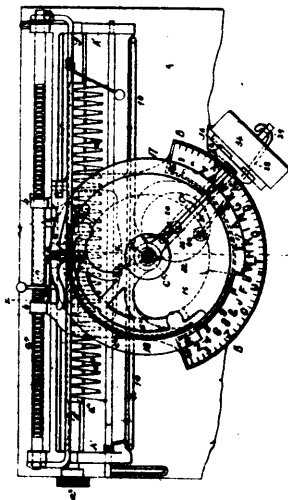
31358 Elias' Envelope and Stamp Moistener.



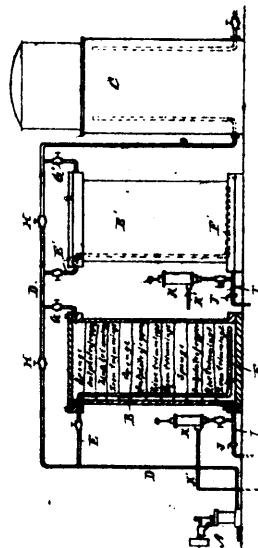
31359 Belle's Crystallizing Frame.



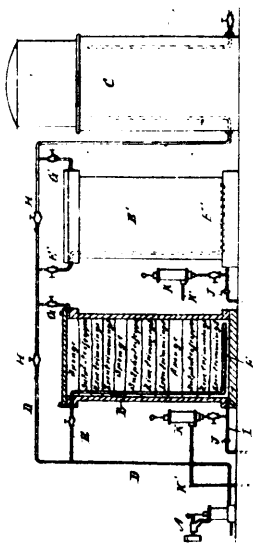
31360 Brook's Loom.



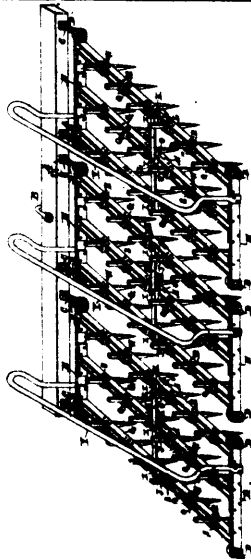
31361 Escobar's Type Writing Machine.



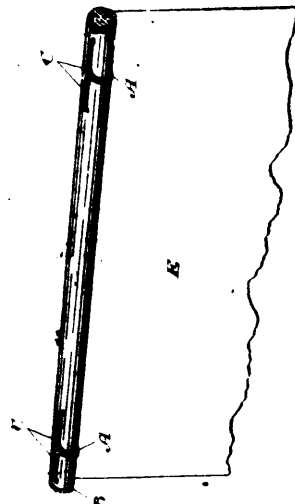
31362 Wood's Apparatus for Manufacturing Gas.



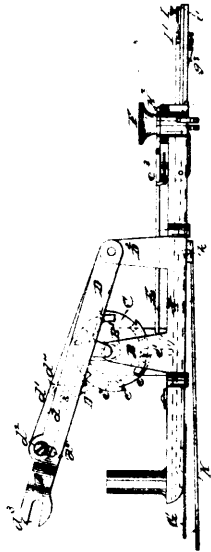
31363 Wood's Process of Manufacturing Gas.



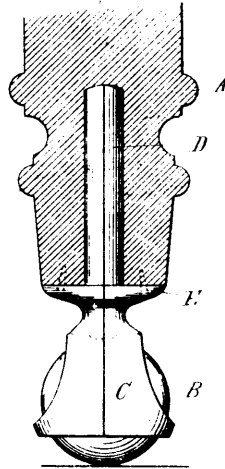
31364 Roger's Harrow.



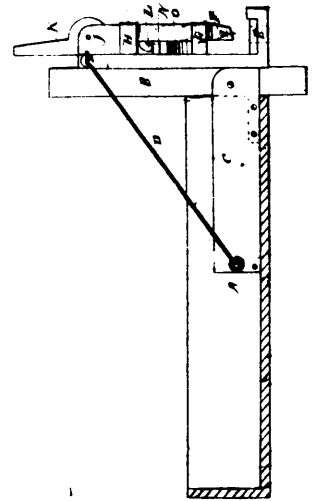
31365 Frost's Blind Fastener.



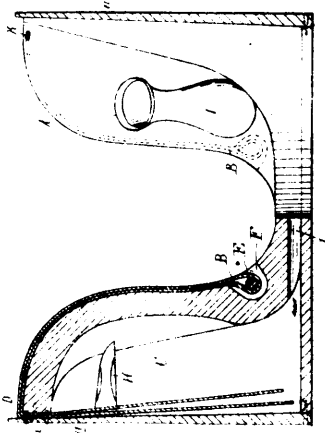
31366 Williams' Button Hole Attachment.



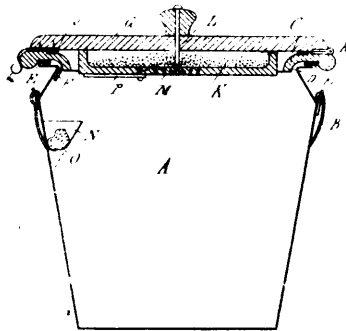
31367 Hambuger's Caster.



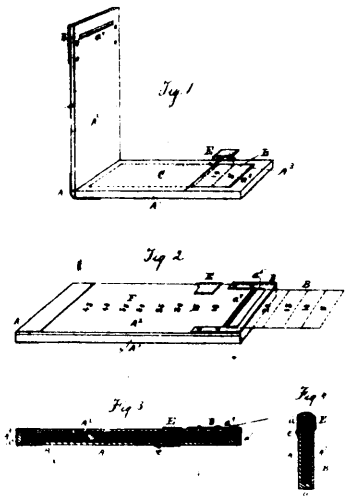
31368 Payne's Patching Device.



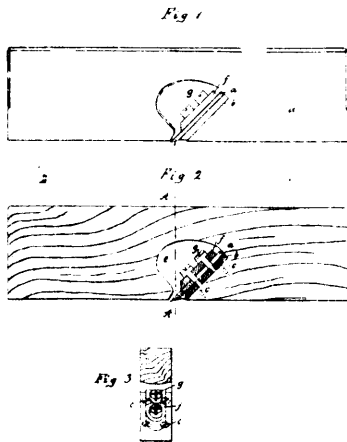
31369 Wright's Lubricator.



