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INVENTIONS PATENTED.

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

No. 19,870. Manufacture of Boots and Shoes. (*Fabrication des Chaussures.*)

Thomas Laycock, Northampton, Eng., 1st August, 1884; 5 years.

Claim.—1st. The manufacture and use of a water-tight boot or shoe fastening at the side or otherwise, to fasten with eyelets, in the manner described, and the quarter of which overlap one another and are provided with a folding gore or tongue, substantially as hereinbefore described and represented in Figs. 1 to 4 of the accompanying drawing. 2nd. The manufacture and use of the modified arrangement of boot or shoe, hereinbefore described and represented in Figs. 5 to 8 of the accompanying drawing. 3rd. The method, herein described, of lasting boots and shoes by driving the tacks, tingles or the like in an oblique direction through the upper into the insole, or with tingles or tacks of a sufficient length to last the boot or shoe, but without coming through, substantially in the manner and for the purposes hereinbefore described and illustrated in Fig. 9 of the accompanying drawing. 4th. In a boot or shoe, I claim the employment of an insole formed of more than one thickness, and secured to the boot or shoe by the various methods herein described and illustrated by reference to Figs. 10 to 20 of the accompanying drawing. 5th. The method, herein described, of securing the middle sole or welt and upper to the insole or insoles of boots and shoes, substantially as described and represented in Figs. 10, 11 and 12 of the accompanying drawing. 6th. The method of securing the middle sole or welt and upper to the insole or insoles of boots and shoes, substantially in the manner and for the purposes hereinbefore described and represented in Figs. 13, 14 and 15 of the accompanying drawing. 7th. The method of manufacturing boots and shoes, substantially as and for the purposes hereinbefore described and represented in Fig. 16 of the accompanying drawing. 8th. The method of manufacturing boots and shoes, as hereinbefore described, by the employment of an insole of more than one thickness, and after lasting taking out the upper thickness and clinching the lasting tacks, tingles or the like, and then replacing the upper thickness (or substituting a similar one) of the insole, substantially in the manner and for the purposes hereinbefore described and represented in Figs. 17 and 18 of the accompanying drawing. 9th. The method of improving in the manufacture of boots and shoes, consisting in the cutting out, or removing a portion of the middle sole, and after the middle sole has been screwed, sewn, pegged or rivetted, taking out the lasting tacks or the like, and then replacing the part cut, substantially as hereinbefore described. 10th. In the manufacture of boots or shoes, the cutting away of the middle sole so as to leave a welt only, the cut-away part being filled in with felt or other suitable material, substantially in the manner and for the purposes hereinbefore described and represented in Figs. 19 and 20 of the accompanying drawing. 11th. The method, herein described, of fastening the heel or seat of a boot or shoe to the sole by means of screws, in the manner and for the purposes hereinbefore described.

No. 19,871. Tricycle and like Velocipedes.

(*Tri-cyclo et Velocipèdes semblables.*)

Edward R. Settle, Coventry, Eng., 1st August, 1884; 5 years.

Claim.—In tricycles or like velocipedes, having parallel or main driving wheels, the combination of a worm or worms carried by one wheel, with a worm-wheel carried by a driving-shaft to which the other wheel is fixed (or the alternative arrangement of worm or worms

carried by the driving-shaft, with a worm-wheel carried by the loose driving-wheel) so that both wheels shall run at the same speed when the velocipede is travelling straight (the said gear forming a lock), and, when travelling in a curve or circle, the said worm-gear allowing the loose wheel to run at different speed to the fixed wheel, substantially as described.

No. 19,872. Automatic Door Closer.

(*Fermeture Automatique de Porte.*)

William A. Holwell, Quebec, Que., 1st August, 1884; 5 years.

Claim.—1st. In a device for closing doors, &c., a suitably supported shaft for bar, in combination with a weighted travelling carrier, working on said shaft and connecting with the door, as set forth. 2nd. In a device for closing doors, &c., a suitably supported shaft or bar, in combination with a carrier travelling on said shaft and connecting with the door, and a weighted lever pivoted to the carrier, as set forth. 3rd. In a device for closing doors, a suitably supported shaft or bar, in combination with a carrier travelling on the shaft and connecting with the door, and a weighted lever pivoted to the carrier and provided with a roller adapted to enter a recess *m* in the shaft, as set forth. 4th. In a device for closing doors, a suitably supported shaft or bar provided with a bevelled or chamfered recess *m*, in combination with a carrier travelling in the shaft and provided with rollers *p*, a cord or chain connecting the carrier with the door, a lever pivoted to the carrier and provided at one end with a roller and an adjustable weight, as set forth. 5th. In a device for closing doors, the bar or shaft fitted at its upper end in a block *B* and provided with a bevelled or chamfered recess *m*, in combination with a carrier encompassing and travelling on the shaft, a cord connecting the carrier with the door, a lever pivoted to an extension of the carrier and provided at one end with a roller *A*, and an adjustable weight connected to the lever, as set forth. 6th. In a device for closing doors, a suitably supported shaft or bar, in combination with a carrier travelling on the same and connected with the door, a lever pivoted to the carrier, a sliding sleeve arranged to be adjusted on said lever by means of suitable binding screws, and a weight connected to the sleeve, as set forth.

No. 19,873. Hay Carrier. (*Monte-Foin.*)

Wentworth G. Ricker, Rochester, N. Y., U. S., 1st August, 1884; 5 years.

Claim.—1st. The combination, with the travelling carriage and rope of a hay-carrier, of the pulleys *C, C'* and the binding pulley *D*, substantially as and for the purposes set forth. 2nd. The combination, with the travelling carriage and rope of a hay-carrier, of the pulleys *C, C'*, and a movable clamping device located between the pulleys and connected to the rope, substantially as and for the purposes set forth. 3rd. The combination, with the travelling carriage and rope of a hay-carrier, of the pulleys *C, C'*, a movable clamping device located between the pulleys and connected with the rope and the adjusting lever *F*, substantially as and for the purposes set forth. 4th. The combination, with the travelling carriage and rope of a hay-carrier, of the pulley *C* provided with suitable ratchet-teeth, pulley *C'*, binding pulley *D* and dog *G*, substantially as and for the purposes set forth. 5th. The combination, with the travelling carriage and rope of a hay-carrier, of the pulleys *C, C'* provided with suitable ratchet teeth, intermediate clamping device *D* and dogs *G, G'*, substantially as and for the purposes set forth. 6th. The combination, with the travelling carriage of a hay-carrier, of the track-beam *A* and movable catch-pin *p*, substantially as described. 7th. The combination, with the draft-ropes *E* provided with ferrule *r* having shank *a* and button *c*, of the detachable hook *J* having recess *f* and slot *h*, substantially as and for the purposes set forth. 8th. The combination, with the draft-ropes *E*, of the detachable hook *J* provided with ring *c*, substantially as and for the purposes set forth. 9th. The combination, with the travelling carriage of a hay-carrier, of the pulleys *C, C'*, binding pulley *D* and draft-ropes *E*, each end of said draft-ropes being provided with devices for detachably connecting it with the binding pulley thereby adapting the carrier to travel in either direction, substantially as and for the purposes set forth. 10th. The combination, with the return or other ropes of a hay-carrier, of the removable track-hook *K* provided with ring *i*, substantially as and for the purposes set forth. 11th. The combination, with the tra-

velling carriage of a hay-carrier, of the track-beam A, catch-pin *g*, trip *n*, latch *r* and trip-rod N, substantially as and for the purposes set forth.

No. 19,874. Pump for Oil Wells.

(*Pompe pour Puits d'Huile.*)

James Hoskins, Petrolia, Ont., 1st August, 1884; 5 years.

Claim.—1st. The combination, with an oil well pump, of an exterior tube T forming a reservoir K, surrounding the pump cylinder or working barrel J, provided with perforations F, pipe piston rod O having perforations H and *c*, cup D, pipe piston G, tube H and plunger S for the collection of sediment scales, &c. as set forth. 2nd. The hemp packing D₁, in combination with the pipe piston K₁, jamnut E₁, piston G₁ and cylinder H₁, as described for the purpose set forth.

No. 19,875. Brush Block Boring Machine.

(*Machine à Percer les bois des Brosses.*)

John C. Hall, and Clemence A. Mahle, Corry, Penn., U. S., 1st August, 1884; 5 years.

Claim.—In a brush block boring machine, the combination of the driving-shaft, with the shaft which carries the carrier-plate, the carrier-plate shaft being passed through the driving-shaft to one side of its centre, substantially as described.

No. 19,876. Injector. (*Injecteur.*)

William T. Messenger, Cambridge, Mass., U. S., 1st August, 1884; 5 years.

Claim.—1st. In an injector, the three concentric nozzles, the first of which enters and closes the rear or base of the second, which enters the base or rear of the third, combined with a cylinder connected with the base of the third nozzle and inclosing the other two, the space between the said cylinder and second nozzle forming the inlet passage for the third nozzle and communicating with the first nozzle, whereby an inlet pipe connected with the said cylinder affords a common supply for the first and third nozzles, substantially as described. 2nd. The three nozzles and steam-inlet chamber communicating with the first and third, combined with the steam inlet controlling device consisting of a valve seating in the first nozzle, a piston operating in the said inlet chamber, and a stem connecting the said valve and piston, and provided with passages through which steam is admitted to the first nozzle as soon as the valve is unseated, substantially as described.

No. 19,877. Ash Shifter. (*Crible à centre.*)

Burton H. Cook, Brooklyn, N. Y., U. S., 1st August, 1884; 5 years.

Claim.—1st. In a sifter, of substantially the kind set forth, the movable slide *g* adapted to form a cover for the sifter box and a chute to discharge the cinders, substantially as herein shown and described. 2nd. The combination, with the sieve and its enclosing box having a discharge door on the side below the sieve and a slot at the opposite side, of the slide *g* adapted to enter the slot, extend across the box and project through and open the said door, substantially as and for the purpose set forth. 3rd. The combination, with the sieve and its enclosing box having the slot *o* and the door *r* with its inward projection *s*, of the slide *g* adapted to enter the slot of the box, project across the same and come in contact with the projection *s*, and thus open the said door and keep it open and thereby form a chute through which the cinders are discharged. 4th. The combination, with the sieve, of the enclosing box formed with the slot *o* on one side, and the door *r* on the opposite side, and inclined ways *o₁* extending across the box, with the movable chute slide *g* adapted to enter said slot, slide over the ways and project through said door-way, substantially as and for the purpose set forth. 5th. The combination, with the sieve and sieve box having slot *o* on one side and door *r* on the opposite side, with the inward projection *s* on said door, of the slide *g* having notched side or sides to engage the top of said projection, substantially as and for the purpose set forth. 6th. The combination, with the sieve and sieve box having two opposite sides higher than the sides at right angles thereto, with the lid *g* formed with the ledge or rim *o₁* adapted to fit over the box between the higher sides, in combination with a way across the box below the sieve and a discharge door at the foot of the same adapted to receive said lid, so as to form a discharge chute when the cinders are dumped, substantially as herein shown and described. 7th. The combination, with the sieve box, of the rotary sieve H with its movable section *q* having hooked hinge leaves on one side and a suitable catch at the opposite side, with the corresponding sockets *k₁* and *m₁*, substantially as herein set forth. 8th. The combination, with the sieve box and the rotary sieve, of the movable hinge section *q* and the barbed spring catch *l* on one side thereof, with the engaging socket plate *m* on the sieve, substantially as herein set forth. 9th. The combination, with the sieve and its movable lid section *q*, of hooked hinge leaves *h* affixed to the lid and socket plate *k* affixed over the mesh of the sieve and engaging one end of the lid with the sieve, and a suitable fastening holding the opposite edge of the lid, substantially as herein shown and described. 10th. The combination, with the sieve and its lid of the hinging leaves *h*, *h* formed with the hooks *h₁* and stops *h₂*, substantially as and for the purpose set forth. 11th. The combination, with the sieve and its lid, of the barbed spring loop *l* and the socket plate *m* fixed to the mesh of the sieve, arranged and operating substantially as and for the purpose set forth. 12th. The combination, with the sieve and sieve box having the slot *o*, and a discharge door on the side opposite said slot, of the movable chute slide *g* adapted to enter said slot, and open said door, with the sliding valve *t* adapted to fit over said slot against said slide, substantially as herein shown and described. 13th. The combination, with the sieve A, the slide *g* and the sieve box *b* having the slot *o* and door *r* and the ways *o₁* projecting beneath slot *o*, with the slide *t* covering said slot and resting on the ends of said ways, substantially as shown and described. 13th. In a sieve, the combination, with the heads *d*, *d* and meshed cylinder *c*, of the fastening brackets *n* secured

to heads and cylinder, substantially as shown and described. 15th. The combination with a cylindrical sieve, of the arched lid *g* formed with the underlying brace rods *j*, substantially as set forth. 16th. In combination, with a cylindrical wire cloth sieve having a movable lid section *g*, the hinging and binding plates *h*, *k* extending longitudinally over the ragged edges of the wire-cloth at the meeting edges of cylinder and lid, and fastened respectively to the respective edges thereof, substantially as herein shown and described. 17th. In combination, with a wire-cloth sieve and its lid section *g* provided with a suitable catch, of the catch or socket plate *m*, fixed on one side of the lid opening and extending longitudinally over the ragged edges of the wire cloth and bound therein, substantially as herein set forth.

No. 19,878. Pump for Oil Wells.

(*Pompe pour Puits d'Huile.*)

John Walker, Petrolia, Ont., 1st August, 1884; 5 years.

Claim.—1st. In combination, with an oil or other deep well pump, an exterior jacket forming a receiving chamber surrounding the working barrel, having openings into said chamber to collect sedimentary deposits, scales, &c., as set forth. 2nd. In combination with the strainer M, suction pipe G, valve P and working barrel O, the jacket J forming a receiver Q, as set forth for the purpose described. 3rd. In combination with the strainer M, suction pipe G having valve P, barrel O, and plunger P having valve P₁, the jacket K forming a receiving chamber R, as set forth for the purpose described. 4th. The combination, with the suction pipe G having valve P, barrel O having plunger F provided with valve P₁, of the jackets J, K forming receiving chambers Q, R, as set forth for the purpose described.

No. 19,879. Wrench. (*Clé à Ferou.*)

Benjamin F. Stockford, Sturgis, Mich., U. S., 1st August, 1884; 5 years.

Claim.—1st. As an improvement in wrenches, the combination of a shank having a fixed jaw and provided with teeth in one side, a sliding frame, a jaw pivoted in a recess in the face of and near the front end or nib of the latter and having a face plate bevelled on its under inner side, and teeth adapted to engage those in the face of the shank, and a spring arranged to force the sliding jaw outward toward the fixed jaw, substantially as described and for the purposes set forth. 2nd. The combination of the shank or handle having a fixed jaw and provided with teeth in one side, the sliding frame, a jaw pivoted in a recess in face of and near the front and nib of the latter, and having a face plate bevelled on its under inner side and teeth adapted to engage teeth in the side of the shank, a spring arranged to force the sliding jaw outward toward the fixed jaw, and a stop block to rest upon and prevent the disengagement of the heel of the pivoted jaw from the teeth in the side of the shank, substantially as described and for the purposes set forth.

No. 19,880. Burner and Lamp for Mineral Oils, &c. (*Bec et Lampe pour Huiles Minérales, etc.*)

Georg W. Lyth, Stockholm, Sweden, 1st August, 1884; 5 years.

Claim.—1st. In burners for mineral oils or their equivalents, a fine wire net inside the burner beneath the orifice or orifices for the issue of the vapourized oil, substantially as and for the purposes set forth. 2nd. In burners for mineral oils or their equivalents, a cap or cover surrounding the upper part of the burner, substantially as and for the purposes set forth. 3rd. The combination of two or more such burners, with the spreaders of the flame mounted in angles, and the whole surrounded by a cap or cover, substantially as described and for the purposes set forth.

No. 19,881. Waggon Jack (*Chèvre de Carrosserie.*)

Ephraim Fields, Truro, N. S., 1st August, 1884; 5 years.

Claim.—The combination of the standards A, the lifting lever B working on the iron pin, which can be put in either of the several holes in standards A, and the T-iron for holding jack in position when weighted, substantially as and for the purpose hereinbefore set forth.

No. 19,882. Rolling Mill and Roll Therefor. (*Laminoir et Rouleau de Laminoir.*)

Samuel R. Wilmot, Bridgeport, Ct., U. S., 1st August, 1884; 5 years.

Claim.—1st. The combination, with the upper working roller and its bearings, of mechanism for equally increasing or diminishing the pressure on both bearings, consisting of the adjusting wedge bar, shoes or blocks on which said screws bear, and the sliding wedge bar, and mechanism independent of said wedge bar for one bearing and roller, or simultaneously increasing the pressure on both bearings and relieving the pressure on the other bearing, substantially as described and for the purpose set forth. 2nd. The combination, with the upper working roller and its bearings, of the mechanism for equally increasing or diminishing the pressure on both bearings, consisting of the adjusting screws, the shoes or blocks on which they bear and the wedge bar, and a screw for moving said wedge bar longitudinally, the said wedge bar being channelled so as to receive said shoes. 3rd. The blocks and retain them laterally, substantially as described. 3rd. The combination, with the upper working roller, its bearings and adjusting screws, of a shaft mounted in fixed bearings, and mechanism for imparting motion from said shaft equally and simultaneously to both the screws for increasing the pressure on one bearing and relieving the pressure on the other bearing, substantially as described and for the purpose set forth. 4th. The combination, with the upper roller and its bearings, of the mechanism for rocking the roller consisting of adjusting screws having corresponding threads either right or left hand, and provided with worm wheels at their upper ends, and a worm or screw mounted in fixed bearings between and engaging with

said wheels to turn them and their screws in opposite directions, substantially as described. 5th. The combination, with the roller A and bearings *b*, of the screws *f* and worm wheels *G*, the sliding worm or screw *H* provided with the collar *g*, bearings *f*, *J*, and the removable block or abutment *h* fitting the worm or screw shaft between the bearing *f* and collar *g*, substantially as described. 6th. The feeder, herein described, consisting of a tapering throat and wedge fitting and movable therein, and provided with a stop, for the purpose set forth. 7th. The combination, with the lower working roller, of the stripper consisting of a piece or bar having a knife edge and connected with its supports by soft metal pins which will be sheared or cut off by undue strain on the stripper, substantially as described and for the purpose set forth. 8th. The combination, with the stripper *J* and soft metal pins *k*, of the supports *J* and steel bushings *j*, substantially as described. 9th. The rolling mill roller, herein described, and consisting of a roller face or sleeve of hard steel internally tapered and screw threaded, screwed upon a shaft corresponding by tapered and threaded, substantially as set forth. 10th. The rolling mill roller, herein described, consisting of a roller face or sleeve of hard steel, and a metal lining internally tapered and screw threaded and screwed upon a shaft correspondingly tapered and threaded substantially as set forth. 11th. The rolling mill roller, herein described, consisting of a shaft provided with a fixed collar and a collar screwed thereon, and a roller face or sleeve of hard steel secured between the collars and connected by pins or spurs with the fixed collar, substantially as set forth. 12th. The rolling mill roller, herein described, consisting of a shaft provided with collars the faces of which are bevelled inwards, and one of which is fixed on the shaft while the other is screwed thereon, and a roller face or sleeve of hard steel secured on the shaft between the collars and having its ends bevelled to fit the bevel of the collars, substantially as set forth.

No. 19,883. Fertilizer Distributer.

(Distributeur d'Engrais.)

Joseph S. Kemp, Magog, Que., 1st August, 1884; 5 years.

Claim.—1st. The combination, with a rotating drive axle of a fertilizer distributer provided with a spur-pinion and a movable bottom, and its actuating shaft having a worm gear secured to one end thereof, of a worm shaft provided with a worm to mesh with the worm gear and having a spur pinion capable of longitudinal adjustment on said shaft but prevented from revolving thereon, and the wheel *G* journaled to the body *A* and having teeth on its periphery to mesh with the spur-pinion on the drive axle and provided with two or more concentric series of cogs on one of its sides, substantially as and for the purpose set forth. 2nd. The combination, with the wheel *G* removably held on the stud *g* secured to the body *A*, of the squared worm shaft held to the stud *g* and provided with the pin, as shown, and the spur-pinion free to move longitudinally on said squared shaft and having the flange, substantially as described and for the purpose set forth. 3rd. The combination, with the rotating drive axle, of a fertilizer distributer provided with a pinion, and movable bottom, and its actuating shaft having a worm gear secured to one end thereof, of a squared worm shaft provided with a worm to mesh with the worm gear, a pin, as shown, and a spur-pinion free to move longitudinally on said squared shaft and having a collar or flange *g*, and the wheel *G* removably held on the stud *g* secured to the body *A* having teeth on its periphery to mesh with the spur-pinion on the drive axle and provided with two or more concentric series of cogs on one of its sides, substantially as shown and described and for the purpose set forth. 4th. The combination, with the movable bottom and its actuating shaft provided with a worm gear wheel, of the worm shaft adapted to be moved on its stud in a vertical plane, and provided with the worm and slotted sleeve, the slotted sector and the bell-crank lever connected to the sleeve and having a bar extending to the forward part of the body, as shown and described and for the purpose set forth. 5th. The shaft *H* having the crank-arm, the slotted bar provided with the coiled spring, the bell-crank lever, the movable worm shaft provided with the sleeve, the bottom actuating shaft provided with the worm gear wheel and the movable bottom, in combination, for the purpose set forth. 6th. The stop wheel, the shaft *M* provided with the crank arm, the connecting rod *Y* and lever *g* having the projection *z*, in combination substantially as shown and described and for the purpose set forth.

No. 19,884. Circular Saw Mill.

(Scierie à Sries Circulaires.)

Charles Esplin, Minneapolis, Minn., U. S., 1st August, 1884; 5 years.

Claim.—1st. In a circular saw mill, the combination of the laterally adjustable husk frame *A* supporting the saw or saws *B*₁, *H*₂, stationary bed plates *a*₁, *a*₂ on which the said husk frame is supported and by which it is held in position, and means for laterally adjusting the said frame upon the said bed plates, substantially as and for the purpose herein specified. 2nd. The combination of the laterally adjustable husk frame *A* having the mandrel *B*₁, saw *B*₂, lumber supporting rollers *C*₁, *C*₂, *C*₃ and wedge plate *D* mounted thereon, stationary bed plates *a*₁, *a*₂ on which the said husk frame is supported and by which it is held in position and means for laterally adjusting the said frame upon the said bed plates, substantially as and for the purpose herein specified. 3rd. The combination of the laterally movable husk frame *A* having the mandrel *B*₁, saw *B*₂, lumber supporting roller *C*₁, *C*₂, *C*₃, wedge plate *D* and upper saw supporting frame *E*₁, *E*₂, *E*₃ mounted thereon, stationary bed plates *a*₁, *a*₂ on which the said husk frame is supported and by which it is held in position, adjusting screws *F*₁, *F*₂, nuts *a*₇, *a*₈ and sockets *a*₉, *a*₁₀, substantially as and for the purpose herein specified. 4th. In a circular saw mill, the combination of the husk frame *A* carrying the lower saw *B*₂, the upper saw supporting frame *E*₁, *E*₂, *E*₃ mounted on the husk frame fixed bed plates *a*₁, *a*₂ and frame adjusting screws *F*₁, *F*₂, substantially as herein specified. 5th. In a circular saw mill, the combination of the husk frame *A*, carrying the mandrel *B*₁, saw *B*₂ and driving pulley *B*₃ and the upper saw supporting frame *E*₁, *E*₂, *E*₃ attached to the said husk frame located entirely at one side of the said mandrel *B*₁, substantially as and for the purpose herein specified. 6th. In a circular saw mill, the combination of the husk frame *A*

carrying the lower mandrel *B*₁, saw *B*₂ and saw driving pulley *B*₃, the upper saw supporting frame *E*₁, *E*₂, *E*₃, the yoke frame *H*₃ carrying the upper saw mandrel *H*₁ and adapted to swing laterally and vertically around the centre of one mandrel bearing, and means, substantially as described, for adjusting it at the other mandrel bearing both horizontally and vertically, for the purpose herein specified. 7th. In a circular saw mill, the husk frame *A* carrying the lower saw, upper saw frame having concave face *e*₁, yoke frame *H*₃ carrying the upper saw mandrel and saw and having convex face *e*₂, and means for adjusting said yoke frame, substantially as shown. 8th. The combination of the frame *E*₁, *E*₂, *E*₃ having concave face *e*₁, yoke frame *H*₃ carrying the upper saw mandrel *H*₁ and having convex face *e*₂, journal box *H*₆, bracket *H*₈ and means for adjusting said yoke and mandrel, substantially as specified. 9th. The combination of the frame *E*₁, *E*₂, *E*₃ having the concave face *e*₁, yoke frame *H*₃ having convex face *e*₂, guide arm *H*₄, guide *H*₅, mandrel *H*₁, saw *H*₂, journal box *H*₆, bracket *H*₈ and means for adjusting said yoke frame, substantially as described. 10th. The combination of the frame *E*₁, *E*₂, *E*₃ having the concave face *e*₁, yoke frame *H*₃ having convex face *e*₂ and carrying the mandrel *H*₁ and saw *H*₂, journal box *H*₆, bracket *H*₈ and screws *K*₁, *K*₂, substantially as and for the purpose specified.

No. 19,885. Green Corn Cutter.

(Hache Blé-d'Inde Vert.)

Solomon D. Warfield, Baltimore, Ind., U. S., 1st August, 1884; 5 years.