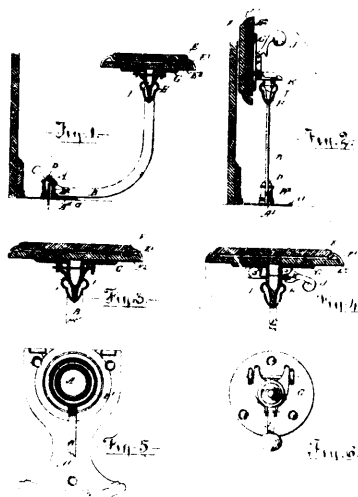
31370 Kinney's Commode.



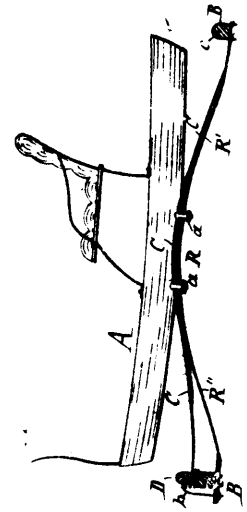
31371 McDonald's Railway Ticket.



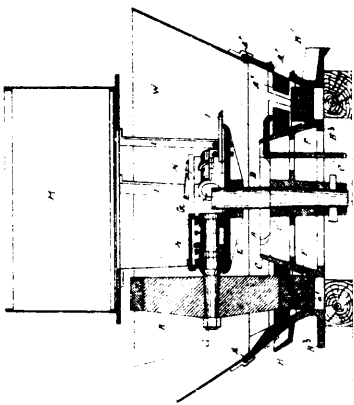
31372 Meister's Plane.



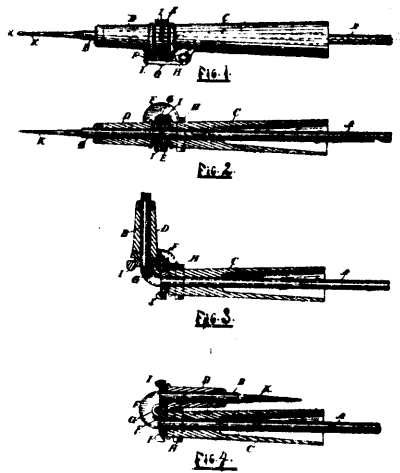
31373 Scott's Stool.



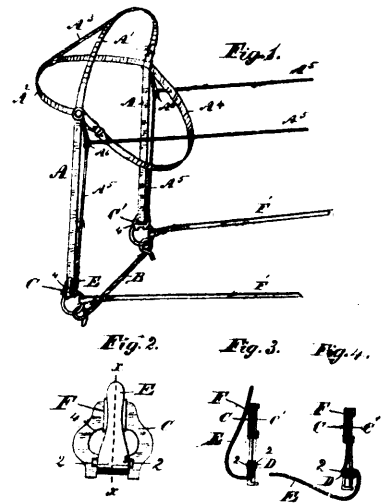
31374 Moyer's Spring Vehicle.



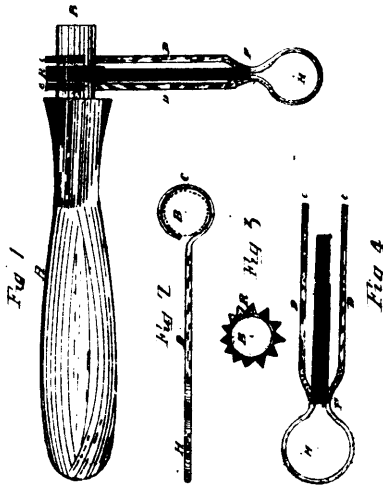
31376 Bryan's Quartz Mill.



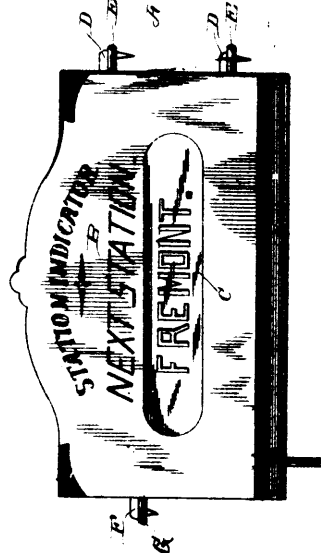
31377 Winn's Dental Drill.



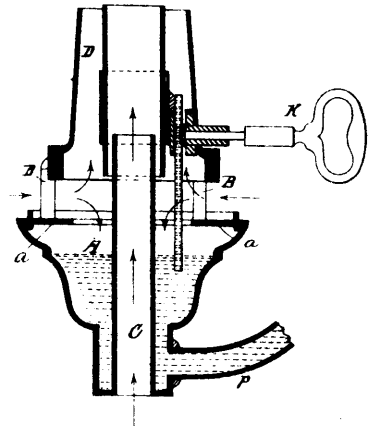
31378 McLean's Bridle.



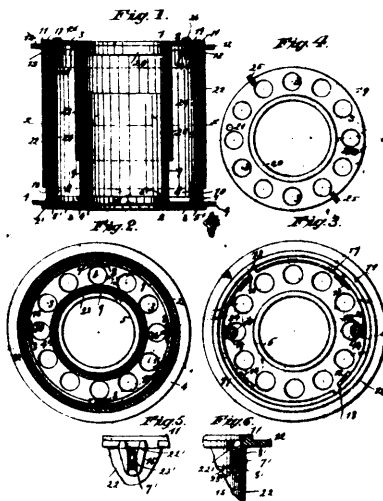
31379 Pringle's skipping Rope Handle.



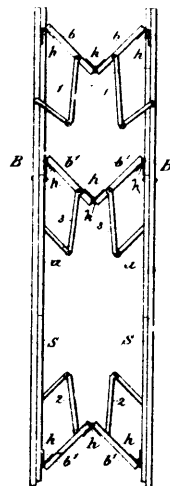
31380 Angel's Station Indicator.



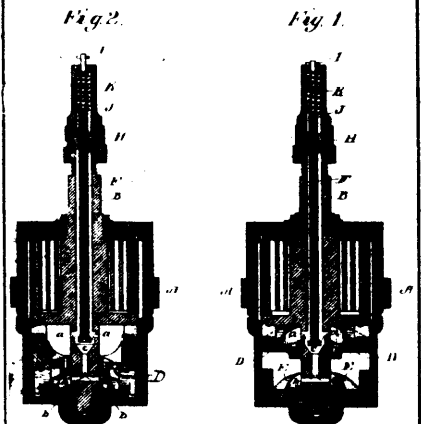
31381 Aria's Oil Lamp.



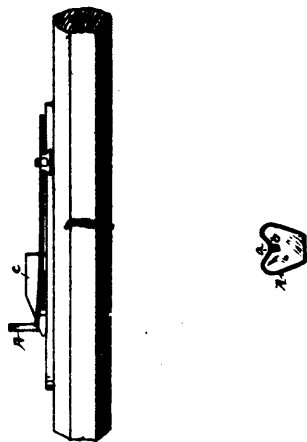
31382 Staub's Stove Pipe Thimble.



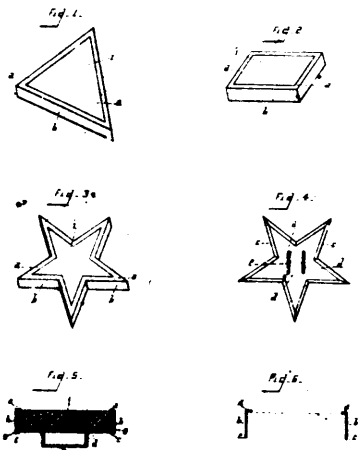
31383 Whitehead's Collapsible Chair.



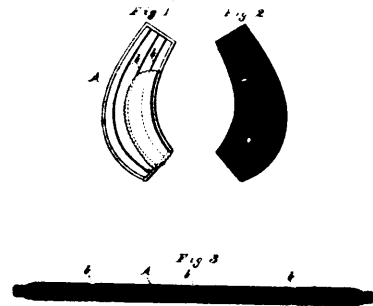
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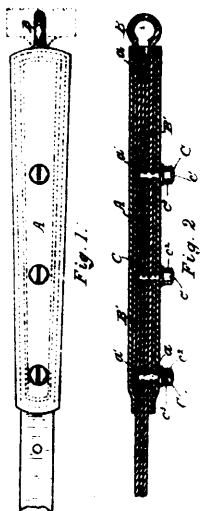
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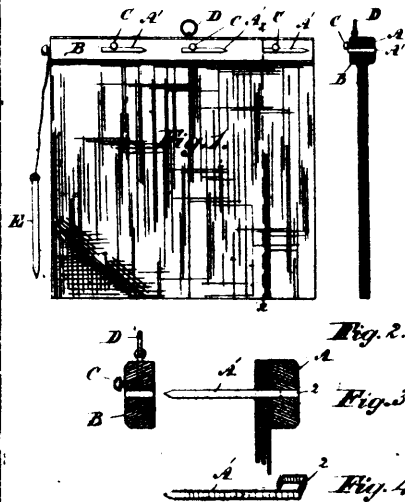
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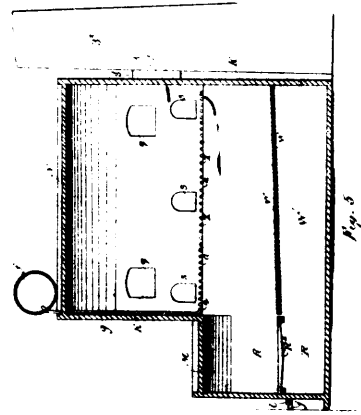
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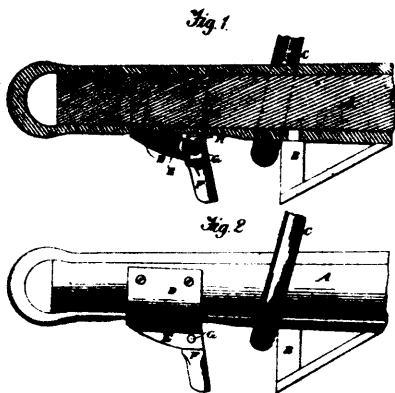
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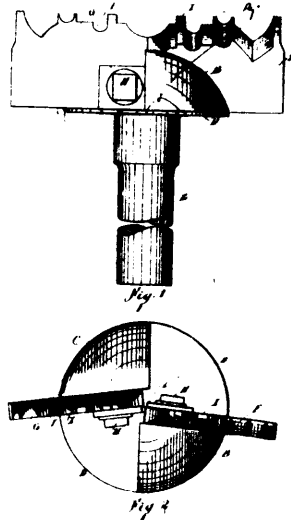
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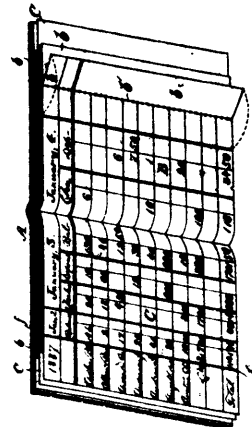
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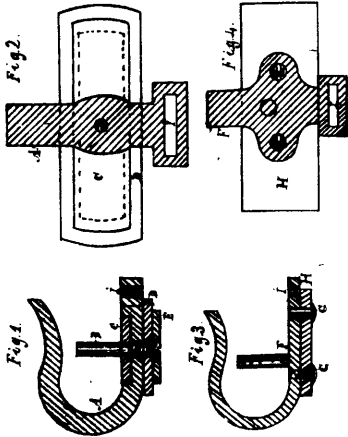
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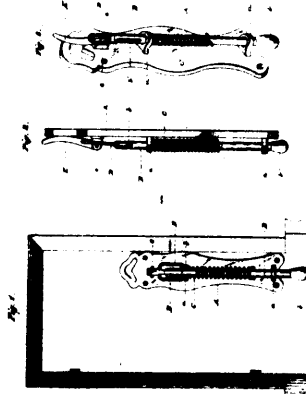
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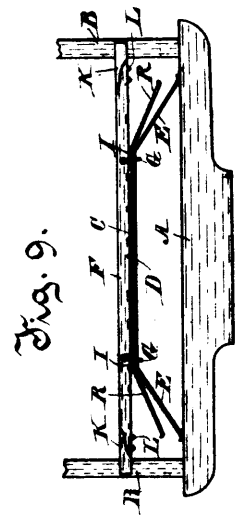
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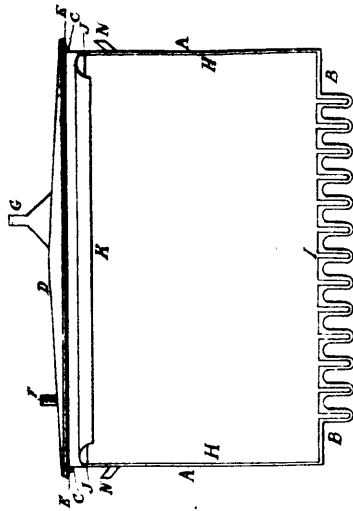
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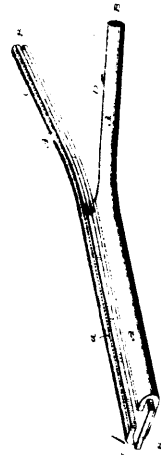
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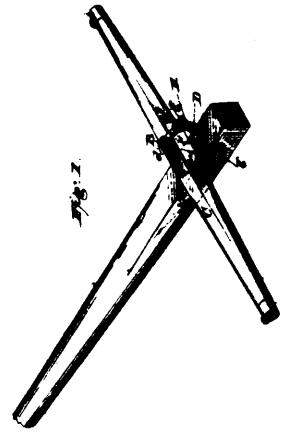
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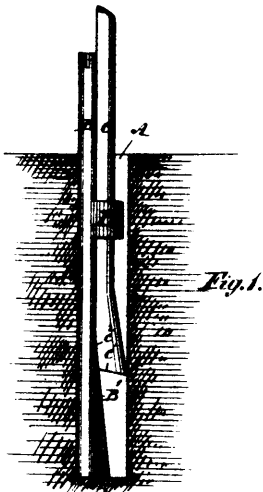