Claim.—1st. In a green corn cutter head consisting of a plate with a central opening for the passage of the ear, a series of interlocking knives with holders and suitable supports susceptible of a radial movement in a constant plane, springs to effect the radial sliding movement of the knives and holders toward the center of the said plate, and to give a yielding pressure to the said knives against the ear during the cutting operation, and gaging devices against which the ear impinges to effect the outward movement of the knives and their attachments, combined with a center rod and yielding centering devices, substantially as specified. 2nd. In a green corn cutter, a knife support and knife adapted to have a radial movement in a constant plane, and a scraper fastened to the said knife holder or some attachment thereof adapted to have a similar movement, and to exert a yielding pressure on the cob independently of that produced by the spring which effects the movement of the said knife and its connections, combined with a center rod and yielding centering device, substantially as specified. 3rd. In a green corn cutter, the combination of a cutting head provided with clamping devices to hold the cob after the cutting operation, and secondary clamping devices in which the cob is forced and held until displaced by another cob, substantially as specified. 4th. In a green corn cutter, the combination of a center rod prongs adapted to slide on the said rod, devices to yieldingly sustain the end of the prongs beyond the center point and a flexible covering for the said center rod to prevent the contact of the removed grain therewith, substantially as specified. 5th. In the cutting head of a green corn cutter, hollow faced gaging rollers which serve to initiate the radial movement of the cutting knives which are connected therewith, provided with deflecting pieces to guide the entering ear to the practically circular space between the said rollers, substantially as specified. 6th. As means for gaging the depth of cut of the knife of a green corn cutter, a hollow faced roller connected to the said knife or to some attachment thereof, substantially as specified. 7th. In a green corn cutter, a fixed central supporting rod for the ear, combined with a head having a retractable device to remove the cob from its support, substantially as specified. 8th. In a green corn cutter, reciprocating cutting head with knives to surround the ear, combined with mechanism to effect the reciprocating motion of the said head longitudinally of the ear in the cutting operation, substantially as specified. 9th. In a green corn cutter, a vertically reciprocating head carrying cutting and scraping devices adapted to slide on bars, a head plate to connect the said bars at their upper end, sheaves supported by the said head plate, ropes or chains extending from the cutting head over the said sheaves and provided at their other end with counterbalancing weights, and means for effecting the reciprocating movement of the said cutting head and its attachments, substantially as specified. 10th. In a green corn cutter, a vertically reciprocating head carrying cutting and scraping devices adapted to slide on bars, a head plate to connect the said bars at their upper end, sheaves supported by the said head plate, ropes or chains extending from the cutting head over the said sheaves and provided at their other end with counterbalancing weights which slide on the said bars, and means for effecting the reciprocating movement of the said cutting head and its attachments, substantially as specified.

No. 19,886. Improvements in Cutlery.

(Perfectionnements dans la Coutellerie.)

Joseph Rogers and Sons, (assignees of Charles Wingfield,) Sheffield, Eng., 1st August, 1884; 5 years.

Claim.—The combination, with a knife blade or analogous article provided with a flat tang, of externally roughened bolster pieces adapted to fit close to the sides of the tang and against the heel of the knife blade or analogous article, and a handle made of plastic material molded or otherwise formed around the tang and bolster pieces, substantially as specified.

No. 19,887. Shingle Machine.

(Machine à Barileau.)

Thaddeus Hodgson, Amherst, N. S., 2nd August 1884; 5 years.

Claim.—1st. The carriage *L*, with its lower part secured to the pivot bolt *x*, and with its upper part swinging towards and from the saw and steadied by the segmental guide plate *B*. 2nd. The weight *O*, the weight lever *N*, and the connecting rod or link *K*, each by itself. 3rd. The combination of the weight *O*, the weight lever *N*, the rod *K* and the sett roll frame *A* for the purpose of bringing a sufficient pressure of the upper sett roll upon the shingle block to hold it securely. 4th. The combination of the foot lever *R*, the weight lever *N* and the

rod K, with the sett roll frame A for the purpose of quickly and conveniently raising the upper sett roll to remove the remnant of an old block and put in a new one. 5th. The combination of the carriage L, the pivot pin x, the guide plate B, the sett roll frame A, the weight O, the weight lever N, the rod K and the foot lever R, substantially as and for the purpose hereinbefore set forth.

No. 19,888. Brick Machine.) *Machine à Briquer.*

John B. Foster, Zurich, Ont., 2nd August, 1884; 5 years.

Claim.—1st. A tile forming attachment, in combination with a brick making machine, consisting of driving bar or rod J, crank K, shaft L, cogged disks M, tooth racks N and block P, acting in conjunction with the other parts of machine, and operated thereby for the purpose of pushing the clay into the tile moulds and expelling the same as tiles, substantially as shown and specified. 2nd. The box R having a longitudinal opening or slid *a* on top, for the purpose of receiving the clay to be expelled as tiles, substantially as shown and specified.

No. 19,889. Hitching Strap.

(Courroie d'Enrénore.)

Samuel Birdsall, Susquehanna, Penn., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a hitching strap, the combination, with the tie strap E and the brace strap I, of a headed bolt and a nut for clamping the said brace strap to the tie strap, substantially as set forth. 2nd. In a hitching strap, the combination, with the tie strap E and the brace strap I, of the bolt F having shoulder F₁ and the nut and washer G, H, substantially as herein shown and described, whereby the said brace strap will be firmly connected with the tie strap and can be readily swung to either side, as set forth.

No. 19,890. Compound for Preventing the Formation of Clinkers in Coal.

(Composition pour empêcher la formation du Mûche-Fer dans le Charbon.)

Wesley Case, Topeka, Ks., U. S., 2nd August, 1884; 5 years.

Claim.—The compound for preventing clinkers, herein described, consisting of bi-carbonate ammonia, saltpeper, bi-carbonate soda, rosin, Epsom salts, common salt and a base for preventing the mass from cementing together, all in or about the proportions described.

No. 19,891. Shoe. *(Soulier.)*

Samuel C. Crowe, Boston, Mass., U. S., 2nd August, 1884; 5 years.

Claim.—A gaiter or congress shoe having its "upper" composed of a single piece A, and with but a single seam located at the inner side of the shoe above the shank, substantially as and for the purpose described. A front laced shoe having its "upper" composed of a single piece A, and with but a single seam located at the toe, substantially as and for the purpose set forth.

No. 19,892. Post Hole Digger.

(Sonde pour Trou de Pieu.)

William H. Rhodes, Chicago, Ill., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a post-hole digger, the combination, with the handles A, A₁, of the head-pieces B, B₁ provided with the upward projecting ends *a*, *a*₁ and the stop-lugs *p*, *p*₁, whereby said handles are locked when closed together or adapted to cross each other, as described. 2nd. In a post-hole digger the combination of the following elements: The digging-blades C, C₁ having the lower halves thereof cut away at an oblique angle, the head pieces B, B₁ adapted to have a pivotal movement, the projecting ends *a*, *a*₁, the stop-lugs *p*, *p*₁, and the handles A, A₁ provided with the hand-grasps *a*, *a*₁, all combined, arranged and operating substantially as described. 3rd. In a post-hole digger, the curved companion-blades C, C₁ having the lower parts thereof cut away inwardly from both edges, gradually narrowing these parts down to a rounded point for the purpose of adapting the same to shut close together, forming a cone-shaped receptacle tightly closed at the lower end, substantially as and for the purpose set forth.

No. 19,893. Friction Clutch.

(Embrayage à Friction.)

Helen C. Crowell, Erie, Penn., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a friction clutch for the gearing of machinery, the combination substantially as shown, of the following elements: a concentric clutch flange upon one part of the machinery, which is provided with friction surfaces on the inner and outer sides thereof, and a head or frame on the correlative part of said machinery having adjusted upon it a gripping device with both its jaws made movable, and adapted, substantially as shown, to grip the said clutch flange on its said friction surfaces by the movement of both of said jaws. 2nd. In a friction clutch for gearing of machinery, the combination, substantially as shown, of the following elements: a concentric clutch ring upon one of the parts of the machinery which is provided with a flange having friction surfaces upon opposite sides thereof, a cross-head or frame upon the correlative part of said machinery adjusted adjacent to said clutch ring, a vise like gripping apparatus having both its jaws made movable, one of which is within and the other without said clutch-ring, and, finally, a system of levers for operating said jaws which are arranged on said cross-head or frame, outside of said clutch-ring. 3rd. In a friction clutch wherein the clutching is effected, substantially as shown, the combination of the frame B, with arms having recesses or inlets B₁, jaws C, C₁ pivoted on each side of said arms and setting within said recesses, and the levers D and E and the bolt D₁ for operating said jaws, all substantially as and for the purposes set forth. 4th. In a friction clutch, substantially as shown, the combination of the frame B, jaws C, C₁, bolt D₁, levers D

and E and the springs S, S₁, substantially as shown. 5th. In a friction clutch, substantially as shown, the combination of the jaw C₁, belt D₁, levers D and E and a spring adjusted between said levers D and E, substantially as and for the purposes set forth. 6th. In a friction clutch, substantially as shown, the combination of the levers D and E and the spring G, adjusted within the trunioned socket G and having means, substantially as shown, for adjusting the same between said levers D and E, for the purposes mentioned. 7th. In a friction clutch, substantially as shown, the combination, with the lever E, of a roller *e* adjusted within the socket E₁ and secured by the wire *h*, substantially as and for the purposes mentioned.

No. 19,894. Machine for Making the Teeth of Horse Rakes. *(Machine pour Fabriquer les Dents des Râteaux à Cheval.)*

Napoléon Hainault, Montréal, Qué., 2 Aout, 1884; 5 ans.

Résumé.—1o. Dans une machine à fabriquer, les dents de râteaux à cheval, la forme A, les pinces A₆ et A₇, les leviers C₁, C₂, la projection Q, en combinaison avec le marteau J et le système à contre-poids Q, Q₁, Q₂ et la poulie O P, tel que ci-dessus décrit et pour les fins susmentionnées. 2o. Dans une machine à fabriquer, les dents de râteaux à cheval, la forme A, en combinaison avec le tambour K l l₁ a m n S x et z, les systèmes de leviers *a*₃, *a*₄, *a*₅, *a*₆, *a*₇, *a*₈, *a*₉ et N, O, P, Q, R et la poulie à friction T T₁ T₂, tel que montré et ci-dessus décrite et pour les fins susmentionnées. 3o. Dans une machine à fabriquer les dents de râteaux à cheval, la forme A, en combinaison avec l'essieu B et le bâti M, tel que ci-dessus décrit et pour les fins susmentionnées.

No. 19,895. Manufacture of Bows and Scarfs. *(Fabrication des Boucles et Echarpes.)*

William H. Williamson, Toronto, Ont., 2nd August, 1884; 5 years.

Claim.—In a scarf or bow provided with a neck-band B B₁ of silk cord or tape, or other suitable material, a snap-hook C with eye C₁ and the wire guard D, the whole constructed and arranged and operating in combination, substantially as shown and described and for the purposes set forth.

No. 19,896. Shutter Operating and Locking Device. *(Appareil Ouvrant et Fermant les Persiennes.)*

Henrp J. Hussicker and George Boop, Laurelton, Penn., U. S., 2nd August, 1884; 5 years.

Claim.—1st. The combination, with the outside shutter provided with a slot in its bottom surface, of the lever which has a pin to engage with said slot, and which is arranged substantially as set forth, to be operated from the inside of the window. 2nd. The combination of the outside shutter having a slot in its bottom surface, the sill extending a rabbet or chamber on its inner surface and an aperture extending to the inside of the window, the bent lever having a pin which engages with said slot in the shutter, arm *b* which lies beneath the shutter when it is open, the arm *a* which lies close to the casing when the shutter is open and the arm *c* upon the inside of the window, substantially as set forth. 3rd. The combination of the lower stationary shutter, the bearing supporting plate O below the sill, the outside shutter, the bent lever loosely connected with the shutter, and the pivot or shaft *L* rigidly connected to said lever and having one end mounted in the sill and the other end in the lower supporting plate O, substantially as set forth. 4th. The combination of the shutter provided with a slot in its bottom surface and with the outside facing-piece *b*, and the lever provided with a pin to engage with said slot and mounted substantially as set forth, to have the arm *b* lie entirely within the facing piece and be protected thereby, substantially as set forth. 5th. The combination of the chamber N on the inside below the sill, the outside shutters, the levers which engage with the shutters, the devices mounted in said chambers on the inside for operating the levers, and the door which closes said chamber and conceals the lever-operating devices, substantially as set forth. 6th. In combination, with the slats F, mechanism, substantially such as herein described, for opening and closing the slats from the inside without necessitating the raising of the sash, as described. 7th. In combination, with the slats and the connecting bar G, a lever pivoted to the blind and connected at one end with the bar G, a sliding rocking bar *I* mounted in the casing and adapted to engage with the free end of said lever and move it to operate the slats, when it (bar *I*) is forced outwardly, and a spring engaging with the bar *I* to force it out of engagement with the lever, substantially as set forth. 8th. In combination, with the slats F and the connecting bar G, a lever H pivoted to the blind and connected at one end with bar G, and provided at its opposite end with a slot *h*, a bar or shaft *I* mounted in the casing and carrying an eccentrically arranged pin *i* adapted to engage with the slot *h*, substantially as set forth. 9th. In combination, with the blinds, mechanism, substantially such as herein set forth, adapted to lock said blinds and to be operated from the inside without necessitating the raising of the sash, as set forth. 10th. The combination, with the shutters, of a hasp carried by one of the shutters, a sliding bolt carried by the other shutter, a sliding rack engaging with the sliding bolt to operate it, and means for moving said sliding bolts out of engagement with the rack after it has been withdrawn from the hasp, substantially as set forth. 11th. The combination, with the shutters, of a hasp carried by one of the shutters, a sliding bolt carried by the other shutter, a sliding rack engaging with the bolt to operate it, a shaft projecting from the inside through the casing, and a wheel mounted upon said shaft and engaging with the said rack, to operate it, substantially as set forth. 12th. The combination, with the shutters, of a hasp carried by one of the shutters, a sliding bolt *k* carried by the other shutter having the bevelled edge *k*, a support *l* for the bolt, a spring bearing upon the upper side of the bolt, a sliding rack engaging with the bolt and means for moving said rack, substantially as set forth. 13th. In combination, with the slats and the bar G, the herein-described connection between the two, consisting of the wire R which passes through the bar and through apertures in the slats, as described.

No. 19,897. Seal Lock. (*Serrure Scellée.*)

Robert O. Walker and William O. Dobbins, Chicago, Ill., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a seal-lock, a lock-bolt formed in several interchangeable parts, each of which is provided with a projection or cam, in combination with a small spring-actuated plunger adapted by the backward motion of the bolt to be thrown out and puncture a suitable seal placed over its end, substantially as described and shown. 2nd. In a seal lock, a cap or cover formed with a depression or groove for receiving the seal, a sliding spring actuated guard for protecting and holding the seal in position, and a seal punch connected to a spring actuated lever having at its other end a locking pin for securing said guard, in combination with a lock-bolt having an incline on its rear end adapted to engage with and actuate the punch, substantially as and for the purposes set forth. 3rd. In a seal lock, a plate provided with a groove for the reception of the seal and a spring actuated lever provided with a punch, in combination with a sliding spring actuated plate or guard for protecting the seal, and a pin for locking the same in position, having a slotted connection with the lever, whereby the pin is not moved to release the guard till the seal has been punched, substantially as and for the purpose set forth. 4th. The seal case C, groove c, lever E and punch E', in combination with the guard F having arms f, projections or lugs f' acted upon by the springs J and the inclined groove e and hole e' and the pin or bolt e' connected to said lever by a slotted connection, substantially as and for the purpose set forth. 5th. In a seal-lock, the bolt made in several interchangeable parts d, d', d'' having a cam or incline a, in combination with the seal punch E', lever E, slotted pin e' and seal guard F, substantially as and for the purpose set forth.

No. 19,898. Scroll Sawing Machine Attachment. (*Disposition aux Machines à Scier les Volutes.*)

Henry L. Hopkins, William J. Mallory, John Kelly and Mellzar M. Mallory, Caro, Mich., U. S., 2nd August, 1884; 5 years.

Claim.—1st. The combination, with a scroll-sawing machine, of a parallel-wayed frame, a pair of ways therefor to be secured to the sawing machine in a vertical plane nearly at right angles to the plane of the saw, and a saw-table pivoted in said parallel frame, substantially as and for the purpose specified. 2nd. The combination, with a parallel-wayed frame and a pair of ways therefor, of a shaft journalled in said frame, and a saw-table secured to said shaft, as and for the purpose specified. 3rd. The combination with a parallel-wayed frame, a pair of ways therefor and a shaft journalled therein, of a pair of arms secured in the said shaft at right angles to each other and one above the other, and a table secured upon the said arms, substantially as and for the purpose specified. 4th. The combination, with a parallel-wayed frame, a pair of ways therefor and a shaft journalled therein, of a pair of arms placed transversely in the said shaft, means for adjusting and fixing the said arms in the shaft, and a saw-table secured to the said arms, as shown and described. 5th. The combination, with a parallel-wayed frame, a pair of ways therefor and a shaft journalled therein, of a pair of arms placed transversely in the said shaft, means for adjusting one of said arms longitudinally to the shaft, and a table secured to the arms, substantially as and for the purpose specified. 6th. The combination, with a parallel-wayed frame, a pair of ways therefor, a shaft journalled therein, and a pair of arms adjustably fixed at right angles to each other, and one above the other in the said shaft, of a table fixed inclined on the said arms, and a roller for the said table to ride upon, as and for the purpose specified. 7th. The combination, with a transversely adjustable frame, a shaft journalled therein, arms adjustably in said shaft, a saw-table fixed to said arms, a roller for the said table to ride on, and a sawing-machine, of a spool on the said shaft, a cord fixed thereto, a weight attached on the said cord guiding pulleys therefor, and means for winding the said cord on the sawing-machine, substantially as shown and described.

No. 19,899. Improvement in the Construction of Shears or Clips. (*Perfectionnement dans la Fabrication des Forces ou Sécateurs.*)

Achille Fréchet, Ottawa, Ont. (assignee of William C. Howells, Westhampton, Va., U. S.), 2nd August, 1884; 5 years.

Claim.—1st. In a fruit or flower-gathering device, the combination of a pair of handles, each provided with a cutting edge, and a holding clamp or flange having or not a soft yielding inner surface, as shown and described and for the purpose set forth. 2nd. The combination of handles A, jaws or blades D, D, cutting edges E, E, holding clamps or flanges F, F and cushioned surfaces H, H, as described and for the purpose set forth.

No. 19,900. Furnace Blower.(*Soufflerie de Fourneau.*)

Philip Richards, Plymouth, and George Shaller, Wilkesbarre, Penn., U. S., 2nd August, 1884; 5 years.

Claim.—The improved furnace-blower or blast apparatus, herein shown and described, consisting of the cones A and B, partitions C, whereby the chambers or compartments D are formed, and conical chest E provided with the steam-pipe G, and nozzles H projecting with their upper ends into the compartments D, substantially as and for the purpose set forth.

No. 19,901. Seed Planter. (*Semoir.*)

John R. Newton, Carthage, Ill., U. S., 2nd August, 1884; 5 years.

Claim.—1st. The combination of a furrow opener, a seed bed roller, a seed dropper and a cover roller, arranged in series. 2nd. The combination of a rolling cutter furrow opener, a seed dropper and a cover roller, arranged in series, as set forth. 3rd. The combination of a seed

bed roller provided with a face having a large portion approximately flat, a seed dropper and a cover roller, arranged in series. 4th. The combination of a furrow opener, a seed bed roller, a seed dropper, a coverer and a cover roller, arranged in series. 5th. A seed planter provided with a number of series of furrow openers, seed bed rollers, seed coverers and cover rollers, each series arranged for separate self adjusting vertical motion while held true to place laterally. 6th. A grain planter having carrying wheels, and provided with gangs of several frames bearing floating rollers, arranged in series of two, one before the other, so that both rollers are capable of rising or falling together, and to produce rolled beds above and below the seed. 7th. A grain planter having a gang of several frames held at each end from lateral motion, and bearing floating rollers arranged to run upon the covered rows while held from lateral movement provided with bevelled sides to produce rolled ridges between the rows. 8th. A grain planter having a gang of several frames held at each end from lateral motion, and bearing separately floating rollers arranged to run one on each row, and provided with bevelled sides to produce rolled ridges between the rows. 9th. A grain planter having a gang of several separate frames bearing floating rollers with bevelled sides located before the seed droppers, and arranged to form approximately level seed beds with rolled inclined side.

No. 19,902. Pipe Casing for Submarine Rock Drilling. (*Tube-Chemise pour Forage du Roc Sousmarin.*)

Charles A. Sterling, New York, N. Y., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In combination with a rock drill for submarine drilling, the herein described pipe casing, in combination with an ejector branch H K, pipes L, N and movable pipe J, said pipes N and J, being connected to suitable force pumps or their equivalent, the whole being arranged to operate in the manner and for the purpose substantially as specified. 2nd. The combination, substantially as hereinbefore set forth, of a rock drill, tubular inclosing case, and independent tube extending longitudinally within said inclosing case, whereby the fluid under pressure is discharged upon the debris in the neighborhood of the bit of said drill. 3rd. The combination, substantially as hereinbefore set forth, of a rock drill, a tubular inclosing case, an independent tube extending longitudinally within said inclosing case and terminating in proximity to the bit of said drill for discharging a stream of fluid under pressure upon the debris surrounding said bit, and a discharge opening formed in the side of said inclosing case. 4th. The combination, substantially as hereinbefore set forth, of a rock drill, a cylindrical inclosing case, and an ejector consisting of a pipe extending from the upper extremity of said inclosing case and terminating within a discharge tube leading from the lower portion of said case. 5th. The combination, substantially as hereinbefore set forth, of a rock drill and inclosing case consisting of two or more telescoping cylindrical sections surrounding the upper portion of said drill, a tubular extension of less diameter surrounding the lower portion of said drill, an intervening conically tapering section, and a discharge opening or tube branching from said tapering section.

No. 19,903. Sliding Gate. (*Barrière Trainante.*)

John S. McCluskey, Graham, Mo., U. S., 2nd August, 1884; 5 years.

Claim.—1st. The combination in a gate, of a gate section hinged to one side of the roadway, and a wicket section sliding in and guided by said hinged sections, substantially as set forth. 2nd. The combination of the hinging post A, the main frame having double uprights hinged to stand to one side of said post, the sliding wicket W having its horizontal bars between the two parts of the uprights, the rollers supporting the bottom bars of the wicket, the sill post having the shoulder and bevelled portion and located in the centre of the gateway to support the end of the main frame, its bevelled portion extending and facing in the direction in which the gate is swung, and the shutting post B provided with devices for engaging the wicket, substantially as described.

No. 19,904. Water Cooled Valve for Gas Manufacture. (*Soupage Raf-aichie pour la fabrication du Gaz.*)

John Hanlon, New York, U. S., 2nd August, 1884; 5 years.

Claim.—1st. In combination with a conduit, a water cooled valve having a partition provided with an opening or passage, and the inlet and outlet pipes for the cooling fluid, connected as described, for securing a better circulation of the cooling fluid. 2nd. The hollow valve having a pendant partition b provided with a passage near or at its bottom, in combination with the inlet and outlet water pipes connecting on each side of such partition and passing through stuffing boxes in the casing, whereby they may be moved up and down with the valve. 3rd. The hollow valve having a partition provided with an opening, in combination with the inlet pipe passing through a stuffing box in the valve casing and connecting with a flexible supply pipe, and the outlet pipe passing through a stuffing box in the casing and discharging on the outside of such casing, whereby a complete and uniform circulation of water through the valve is secured. 4th. The hollow sliding valve, in combination with its casing, an inlet water pipe passing through a stuffing box in the casing and connecting with a flexible supply pipe, and an outlet water pipe passing through a stuffing box in the casing and discharging outside thereof, as and for the purpose described. 5th. A hollow sliding valve and its casing, in combination with the inlet pipe connected with a flexible supply pipe, an outlet pipe discharging outside of the casing, all constructed and arranged as described. 6th. In combination with a pipe and valve, a dust chamber opening in proximity to the valve, for receiving deposits of soot and ashes, and thereby preventing clogging of valve and its seat, as described. 7th. The combination, in a water cooled valve and casing, of a valve containing a chamber, a water delivery pipe connected therewith through which the water is directly forced from without in the operation of the valve, a delivery pipe connecting with said

chamber and delivering into the water chamber surrounding the valve casing, and an escape pipe connected with said water chamber, whereby a continued forced circulation is maintained through the valve and the cooling chamber surrounding the casing, substantially as described. 8th. The combination, in a water cooled valve, of a circulating chamber within said valve and inflow and outflow pipes connected with said chamber and passing through stuffing boxes in the valve casing, thereby cooling the valve and said inflow and outflow pipes by the forced circulation of water therethrough, substantially as described.

No. 19,905. Scuffle Hoe. (*Hoe.*)

Henry Still, Beloit, Ks., U. S., 2nd August, 1884; 5 years.

Claim.—As a new article of manufacture, a hoe combining a blade having a crescent outline bevelled from its upper surface outwardly to its lower surface, producing the cutting edges *a*, *a*₁, *a*₂, and a bent handle secured centrally thereto, whereby the three edged penetrating and cutting points *a*₂, *a*₃ and unobstructed curved front and rear cutting edges are provided, substantially as shown and described.