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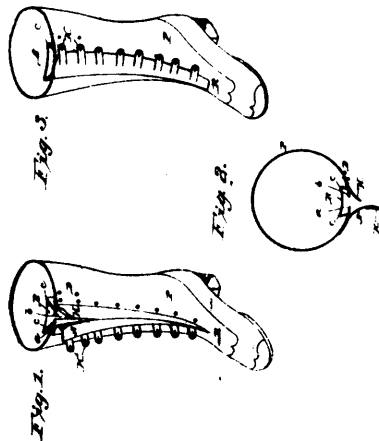
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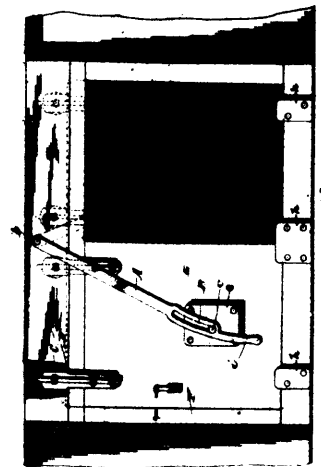
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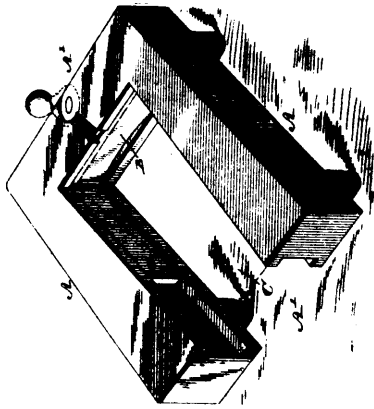
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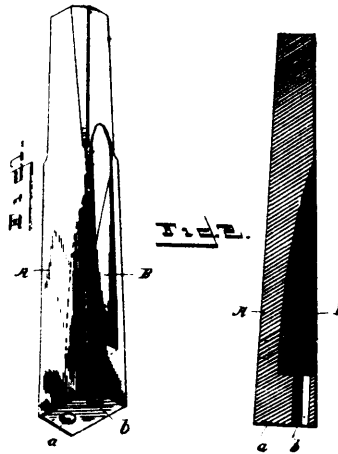
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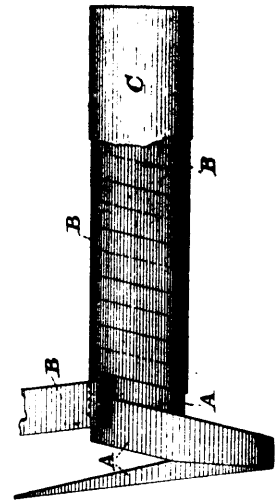
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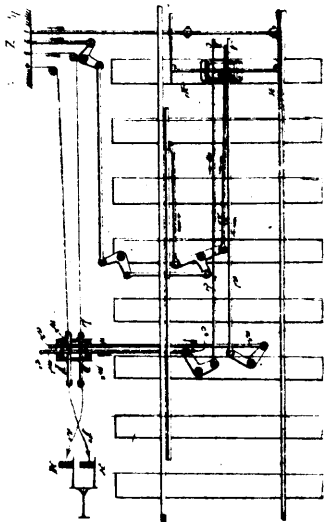
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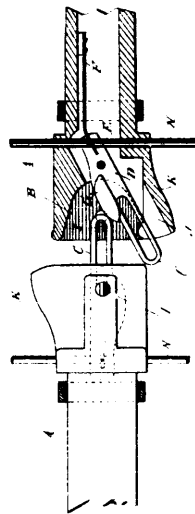
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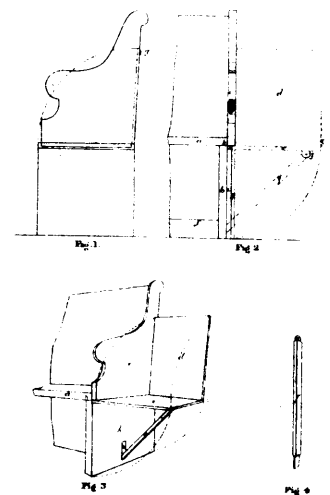
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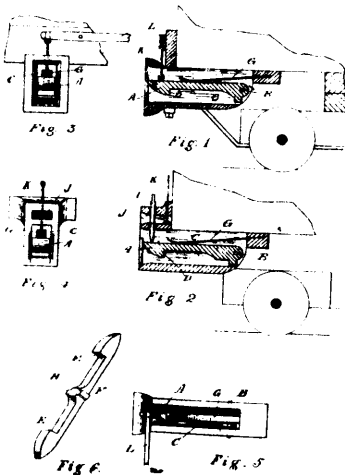
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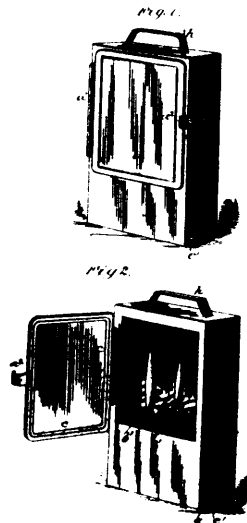
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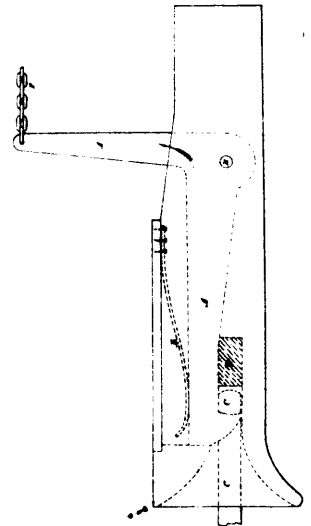
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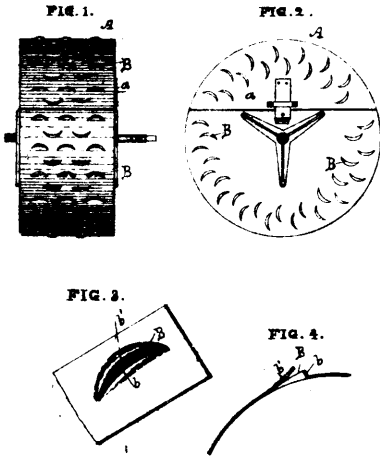
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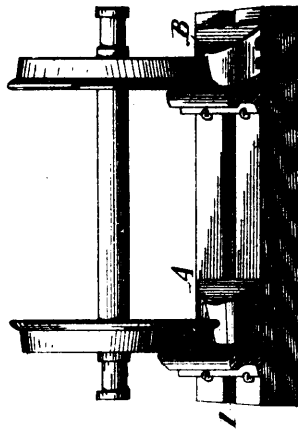
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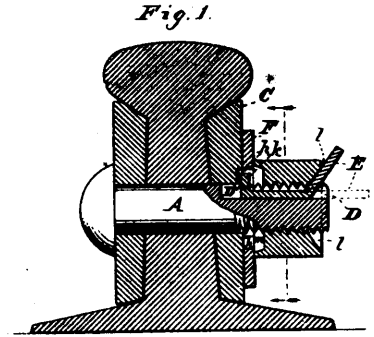