No. 19,906. Skate. (*Patin.*)

Thomas H. Dean, Easton, Mass., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a roller skate, the combination of the following instrumentalities, to wit: a body or foot-piece, means for attaching the body or foot-piece to the foot of the wearer, two downwardly projecting brackets at or near either end of the body or foot-piece, a guard or carriage journalled in either pair of said brackets, a pair of trucks or rollers journalled in either of said guards and an elastic cushion or spring, the guards being adapted to cover all parts of the rollers except their lower or bearing edges and to rock laterally in the brackets, the rollers journalled at right angles to the axial line of the guard, and the spring interposed between the guard and body of the skate and adapted to keep the body in a horizontal position, substantially as described. 2nd. In a roller skate, a roller or truck having its body composed of annular plates of leather, and its sides of corresponding plates of green hide, substantially as set forth. 3rd. In a roller skate, a roller or truck provided with a pocket or pockets adapted to contain cotton waste or some other suitable absorbent for the oil, and a duct leading from said pocket to the axle of the roller, substantially as described. 4th. In a roller skate, the brackets *D*, *E* provided with the covered sockets *m* for receiving the studs or journals of the carriage *H*, substantially as set forth. 5th. In a roller skate, the guard *H* provided with the studs *x*, in combination with the rollers *J*, axle *K*, brackets *D*, *E* and spring *r*, substantially as described. 6th. In a roller skate, the guard *H* provided with the square hole *g*, in combination with the axle *K* having the squared portion *n* and the rollers *J*, substantially as set forth. 7th. The improved roller skate, herein described, the same consisting of the body or foot piece *A* provided with the straps *B*, *C*, the brackets *D*, *E* provided with the sockets *m*, the guard *H* provided with studs *x*, partition *z* and holes for receiving the axle *K* provided with the nuts *t*, the spring *r* provided with the screw *L*, and the rollers *J* composed of leather and green hide and provided with the pockets *M*, and ducts *h*, constructed, combined and arranged to operate substantially as described.

No. 19,907. Hand Embroidering Machine.

(*Machine à la main pour Broder.*)

Cyrus W. Field, Wanseon, Ohio, U. S., 2nd August, 1884; 5 years.

Claim.—1st. A hand embroidery machine, consisting of the bars *A*, *A*₁ provided with hands *B*, *B*₁ and sliding reciprocally in clips *C*, *C*₁, one secured to each bar, the bar *A* provided with a needle *D* and rings *5*, *6*, and the bar *B* provided with a bar *E*, spring *F* and set screw *10*, as set forth. 2nd. The combination, with the bar *A* having needle *D*, of the bar *A*₁ having bar *E*, spring *F* and set screw *10*, as set forth for the purpose described.

No. 19,908. Steam Generator.

(*Générateur de Vapeur.*)

Robert Venator and John Weller, Buffalo, N. Y., U. S., 2nd August, 1884; 5 years.

Claim.—A steam generator consisting of the inner and outer shells *a*, *a*₁ having the annular water and steam space *a*₂, in combination with the sets of coils *a*₃, *a*₄, each set consisting of two or more coils connected to the steam and water space, substantially as specified, a spherical shell connected to the inner shell *a*₁ and a suitable combustion chamber and heating device, substantially as described.

No. 19,909. Door Catch.

(*Fermeture de Porte.*)

John J. Lamb, Waterloo, Iowa, U. S., 2nd August, 1884; 5 years.

Claim.—In a catch for doors, and in combination with the casting *C* provided with an elongated slot and a shoulder *d* at the base of said slot, the pivoted dog *E* having a straight face *e*₁ adapted to lie flush with the casting *C*, and provided with an inclined face *e*₂ which abuts against the shoulder *d*, and an enlarged head *e*₃, all arranged to operate substantially as and for the purpose herein set forth.

No. 19,910. Car Seal. (*Fermeture Scellée de Wagon.*)

Thomas H. Malone, Milwaukee, and George A. Whiting, Neenah, Wis., U. S., 2nd August, 1884; 5 years.

Claim.—1st. A seal formed of a sheet metal band having its ends doubled together and secured by transverse tongues upset from the sides thereof and having identifying symbols, numbers, or letters impressed upon the metal, substantially as described. 2nd. A seal formed of a sheet metal band having its ends doubled together and secured by tongues upset thereon, said tongues being provided with grooves or depressions therein, substantially as described.

No. 19,911. Method of Attaching Seals to Cars. (*Mode d'Appliquer les Fermetures Scellées aux Wagons.*)

Thomas H. Malone, Milwaukee, and George A. Whiting, Neenah, Wis., U. S., 2nd August, 1884; 5 years.

Claim.—1st. The method of attaching seals to cars, &c., substantially as herein described, consisting in laying the ends of the seal-band together, cutting or punching the tongues from the edges of the doubled band, bending them in upon the body of the band and upsetting them, as described. 2nd. The method of attaching seals to cars, &c., substantially as herein described, consisting in laying the ends of the seal-band together, cutting or punching the tongues from the edges of the double band, bending them in upon the body of the band and upsetting them by means of a narrow edged ribbed instrument, so as to form a groove or depression in, and longitudinally of the tongues, substantially as described.

No. 19,912. Button. (*Bouton*)

George W. Prentice, Providence, R. I., U. S., 2nd August, 1884; 5 years.

Claim.—1st. A solid button or button-head, composed of two or more layers of plastic material, formed as described, and provided with eye-holes, staples or other suitable means for attachment, substantially as set forth. 2nd. The herein-described button, or button-head *A*, consisting of the layers *b* and *d* and fastenings *a*₁, with a metallic eye or fastening, the whole arranged substantially as shown and described.

No. 19,913. Machine for Painting Wire Fences. (*Machine pour Peinturer les Clôtures Métalliques.*)

William E. Brown and Henry J. Durgin, Irving, Ks., 2nd August, 1884; 5 years.

Claim.—1st. A machine for painting wire fences, consisting of a supporting frame, a tubular paint reservoir having a nozzle at its lower end, a rotary brush arranged on an axis at right angles to the reservoir, and a drip pan suspended beneath the brush, substantially as described. 2nd. The combination, with the rotary brush and its shaft and bearing block, of the supporting rod *A* and reservoir *B*, the said rod being jointed, as described, to the bearing of the rotary brushes, as and for the purposes described. 3rd. The brush composed of two discs *C*, *C*, having bristles on the side projecting toward each other, in combination with the drip pan, paint reservoir and supporting pan, as shown and described. 4th. The combination of the frame *A*, reservoir *B*, rotary brush *C* and drip pan, and the two crank handles and pulleys with connecting band, for rotating the brushes for high or low wires without stooping, as set forth.

No. 19,914. Taper Sleeve Fastening for Machine Pulleys and other Wheels and Shaft Couplings. (*Ajustage de Manchon taillé Cône pour Poulies de Machines et autres Roues, et pour Accouplement des Arbres.*)

Helen C. Crowell, Erie, Penn., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a taper sleeve fastening for attaching pulleys, &c., upon shafting, the ribs *d* arranged with relation to the sleeve *D*, and the cavity *C*₁, substantially as and for the purposes mentioned. 2nd. In a taper sleeve fastening for attaching pulleys, &c., upon shafting, the ribs *d* and grooves *C* arranged with relation to themselves, and the sleeve *D* and cavity *C*₁, substantially as and for the purposes mentioned. 3rd. In a taper sleeve fastening for attaching pulleys, &c., upon shafting, the combination, substantially as shown, of the hub *A* with external screw thread *a* and internal groove *C*, the sleeve *D* with ribs *d*, and the cap-nut *B* engaging with said screw-thread *a* and enclosing the end of said sleeve.

No. 19,915. Car Axle Box. (*Boîte à Graisse.*)

William A. Hardy, Fitchburg, Mass., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a journal bearing, the box and casing, having a central bearing piece and side bearing pieces all of lining material, the central piece being of softer material than the side pieces, substantially as described. 2nd. In a journal bearing, the box or casing having a central bearing piece and side pieces of lining material, the said central bearing piece having its bearing surface raised or projecting beyond that of the side pieces and constituting the sole bearing, when the box is first applied to the journal, substantially as described.

No. 19,916. Machine for Tamping or Ramming Moulds for Castings. (*Machine pour Refouler les Mouldes de Fonterie.*)

Matthew R. Moore, Indianapolis, Ind., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In combination with the flask *A* and mould board *B*, the platen *G* having flexible diaphragm *G*₁, means, as *G*₂, *G*₃, *G*₄, *G*₅, for supplying fluid to said diaphragm, and means, as *g*₁, for carrying off such fluid, as herein specified. 2nd. The combination, with the platen *G* having flexible diaphragm containing fluid, of the shaft *H*, crank *F* having flexible diaphragm containing fluid, as set forth. 3rd. In a machine for making moulds for castings, the combination, with a flask *A* and support or bed *E*, of a platen *G*, hooks or locking means *F*, flexible diaphragm *G*₁ and provisions, as *G*₂, *G*₃, *G*₄, *G*₅, *g*₁, and connected means for applying fluid pressure between the diaphragm and the piston, as herein specified. 4th. The method in placing the pattern in a casting sand moulds for castings, consisting in placing the pattern in a proper flask, filling the flask with properly-tempered sand, applying

on the upper surface thereof a flexible diaphragm and subjecting it to a uniform pressure of fluid, so as to depress the upper surface to variable extents according to the depth of sand at different points, as herein specified.

No. 19,917. Washing Machine. (*Machine à Laver.*)

Melvin Wood, Sparta, Ont., 2nd August, 1884; 5 years.

Claim.—The combination of the wheel D, with revolving rollers E, in conjunction with the semi-circle of revolving rollers F, controlled by spiral spring C, substantially as and for the purpose hereinbefore set forth.

No. 19,918. Machine for Putting out the Grain and Removing the Water or other Imperfections from Calf, Sheep, Goat and other Skins. (*Machine pour Assurer le Grain et Enlever les Imperfections des Peaux de Veaux, Moutons, Chèvres et autres, et les Essorer.*)

William M. Hoffman, Buffalo, N.Y., U.S., 2nd August, 1884; 5 years.

Claim.—1st. In a putting-out machine, a putting out cylinder and its operating mechanism, substantially as described, in combination with the rollers *c*, *c*₃, arms *c*₅ mounted in a spring box and having the rollers *c*₃ adjustably connected thereto, and a suitable footstep for operating the arms, substantially as specified. 2nd. The rollers *c*₁, *c*₃, the roller *c*₃ being connected to the arm *c*₅, in combination with the spring-box *d* and foot-step, and its operating connections for the purpose of holding the skin between the rollers *c*₁, *c*₃, or holding it between them and forcing it against the putting-out cylinder or releasing it, substantially as described.

No. 19,919. Window or Insect Screen.

(*Ecran de Fenêtre ou Moustiquaire*)

Morris Roberts and Shimer & Company, Philadelphia, Pa., U.S., 2nd August, 1884; 5 years.

Claim.—1st. An insect screen, consisting of frames, each having top and bottom horizontal pieces, a grooved stile and additional horizontal pieces which are secured to the frame on the face opposite to said top and bottom pieces, substantially as and for the purpose set forth. 2nd. An insect window screen composed of a compound frame, which is formed of two sliding frames having grooved stiles *d*, and pairs of strips or pieces *e* connected with stiles *d*, and the side or end stiles *c*, the strips or pieces *e* of each pair being opposite to each other and on opposite sides of the grooved stile, substantially as and for the purpose set forth.

No. 19,920. Machine for Dusting Bran.

(*Machine pour Nettoyer le Son.*)

Levi S. Hogeboom and Frank B. Smith, Three Rivers, Mich., U.S., 2nd August, 1884; 5 years.

Claim.—1st. The combination of the annular interior shelves *P* and the wire-cloth case, said shelves having their upper surfaces formed with the rectangular studs *t* arranged to leave intervening channels *v* and bevelled or sloping margins *z*, of the discharging openings *o*, substantially as specified. 2nd. The combination, with the studded annular shelves *P*, of the revolving radial whippers *b* arranged above and out of contact with said studded shelves, substantially as specified. 3rd. The combination, with the series of studded shelves *P* and the intermediate whippers *b* out of contact therewith, of the sloping distributing plate *a* above the series of shelves, and the plane running plate *W* having the peripheral feeding notches or openings *d* below said series of shelves, substantially as specified. 4th. The combination, with the inner wire cloth case and its annular studded shelves, of the series of radial whippers, the running plate *W*, the brushes *Y* and the obliquely-turned fan blades *Z*, substantially as specified. 5th. The combination, with the inner removable bran case, of the lower supporting spider plate *H*, the adjustable centering plate *K*, the removable top plate *I* and the adjustable centering ring *N*, and connecting bolts and washers, substantially as specified. 6th. The combination, with the inner case, of the jarring devices consisting of band *p* around the same, the spring knocker *q* and the lateral shaft provided with the projections *z*, substantially as specified. 7th. The combination of the revolving tube *D*, a vertical supporting shaft *m* and the receiving hopper, said tube being arranged under the spout of the hopper, substantially as specified.

No. 19,921. Creamer. (*Boîte à Lait.*)

George Sturgeon, Kincairdine, Ont., 2nd August, 1884; 5 years.