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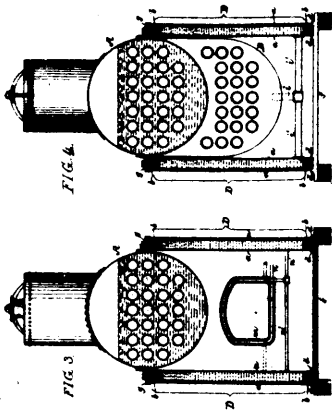
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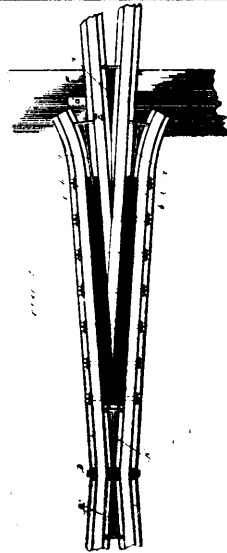
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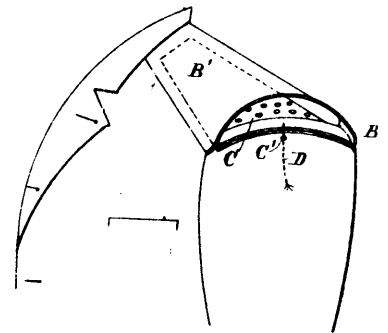
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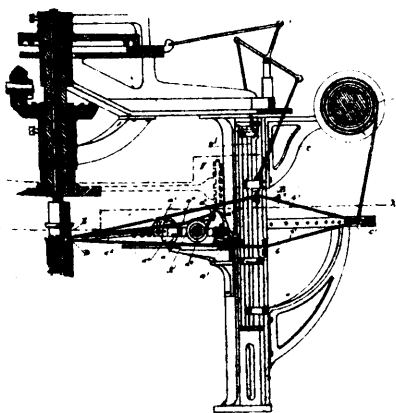
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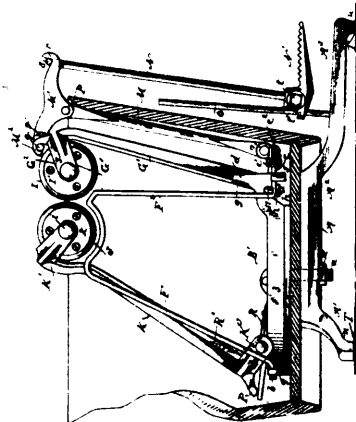
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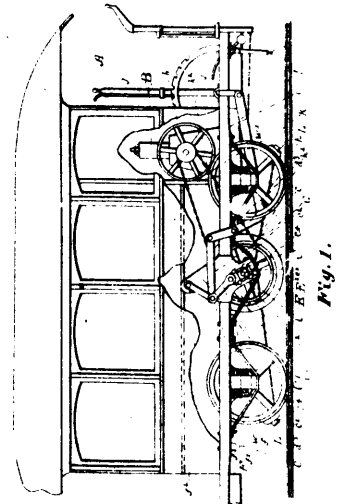
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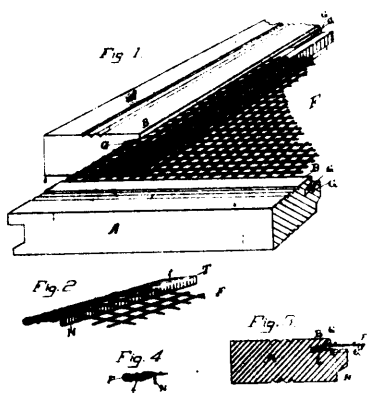
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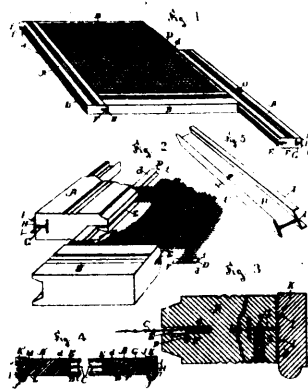
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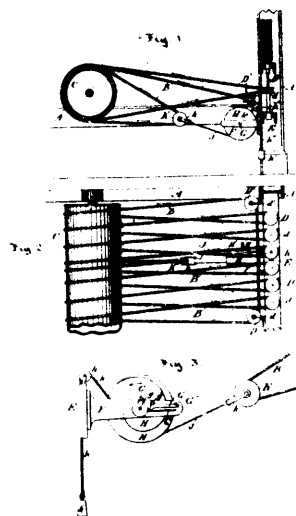
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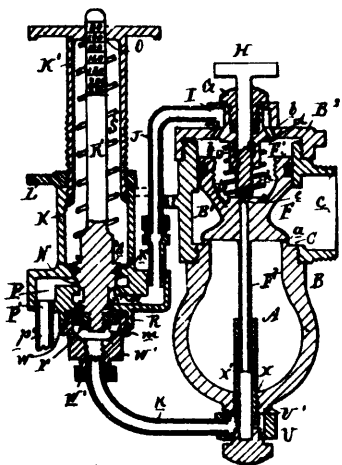
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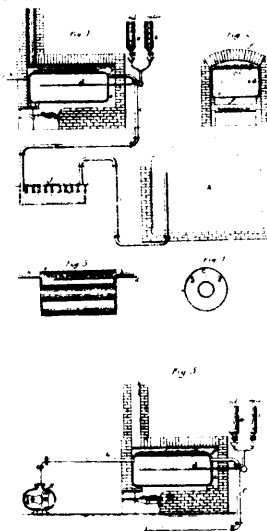
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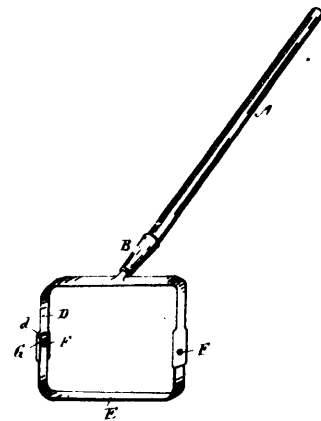
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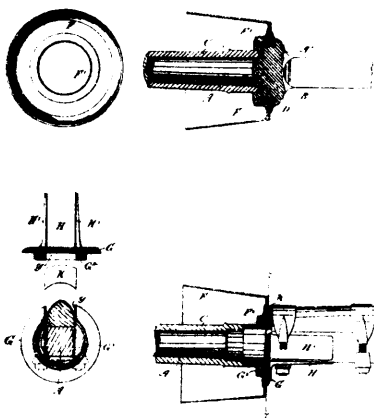
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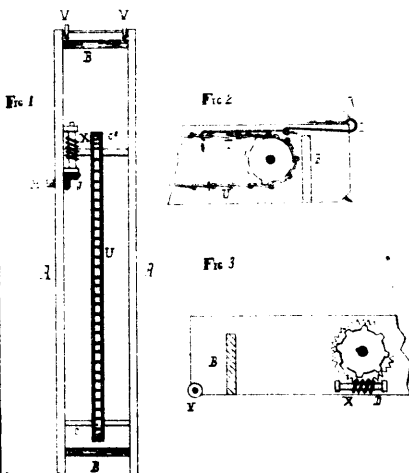
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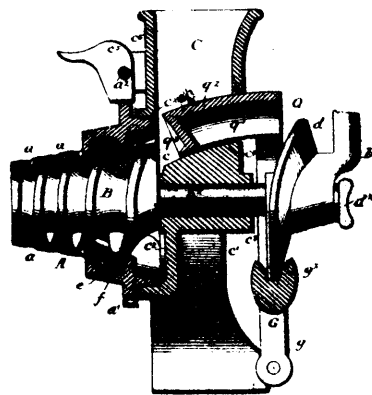