Claim.—1st. The combination of a can A, provided with hollow base, gauge glass and handles, and having an indented or dished bottom sloping towards the outward point near the front, and connected to a faucet D, a cylindrical cover E of a larger diameter than the can and having a conical top E, terminating upwards in a point and provided with brackets *e*, substantially as shown and described and for the purpose set forth.

No. 19,922. Machine for Unloading Hay.

(*Machine à Décharger le Foin.*)

Alexander Newell, Dunbarton, N.B., 2nd August, 1884; 5 years.

Claim.—1st. The combination, in a hay unloading machine, of the truck C and bule D, carrying the block G and travelling on an inclined beam, substantially as shown and for the purpose specified. 2nd. The retainer H, in connection with the block and hoisting chain, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, in a hay unloading machine, with chains, ropes and bars by which the load is enclosed, of the coupler, Fig. 5, having a latch *f* passing through a link in the opposite bar, and retained in its locked position by a keeper *h*, said latch being easily disengaged,

and the device uncoupled by pulling a cord attached to the lower end of the said keeper, all substantially as described and for the purpose specified.

No. 19,923. Hay Rack Elevator. (*Monte-Foin.*)

James P. Pegg, North Pelham, Ont., 2nd August, 1884; 5 years.

Claim.—1st. In a rack elevator, the adjustable pulleys *g*, *g*₁, *g*₁₁, *g*₁₂, ho ks or staples *c*, *c*₁, poles *f*, *f*₁, ropes *e*, *e*₁, in combination with shaft C, ratchet wheel and dog *a* *d* and large pulley *b*, all arranged and operating substantially as specified. 2nd. In combination, with the ratchet wheel *a*, dog *d*, large pulley *b* and shaft C, the rope *h* and adjustable pulley *i*, arranged and operating as specified.

No. 19,924. Washing Machine.

(*Machine à Laver.*)

Charles W. Dennis, Toronto, Ont., 2nd August, 1884; 5 years.

Claim.—A wash-boiler fountain having a hollow base A, with the passage-ways B, C and D arranged in it, as specified, and a chamber E from which the fountain F extends, in combination with an air vessel G placed near the entrance of the passage-way B, and an air vessel H placed at or near the end of the inner chamber E, substantially as and for the purpose specified.

No. 19,925. Brick Machine. (*Machine à Brique.*)

Henry Martin, Lancaster, Penn., U.S., 2nd August, 1884; 5 years.

Claim.—1st. The combination of the lever arm L having the wheel or pulley *p*, the lever E, the shaft S having the pinions *c*₂, the supports *a*, *a*, the gate A, having the racks *r*, *r*, and the lever *t* having the weight *w*₁, constructed and operated substantially as set forth. 2nd. The combination of the lever D, the friction wheel B and the friction band A, the end *m* of which has a screw thread out in it, and is thereby attached to the end of the lever D by the nut V, in the manner and for the purpose specified. 3rd. The combination of the lever D, with the arm G having the bracket *f*, the rods *n*, *n*₁, *n*₂, the cranks H, H₁, and the plate *g* hinged to the plate *g*₁, substantially as set forth.

No. 19,926. Attachment for Attaching a Buggy Top to the Seat. (*Appareil pour Assujétir une Couverture de Voiture*)

Charles Champion and John Metcalfe, Brantford, Ont., 2nd August, 1884; 5 years.

Claim.—1st. A rail B, provided with projections C and D, arranged to fit into holes made in the seat irons E and F, in combination with the wedge G, substantially as and for the purpose specified. 2nd. A rail B provided with hook projections C and D, to fit into holes in the seat irons E and F, in combination with the lever H pivoted to the rail B, and having projecting from it a wedge G arranged to fit into a hole in the seat iron F, substantially as and for the purpose specified.

No. 19,927. Rotary Engine. (*Machine Rotatoire.*)

Dennis McColgan, Butte, Montana, U.S., 2nd August, 1884; 5 years.

Claim.—1st. In a rotary engine, the combination, with a wheel having a semi-circular groove in its rim, of a fixed casing surrounding the wheel and provided with a semi-circular groove in its inner surface, which casing and wheel together form an annular steam cylinder, pistons projecting from the rim of the wheel and fitting against the groove in the casing, one or more sliding abutments held in steam chests formed in the casing, and valves for regulating the admission of steam into the cylinders, substantially as herein shown and described. 2nd. In a rotary engine, the combination, with the cams *k* and *k*₁ on the shaft A, of the levers K, K and the rods *d* connected with the said levers, and with the sliding valves in the steam chest, substantially as herein shown and described. 3rd. In a rotary engine, the combination, with the cams on the shaft, of levers adapted to be acted upon by the said cams, abutments sliding toward and from the shaft in suitable steam chests, and rods for connecting the said abutments with the above mentioned levers, substantially as herein shown and described. 4th. In a rotary engine, the combination, with a shaft, of a sliding sleeve provided at its opposite ends with two different sets of cams, levers adapted to be acted upon by either set of cams and rods connecting the said levers with sliding abutments in the steam chest, substantially as herein shown and described. 5th. In a rotary engine, the combination, with a revolving wheel having pistons, of sliding abutments held in steam chests at the side of the wheel, two different sets of cams on the shaft of the wheel, which cams act on levers connected with the sliding abutments, and of devices for shifting the cam sleeve so that either set of cams will act on the sleeve, whereby the movements of the cams can be reversed as the engine is to be reversed, substantially as herein shown and described. 6th. In a rotary engine, the combination, with a shaft carrying a wheel provided with pistons, a sliding sleeve mounted on the shaft and provided at its ends with different cams, levers acted upon by the cams, abutments connected with the said levers and sliding in suitable steam chests, valves for admitting the steam above or below the abutments, and means for automatically adjusting the said valves at the same time that the cams on the shaft are adjusted, substantially as herein shown and described. 7th. In a rotary engine, the combination, with the wheel C mounted on the shaft A, of the sliding sleeve N mounted on the shaft and provided with different sets of cams at its ends, the levers M connected with sliding abutments G, the steam chest D₂ having channels *e* and the channels *f*, *f*, the piston H sliding in the channel *e*, the shaft I, arms for operating the piston H from the shaft I, and means for operating the shaft I at the same time that the sleeve N is shifted, substantially as herein shown and described. 8th. In a rotary engine, the combination, with the shaft, of the sleeve L carrying the cams *k*, *k*₁ and provided in its inner surface with a semi-circular groove L₁, and the stud L₂ projecting from the said shaft

into the groove J, substantially as herein shown and described. 9th. In a rotary engine, the combination, with the steam chests having the channels *e*, and the channels *f, g* leading to the steam cylinder, of the piston H, the piston rod I, the piston or valve *h* in the chamber *h* which is connected by the channel *l* with the chamber *e*, and which chamber *h* is also connected by a channel with the chamber *d* into which the steam is admitted, and of a lever for raising the valve *h*, substantially as herein shown and described. 10th. In a rotary engine, the combination, with the wheel C having the semi-circular groove C₁ in its rim, of the casing D, the sliding abutment G provided with a disk G₄ surrounded by a packing ring G₅ and having lugs G₆ forming shoulders fitting against the flanges on the rim of the wheel, substantially as herein shown and described. 11th. In a rotary engine, the combination, with the wheel C carrying pistons, of the casing D and the steam chests I₂ formed on the same, substantially as herein shown and described. 12th. In a rotary engine, the combination, with a wheel C, of the casing D having a segmental groove D₁ in its inner surface, a groove Q formed at each side of the groove D₁, packing strips R in the grooves Q and of screw S, substantially as herein shown and described. 13th. In a rotary engine, the combination, with the grooved wheel C, of the casing D, the pistons E fixed in the wheel, the sliding abutments G, sliding valves and cams for operating the valves and cams, substantially as herein shown and described. 14th. In a rotary engine, the combination, with the grooved wheel C and the casing D, of the pistons E held detachably on the said wheel, substantially as herein shown and described. 15th. In a rotary engine, the combination, with the pistons E consisting of blocks having semi-circular ends, and of packing strips held in to said blocks, substantially as herein shown and described. 16th. In a rotary engine, the combination, with a shaft, of cams on the same levers adapted to be acted upon by the cams, sliding valves and sliding abutments connected with the said levers, and of springs acting on the said levers, substantially as herein shown and described.

No. 19,928. Horse Rake. (*Râteau à Cheval*.)

Thomas H. Ramsden, Brantford, Ont., 2nd August, 1884; 5 years.

Claim.—1st In a horse rake, the employment of gathering teeth individually suspended from the machine, and sloping forward and serving to collect the hay or the like which is subsequently discharged from the rear of the machine, substantially as hereinbefore described and represented in the accompanying drawing. 2nd. In a horse rake, the employment of a delivery trough, constructed in two parts, and arranged to open by one of the said parts being partially rotated on pivots, in the manner shown and described, so as to discharge the hay or the like on to the ground, substantially as hereinbefore described and represented in figures 1 and 2 of the accompanying drawing. 3rd. In a horse rake, the combination of delivering teeth individually suspended with clearing rods, such as *u*, between which the delivering teeth fall when discharging the hay or the like, as and for the purpose hereinbefore described and represented in figure 3 of the accompanying drawing. 4th. In a horse rake, the bearing bar *r* sleeved in loose rollers and fixed by arms to the fulcrum bar of a hand lever, in combination with delivering teeth formed with cam shaped portions on which the said bearing bar and rollers operate to raise the teeth, as hereinbefore described and represented in figure 3 of the accompanying drawing. 5th. In a horse rake, the bars *r, r* and *u*, arranged as hereinbefore described and shown for the purpose of raising the delivering teeth *t* by depressing the lever handle *q*, substantially as shown in figure 3, and set forth. 6th. In a horse rake, the employment of a platform and elevating belts operating between the gathering teeth and the delivering trough or delivering teeth, as and for the purpose hereinbefore described and represented in the accompanying drawing. 7th. Forming the gathering teeth and delivering teeth of horse rakes of the shape of a portion of a hollow ellipse in cross section, as hereinbefore described and represented in figure 4 of the accompanying drawing. 8th. The general arrangement and construction of the improved horse rakes, hereinbefore described and represented in the accompanying drawing.

No. 19,929. Check Lines for Horse Bridles.

(*Faisceaux-rônes de Harnais*.)

George A. Mace, Exeter, Ont., 2nd August, 1884; 5 years.

Claim.—1st. The union of the driving rein and the check line used in horse harness, so as to form one continuous line, substantially as shown and described. 2nd. In a horse bridle, the lifting straps D, connected with the bit rings, extending over the horses, head and carrying the hanging pulleys C, as shown and specified. 3rd. The bit pulleys E attached to the bridle bits and having the driving rein passed around them, and connected with some fixed portion of the harness, as specified. 4th. The combination of the driving rein F and check line B, formed in one continuous piece or connection, and having the enlargement or stop *c*, with the hanging pulleys C, lifting straps D, and bit pulleys E, substantially as shown and described as and for the purpose set forth.

No. 19,930. Paint, Whitewash and other Brushes. (*Pinceaux pour la Peinture, le Blanchissage et autres.*)

James A. Read, Arlington, N. J., U. S., 2nd August, 1884; 5 years.

Claim.—1st. The art or process of making brushes consisting in preparing bristles in their layers, dipping the same into a solution of rubber cement, or its equivalent, in winding the same so prepared on to the brush handles, and subjecting the whole to pressure, substantially as set forth. 2nd. A brush having its bristles secured to the handle by means of rubber or its equivalent, wound around the base of the handle, substantially as set forth. 3rd. A brush having its bristles secured by means of dipping into a rubber cement, or its equivalent, and wound around the base of the handle, the several layers of bristles being tightly compressed, substantially as set forth. 4th. In a brush, the combination, with the handle having a thin tapered base, thereby drawing the points of the bristles closer together, being wound around the same, substantially as set forth. 5th. In a brush, the combination, with the bristles, of an outwardly projecting

flange formed of several layers of thin rubber, tightly wound around the bolts of the bristles, substantially as set forth. 6th. A brush having its bristles secured in place by means of rubber or its equivalent, substantially as set forth.

No. 19,931. Washing Machine.

(*Machine à Laver*.)

John W. Jacobs, Hamilton, Ont., 2nd August, 1884; 5 years.

Claim.—In a washing machine, the combination of the box *a*, gear wheels B and C, arms D, grooved rollers E and G, smooth rollers F and F, the adjustable bearing piece H₁, the guide piece H and the spring I, substantially as and for the purpose hereinbefore set forth.

No. 19,932. Nautical Signal. (*Signal Nautique*.)

Merritt White, North Adams, Mass., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In nautical signals, the combination of a revolving platform, coloured lights upon the same, and a shield stationary relatively to said platform and lights, substantially as and for the purpose described. 2nd. In nautical signals, the combination of a revolving platform, coloured lights upon same, cams attached to the same, and a steam whistle having connection with said cams, substantially as and for the purpose described. 3rd. In nautical signals, the combination of a revolving platform, coloured lights upon the same, cams attached to the same, a steam whistle having connection with said cams, and a spring detent handle for revolving and holding said platform in the desired position, all arranged and operating substantially as described.