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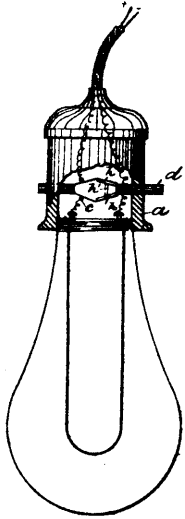
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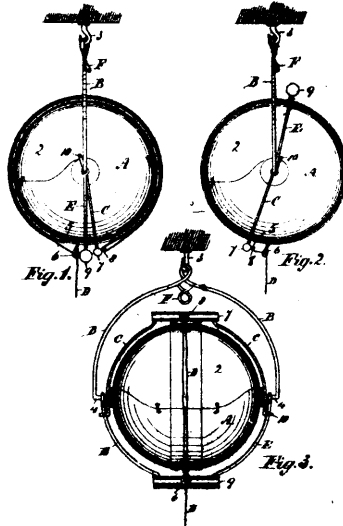
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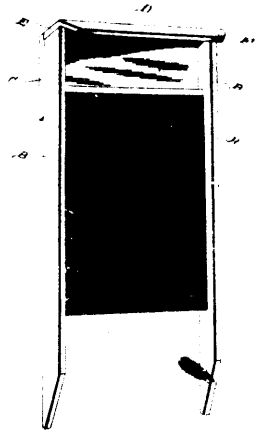
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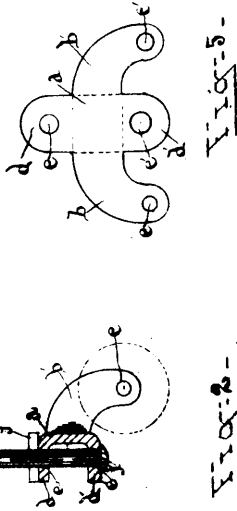
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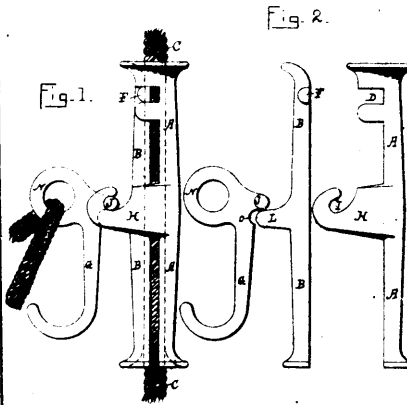
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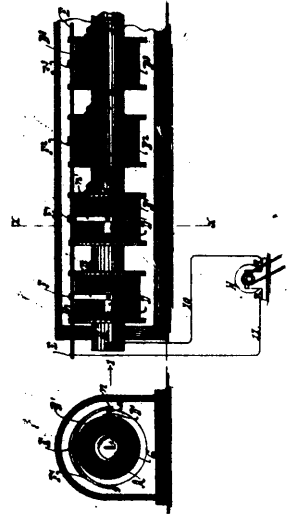
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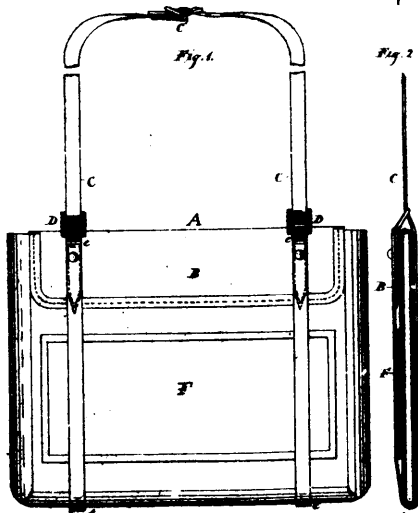
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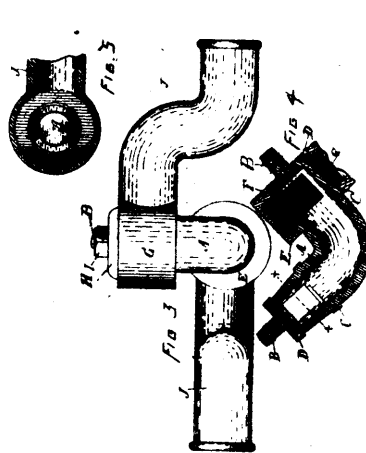
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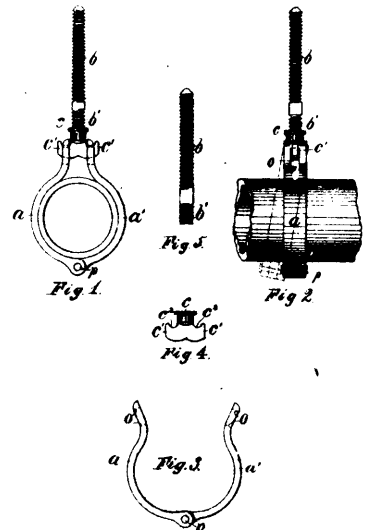
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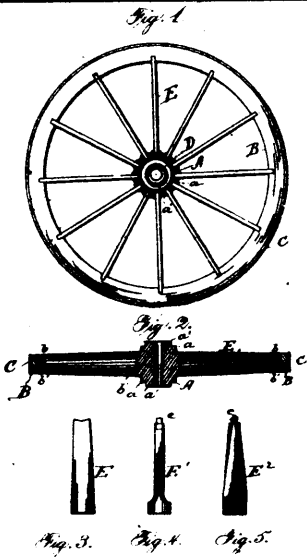
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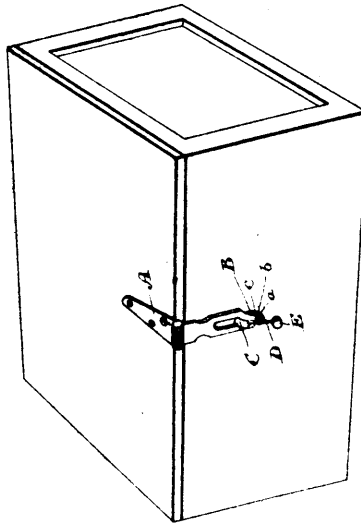
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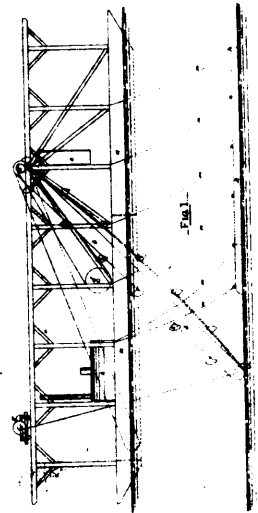
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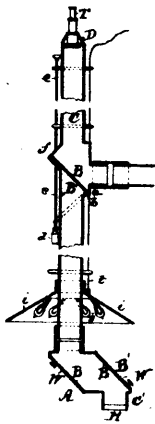
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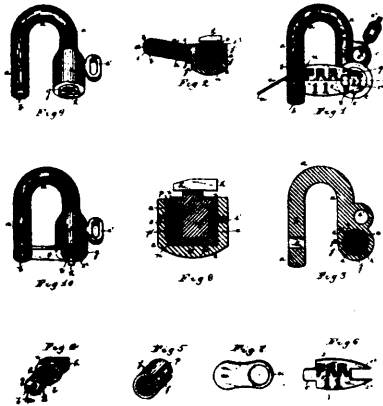