No. 19,933. Machine for Perforating Sheet Metal. (*Machine pour Percer la Tôle*.)

John W. Hyatt, Newark, N. J., U. S., 2nd August, 1884; 5 years.

Claim.—The rollers F, G, the former supplied with the alternating groove *e* and elevations *d*, and the latter with the grooves *r, i*, alternating with the projections *m*, substantially as set forth.

No. 19,934. Combined Fire Escape and Hook and Ladder. (*Sauveteur d'Incendie et Echelle et Crochet Combinés*.)

George M. Kim, Allegheny, Penn., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a fire apparatus, the extension ladder M and box K, operated by the screw L in the slides *m, m*, substantially as shown and described. 2nd. In a fire apparatus, the ladder D D on the rear of the tower B B, attached to said tower in the manner shown and for the purpose set forth. 3rd. In a fire apparatus, the screws H, H and L, and the ladder and additional extension ladder M operated thereby, in combination with bevel cog wheel mounted on shaft turning on bearings on the carriage, and gearing with bevel wheels on said screws, substantially as set forth. 4th. The tower B B railed at top, as shown, and slotted platform thereto pivoted on the shaft *f*, as described and for the purpose specified. 5th. The screw head J on the screw H, pivoted on the shaft F₃, arranged and operating as described. 6th. The half bed A A, arranged to be drawn back on the carriage when required, as shown and for the purpose specified. 7th. The adjustable housing G G, pivoted to the shaft *f*₃ and supporting the screw shaft H and heads J, as shown and for the purpose specified.

No. 19,935. Air Mediator and Injector.

(*Injecteur d'Air Médical*.)

Bradford McGregor Covington, Ky., U. S., 2nd August, 1884; 5 years.

Claim.—1st. In a device for medicating and applying air, the combination, with the bottle having a reservoir in its lower end, and the tubes D, E, connected with such bottle, substantially in the manner described, and provided with bulbs D E, of the base provided in its upper side with a socket fitted to receive said reservoir, and the frame or arch mounted on said base and provided with supports adapted to hold said bulbs, substantially as set forth. 2nd. The combination of bulb E having a bulb nozzle E₁, provided with a suitable discharge opening, and the supply frame provided with means for holding the bulb nozzle and having a spring cap, arranged to bear on the bulb nozzle and close the discharge opening thereof, substantially as set forth.

No. 19,936. Hay or Grain Rack Lifter.

(*Monte-Charge pour Foin et Grain*.)

Alexander Williamson, Holland Centre, Ont., 2nd August, 1884; 5 years.

Claim.—1st. In a hay or grain rack lifter, the lifting wheel A composed of a series of spokes Q, shaped substantially as described, and wedged around the squared portion of the shaft B, and having their outer ends bound together by the rim or fellow, made as described, in combination with hub-pieces E having squared holes to fit over the shaft B, and arranged to bind the spokes together, substantially as and for the purpose specified. 2nd. In a hay or grain rack lifter, a resilient spring D arranged to press against the side of the wheel A, substantially as and for the purpose specified. 3rd. In a hay or grain rack lifter, a resilient spring D, arranged to press against the side of the wheel A, in combination with the rope S arranged to operate the resilient spring, substantially as and for the purpose specified. 4th. In a hay or grain rack lifter, a resilient spring D arranged to press against the side of the wheel A, the rope S attached to the resilient spring and carried over the pulleys K, in combination with the pin R, having a series of slats U, radiating from the centre of a square hole and projecting beyond the periphery of the wheel to form cog, in combination with the covering plates V, arranged to bind the slats U in position, substantially as and for the purpose specified.

No. 19,937. Railway Snow Plough.*(Chasse-Neige de Chemin de Fer.)*

William S. Buist, Bolton, Ont., 2nd August, 1884; 5 years.

Claim.—1st. In a railway snow plough, the depressed portion or trough *b* formed in the lower and forward portion of the plough, substantially as described. 2nd. In a railway snow plough, the cutting edges *b, b*, formed on the sides of the lower and front portion of the plough, substantially as described. 3rd. In a railway snow plough having the parallel sides *a, a*, the combination of the forward centrally depressed portion or trough *b*, with the upper portion divided by the central dividing edge *d*, substantially as shown and for the purpose set forth.

No. 19,938. Fire Place. *(Foyer de Cheminée.)*

Charles L. Page, Chicago, Ill., U. S., 2nd August, 1884; 5 years.

Claim.—1st. The combination of a descending flue *H* entering the bottom of a fire place, and an ash dump or trap located in the upper end of the said flue, substantially as and for the purpose specified. 2nd. The combination, with a fireplace having an ash dump or trap in its bottom, of a flue *E*, opening into the lower part of the fireplace, and passing upward back of the fireplace wall, and entering the chimney flue, substantially as and for the purposes specified. 3rd. The combination, with a portable metallic fireplace or fireplace lining, of the box *F* and the inclined slide *d*, substantially as and for the purposes set forth. 4th. The combination, with a portable metallic fireplace lining, of an ash dump or trap *F* consisting of the flanged box *c*, having thereon the inclined ways *e, e*, and the lugs *G, G*, and of the slide *d* having thereon the studs *G, G*, substantially as and for the purposes set forth. 5th. The combination, with a fireplace, of an opening *b* and a dust flue *E*, substantially as and for the purposes specified. 6th. The combination of a fireplace dump or trap with a portable metallic fireplace or fireplace lining, having at, or near its bottom the opening *b*, and having thereon the flanges *D, D*, substantially as and for the purposes specified.

No. 19,939. Car Brake. *(Frein de Char.)*

William Gill, Toronto, Ont., 2nd August, 1884; 5 years.

Claim.—1st. A brake worker *W* constructed with three pulleys, the middle pulley pivoted in the slotted arms of a compound bell crank, and obtaining a lateral movement inwardly thereby, the other pulleys stationary and pivoted in brackets, securely fastened to the bed plate *A*, and so located as to act as fulcrums to the main chain *k*, in its drawing inwardly the middle pulley, the lower arms of the bell crank being pressed apart from the inwardly lateral movement of the middle pulley, and rods attached to the lower arms of the bell crank to operate the brakes, as set forth. 2nd. A brake worker, *W* composed chiefly of the following parts: the middle moveable pulley *K* pivoted in the slotted arms *a* and *b* of a compound bell crank, having the necessary journal boxes *f, g, h, i*, in which the axles *d, e* of the bell crank turn two stationary pulleys *l, l*, pivoted in brackets *m, m*, and secured to the bed plate *A*, two lower arms *a* and *b* of the bell crank secured on the lower part of the axles, and to which arms two rods *c* and *e* are attached, which operate the cross levers *p, p* and the levers *q, q*, attached to, and operate the brakes, a spring *s* attached to the arms *a* and *b*, brings these arms back after operating the brakes to their normal position, substantially as shown and described. 3rd. A brake worker *W*, constructed as described, and a steam motor *Z* with the connections to the steam boiler composed chiefly of the following parts: a rotating cylinder *E* with propeller *F*, stationary axle *A*, disk *B*, hub *c*, piston *E* in which stationary parts steam passages are formed and convey steam from the boiler to the propeller *F*, and operate the cylinder in either direction, as required, which by means of the chain *K*, operates the brakes, the whole arranged and operating in combination, substantially as specified and shown.

No. 19,940. Automatic Measure for Liquids.*(Mesureur Automatique pour Liquides.)*

Jean Prax, Montreal, Que., 2nd August, 1884; 5 years.

Résumé.—Dans un mesureur automatique des liquides, le robinet *I*, (composé des parties *a, b, c, d, e, f, g, h, k, m, L*, et la mesure *H*, en combinaison avec la prise d'air *J, F, E* et le récipient *A, B, C, D, G*, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 19,941. Door Spring. *(Ressort de Porte.)*

Philip McAleer and Elisha H. Bradford, Washington, D.C., U.S., 2nd August, 1884; 5 years.

Claim.—1st. The bed-plate *A* having lug *a, n*, in combination with the pitman *I*, spring *E*, quadrant *F*, chain *K* and arm *N*, as set forth. 2nd. The bed-plate *A* having lugs *a* and *n*, in combination with the pitman having bifurcated or forked ends, and spring *E* and the chain *K*, and arm *N* having cam portion *L*, as set forth. 3rd. The bed-plate *A* having lugs *a* and *n*, in combination with the pitman having adjustable nut *D*, and spring *E*, and the chain *K*, and arm *N* having cam portion *L*, as set forth.

No. 19,942. Lubricator. *(Graisseur.)*

The McNab & Harlin Manufacturing Company, New York, N. Y., (assignee of William A. Boyden, Jersey, N.J.) U. S., 4th August, 1884; 5 years.

Claim.—1st. The oil cup *A* combined with the central hollow supporting stem *B*, internal upright steam-pipe *b*, lower oil discharge opening *d*, valve *F*, downwardly extending drip pipe *f* and sight tube *g*, said sight tube being below the cup *A* and parallel with the tubular stem *B*, but at a distance therefrom, substantially as herein shown and described. 2nd. The oil-cup *A* combined with the central hollow supporting stem *B*, internal upright steam-pipe *b*, lower oil discharge opening *d*, valve *F*, downwardly extending drip pipe *f*, sight tube *g* and outwardly extending oil discharge pipe *H* having valve *I*, substantially as herein shown and described. 3rd. The globe *J* having valve *D*, in combination with the detachable stem *B*, cup *A*, drip-

pipe *G*, oil discharge pipe *K* and valve *I*, substantially as herein shown and described.

No. 19,943. Black Leaf Check Book.*(Agenda à Feuille Noire.)*

Thomas G. Cooper, Jarvis, and Samuel J. Moore, Toronto, Ont., 4th August, 1884; 5 years.

Claim.—1st. The leaves *A, B* and *C*, connected together and having one of their ends fastened to the book, in combination with the black leaves *F* and *G* fastened to the book, at right angles to the fastening of the leaves, substantially as and for the purpose specified. 2nd. The leaves *A, B* and *C*, connected together and having one of their ends fastened to the book, in combination with the black leaves *F* and *G* fastened to the book, at right angles to the fastening of the leaves, and the sheet-metal plate *D* flexibly connected to the book, on the same or opposite side to the fastening of the black leaves *F* and *G*. 3rd. In a black leaf check book arranged to produce simultaneously several copies of a written memorandum, the leaves *A, B* and *C*, connected to, and folded in the book, as described, in combination with a metal plate *D* flexibly connected to the book, at right angles to the connection of the leaves. 4th. In combination with a black leaf check book, a metal plate *D* flexibly hinged to the cover, substantially as and for the purpose specified. 4th. A memorandum book composed of a series of leaves, having one end of the series bound into the book, the whole being folded together, substantially as and for the purpose specified.

No. 19,944. Frame for Bed Bottom.*(Châssis de Sommier de Lit.)*

Dallas Knowlton, Brantford, Ont., 4th August, 1884; 5 years.

Claim.—In a bed-bottom frame, the braces *D* and *E*, substantially as and for the purposes hereinbefore set forth.

No. 19,945. Tubular Lantern.*(Lanterne Tubulaire.)*

John H. Stone, Hamilton, Ont., 4th August, 1884; 5 years.

Claim.—1st. In a sliding tubular lantern, a locking device consisting of the combination of the fastening hook *c*, wire *I* and tube sections *B, C*, substantially as and for the purpose specified. 2nd. In a sliding tubular lantern, the bent wire *I* fastened to, and in combination with the upper tube sections *C, C*, as a brace for the upper tube sections *C, C*, and support for the disk *H*, and catch for the fastening hook *c*, and lock for the burner, substantially as specified. 3rd. In a sliding tubular lantern, the combination of the slide plates *f, f*, secured to the lower section tubes *B, B*, and the hollow plates *e, e*, secured to the upper section tubes *C, C*, for the former to slide in, by which the upper part of the lantern is raised and lowered, substantially as specified.

No. 19,946. Nut Lock. *(Arrête-Ecrou.)*

William C. Ladd, Kingsley, Fla., U. S., 4th August, 1884; 5 years.

Claim.—In railway rail joints, the combination of the rail sections, the fish plates, bolts and nuts, the plate *F* having orifices for the nuts, and the notched spring-plate extended between and held in position solely by the engagement of its ends in the threads of the bolts, all substantially as and for the purpose described.

No. 19,947. Bird Cage. *(Cage d'Oiseau.)*

Ernest Schultz, Hamilton, Ont., 4th August, 1884; 5 years.

Claim.—In a bird cage, the lower part of the cage, constructed with a series of recesses and projections *e, f, g* and flange *h* to admit air, in combination therewith, a sliding false bottom *D*, the whole constructed relatively substantially as and for the purpose specified.