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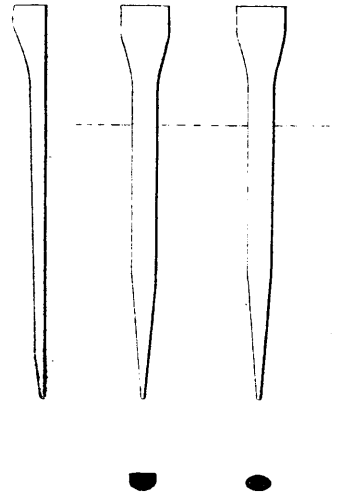
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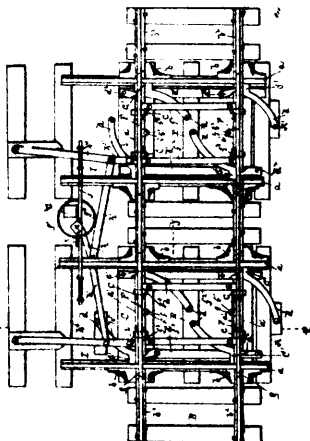
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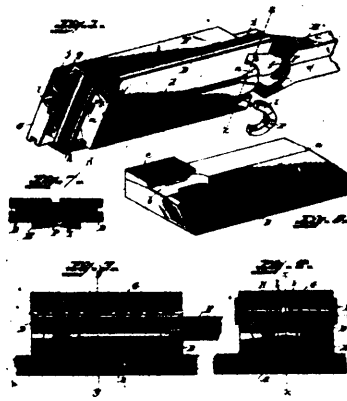
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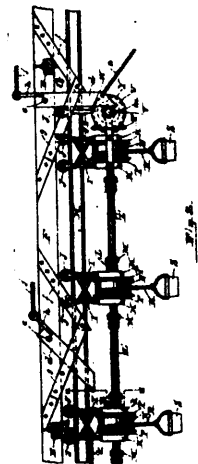
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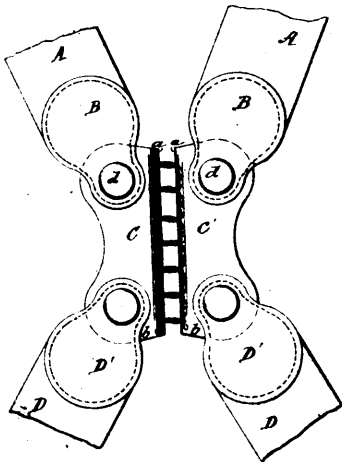
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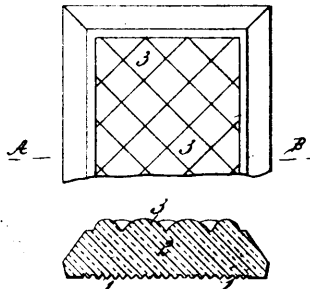
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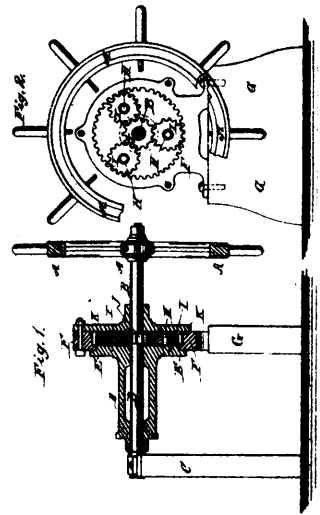
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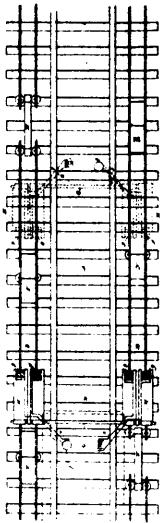
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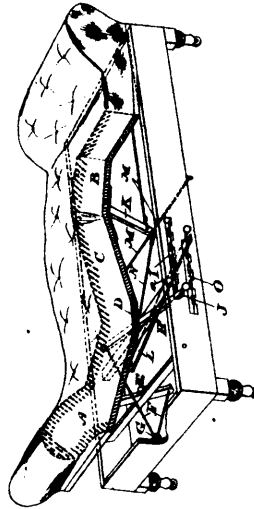
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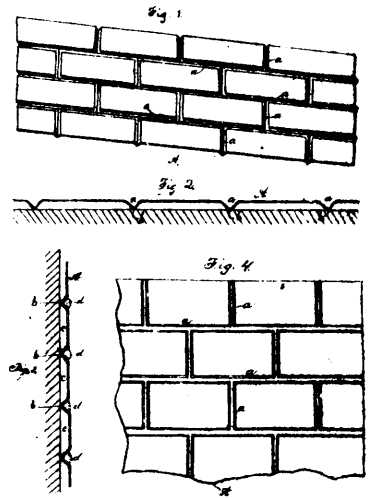
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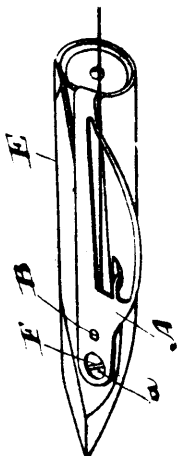
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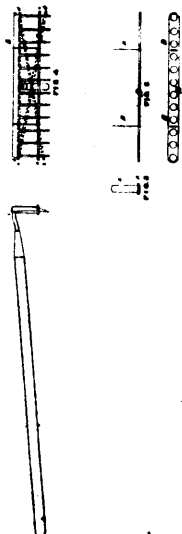
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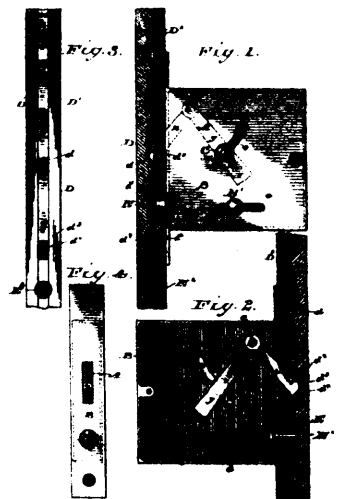
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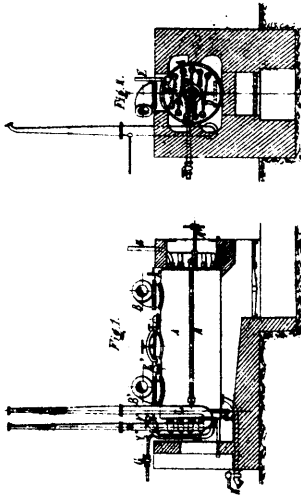
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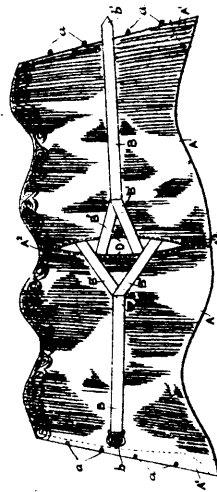


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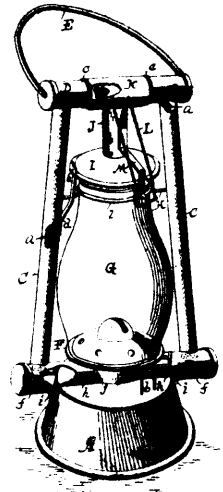


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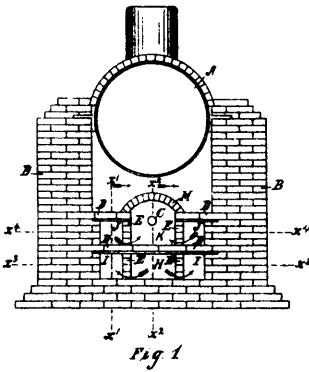
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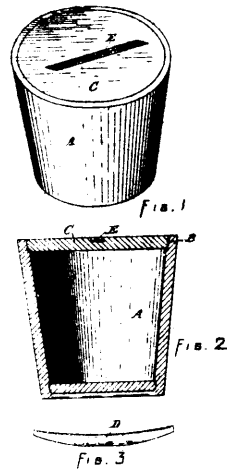
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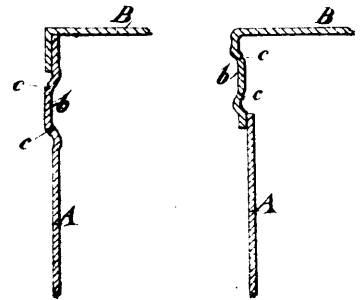
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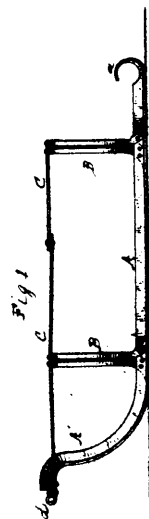
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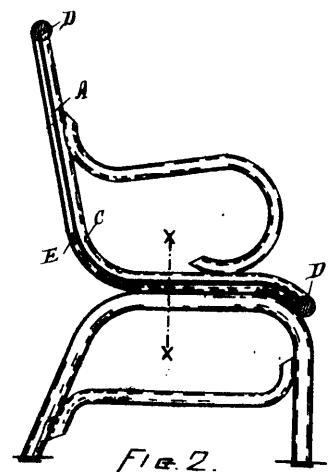
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