No. 19,948. Heat Radiator for Warming Buildings. *(Radiateur de Chaleur pour Chauffer les Bâtisses.)*

Charles C. Longard, Halifax, N.S., 4th August, 1884; 5 years.

Claim.—1st. The radiator consisting of the hollow head *A*, made as described, the parallel pipes *C* secured into the holes in the under side of said head by means of the bushings *F*, the bushings *F* and the base *B*, made as described, into which the lower ends of said pipes are secured, substantially as described. 2nd. The combination of the top *A*, the pipes *C* and the bushings *F*, substantially and for the purpose herein set forth. 3rd. The combination of the top *A* and the bushings *F* in a radiator, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the pipes *C*, with the bushings *F* in a radiator, substantially as and for the purpose hereinbefore set forth. 5th. The bushings *F*, in a radiator, substantially as and for the purpose hereinbefore set forth. 6th. The method of making a tight joint between the ends of the pipes *C*, and the head or base of the radiator by means of a bushing, substantially in manner as above described.

No. 19,949. Bob Sleigh. *(Traîneau à Billot.)*

Edwin A. Harding, Harbor Springs, Mich., U.S., 4th August, 1884; 5 years.

Claim.—1st. In a bob-sleigh, the beam *B* having notches *B* rounded on the lower side, and adapted to fit down upon and into a semi-circular recess, on top of the blocks *A*, secured to the upper sides of the runners *A*, said beam having grooves *F* rounded at the bottom, thereby permitting it to oscillate upon the yokes *D* and block *A*, in combination with runners *A* provided with braces *C*, as shown and described. 2nd. The combination, with the beam *B* having chains attached thereto, of a beam having trunnions adapted to fit funnel-shaped openings in the front end of the runners, said beam having a bail and connected with said beam *B* by the chains, substantially as set forth.

No. 19,950. Oar. (Rame.)

George B. Stanton, Long Lake, N.Y., U.S., 4th August, 1884; 5 years.

Claim.—1st. As a new article of manufacture, the flexible sheet metal blade A, formed with a socket B, and made narrowest at its junction, with the said socket, substantially as set forth. 2nd. An oar constructed as described, and consisting of the flexible sheet metal blade A, provided with the socket B, and made narrowest at its junction, with the said socket, and stock D secured within said socket by the rivets E, substantially as shown and described.

No. 19,951. Machine for Reducing Ores, &c.*(Machine pour Réduire les Minerais, &c.)*

George Raymond and Albert Raymond, 4th August, 1884; 5 years.

Claim.—1st. In a machine for reducing ore by the concussion and attrition of the fragments upon each other, a case or body of increasing diameter from its ends towards its middle, combined with oppositely revolving heads having arms or blades, substantially as described and shown. 2nd. In a machine for reducing refractory materials, a body having substantially the form of two truncated cones united at their bases, and provided with the air inlets at its ends, and the discharge opening at its middle, in combination with the two revolving heads, having arms or blades overhanging a central space within the body. 3rd. In combination with the body and the revolving heads, the shafts movable in a longitudinal direction, and means, substantially as described, for effecting their adjustment. 4th. In combination with the body and the revolving heads adjustable in an axial direction, the annular openings or air inlets encircling the shafts, as described, whereby the adjustment of the shafts is caused to vary the admission of air. 5th. In an ore reducing machine, a stationary case or body provided with air inlets, combined with revolving heads having smooth spiral blades, substantially in the form described and shown, whereby the blades are caused to serve the two-fold purpose of producing a strong blast of air through the body, for the purpose of delivering the reduced material. 6th. In combination with the body having the feed openings at or near its ends, the revolving heads, each having a series of spiral divergent overhanging blades and having the surfaces of said blades continued peripherally across the hub. 7th. In combination with the reduction mechanism, the receiving chamber, a deflector and a hopper or receptacle, to retain the partially reduced material. 8th. In combination with the reduction mechanism, the chamber deflector and receptacle, the spouts and automatic valves, whereby the partially reduced material is returned to the machine for further reduction. 9th. The combination with the reduction mechanism, substantially as described, the receiving chamber, the hopper and the air passage into the lower end of the chamber, substantially as described. 10th. In combination with the reduction machine, having rotary heads adapted to project the fragments toward each other, and also to produce a blast, as described, the setting chamber provided with the series of compartments, substantially as described and shown. 11th. In combination with the machine having two rotary heads, adapted to project the material and to produce a blast, as described, a setting chamber connected therewith, and an intermediate chamber or hopper, for arresting and retaining the partially reduced material.

No. 19,952. Thrashing Machine.*(Machine à Battre.)*

Joel Bennett, Defiance, Ohio, U.S., 4th August, 1884; 5 years.

Claim.—1st. The combination, with a thrashing cylinder, of a series of rake shafts, the series of pulleys mounted thereon and decreasing in diameter successively from said cylinder, and the series of driving pulleys increasing in diameter in the same order, and engaging with the rake shaft pulleys, means for communicating rotary motion to one of said driving pulleys, a raddle belt H and sub-rotary rakes O, O₁, O₂, substantially as described. 2nd. In a thrashing machine, the combination, with a raddle belt, of a series of sub-rotary rakes adapted to receive the straw from the raddle belt, and mechanism for propelling said rotary rakes in connection with said raddle belt, substantially as described. 3rd. The combination, with a thrashing cylinder, of a series of rake shafts, the series of pulleys mounted thereon and decreasing in diameter successively from said cylinder, and the series of driving pulleys increasing in diameter in the same order and engaging with the rake shaft pulleys, means for communicating rotary motion to one of said driving pulleys, a raddle belt H, sub-rotary rakes O, O₁, O₂, and a raddle belt N adapted to operate through the seed box, substantially as and for the purpose described. 4th. The combination, with a thrashing cylinder, of a series of shafts, a series of pulleys mounted thereon and decreasing in diameter successively from said cylinder, and a series of driving pulleys increasing in diameter in the same order and engaging with a rake shaft, means for communicating a rotary motion to said driving pulleys, the raddle belt H, sub-rotary rakes to receive the straw from said raddle belt, vibrating sieves located beneath said sub-rotary rakes and the rear of said raddle belt, a raddle belt adapted to operate through the seed box, and the elevator L communicating with the tailing's spout K, adapted to convey the contents of said spout back to the thrashing cylinder, substantially as described.

No. 19,953. Balance Steam Engine.*(Machine à Vapeur Equilibrée.)*

Benjamin Field, Dailey, Mich., U.S., 4th August, 1884; 5 years.

Claim.—In a steam engine, the combination of a cylinder and steam-chest, having two central and two end induct ports, two exhaust ports and slide-valves *r, t*, of a cut-off pitmen, one playing through the other connected by independent eccentrics to the shaft A, of two piston rods which are adapted to play one through the other, of the piston-heads F, F₁ and connecting-rods *v, v₁*, with the cranks E, E₁ of the shaft A, as set forth, the whole when arranged and combined, substantially as specified.

No. 19,954. Bottle Stopper. (Bouchon de Bouteille.)

Morris Joo, Roanoke, Va., U.S., 4th August, 1884; 5 years.

Claim.—1st. The combination of a stopper, a bail carrying the same, a support for encircling the bottle-neck, a swinging lever attached at its extremities to the said support and pivotally connected with the ends of the bail, and a push-piece projecting horizontally, or approximately so from one of the bail arms for swinging the lever, substantially as described. 2nd. The combination of the yoke-lever, pivoted at its extremities to a support on the bottle, and having eyes intermediate to its ends, with the stopper-carrying bail having one arm pivoted to one of the lever eyes, and the other arm passing through the other lever eye, and extended horizontally or approximately so therefrom to provide a push piece, substantially as described.

No. 19,955. Railway Car. (Char de Railroute.)

George O. S. Conway, Stonefield, James Cooper and Frederick Fairman, Montreal, Que., 9th August, 1884; 5 years.

Claim.—1st. In combination with a railway car, rails or shoes suspended from the car under the truck frame, as and for the purposes set forth. 2nd. The combination, with the truck frame of a railway car, of the bolts D suspended to the longitudinals of the car by chains E, E or other supports allowing of compensating play, as herein set forth.

No. 19,956. Automatic Railway Signal.*(Signal Automatique de Railroute.)*

Theodore H. A. Tregen, South Lyons, Mich., U.S., 9th August, 1884; 5 years.

Claim.—1st. The combination, in a railway signalling apparatus, of a signal device A arranged adjacent to the track shafts carrying drums Q, Q, M, devices connected to the signal and arranged to be mechanically operated from either drum Q to display the signal, and devices connected to the signal and arranged to be mechanically operated by the drum M, to set the signal to its opposite position, substantially as specified. 2nd. The combination, with a signal apparatus provided with a movable semaphore of a spring actuated lever or block connected to said semaphore to display the latter under the action of the spring, a drum M and intermediate appliances, whereby the lever is depressed by the turning of the drum, a catch for retaining the lever in its lowest position, and devices connected to the catch and arranged at opposite sides of the signal and distant therefrom, and constructed to be operated by passing trains to draw back the catch, for the purpose set forth. 3rd. The combination, with the signal device provided with a semaphore and with a drum M adjacent to the signal, and connections whereby the movement of the drum, by a passing train, is made the means of unsetting the signal, a catch for retaining the parts in one position, and devices arranged to be operated by the train at distant points, to release the catch, substantially as set forth. 4th. The combination, with the semaphore, of a cord connected thereto and to a lever or block, a spring for raising the latter to display the signal, a catch and means for operating the same from distant points by the movement of passing trains, and a crank shaft provided with a drum arranged to be struck by a train passing the signal, and a pitman connected to the crank and serving to compress the spring and unset the signal, as the drum is rotated, substantially as set forth. 5th. The combination, with the signal and spring for setting the same, and with mechanism for compressing the spring, to unset the signal by the action of a passing train, and with a catch for holding the parts in position, or shafts arranged upon opposite sides of the signal at distant points, carrying drums to be rotated by passing trains, and each having a clutch connection with a pulley around which a cord passes to a catch, when the said clutches are constructed to permit the drum shafts to rotate without moving the latch, when the trains are passing from the signal, substantially as described. 6th. The combination, with the signal and its operating table, of a spring and connections, whereby the signal is set by the action of the spring, a catch for retaining the spring in its compressed condition, and a crank shaft provided with a drum arranged to be operated by passing trains and with a pitman, whereby the spring is compressed by the rotation of the shaft, substantially as set forth. 7th. The combination, with the signal and of a crank shaft carrying a drum and pitman connected to a block, of a spring lever connected to the operating cord of the signal and a spring arranged to elevate the lever, substantially as set forth. 8th. The combination of the crank-shaft, drum, reciprocating block lever connected to the operating cord of the signal spring, and catch connected by cords to pulleys upon shafts, arranged at distant points, upon opposite sides of the signal, and drums and clutch connections, constructed to operate substantially as set forth. 9th. The combination, with the signal and catch for retaining the latter in its lowest position, of a shaft at a distant point on each side of the signal, provided with a drum arranged to be rotated by passing trains, a pulley connected by a cord with the catch, and clutch connections between the pulley and the drum, whereby the pulley is turned to draw back the catch only by trains that approach the signal, substantially as specified. 10th. A railway signalling apparatus, constructed substantially as described for the purposes set forth.

No. 19,957. Electrophone Transmitter.*(Transmetteur d'Electrophone.)*

James A. Kingsbury, Chicago, Ill., U.S., 9th August, 1884; 5 years.

Claim.—The spring D carrying the point D₁, in combination with the intermediate spring E carrying the point E₁, the diaphragm C and the wires L, K, substantially as and for the purpose herein specified.

No. 19,958. Telephone Transmitter.*(Transmetteur Téléphonique.)*

James A. Wright, Montreal, Que., 9th August, 1884; 5 years.

Claim.—1st. In combination with the diaphragm of a microphone,

a series of horizontal carbon bars or rods mounted at right angles to the diaphragm and arranged in the form of a grid, and electrical connections, substantially as described. 2nd. The combination, with the diaphragm of a microphone transmitter, of the casting D and the grid composed of carbon bars or rods, and carbon pencils supported thereby, substantially as described. 3rd. In a telephone transmitter, the combination of a vibratory diaphragm, a casting D mounted thereon, a grid composed of carbon standards and carbon pencils supported thereby, an induction coil and electrical connections with a battery and line, all substantially as described.

No. 19,959. Telephone Receiver.

(Récepteur Téléphonique.)

James A. Wright, Montreal, Que. 9th August, 1884; 5 years.

Claim.—1st. The method of neutralizing extra currents in a telephone receiver, which consists in combining, with the electro-magnet, one or more strips of insulated magnetic material, whereby such currents are absorbed. 2nd. The method of overcoming induction in a telephone receiver, which consists in causing the current to pass through an electro-magnet, which contains magnetic substance insulated from the helix, whereby a portion of the line current and any induced currents are absorbed by such magnetic substance, substantially as and for the purpose set forth. 3rd. In a telephone receiver, the combination of a permanent magnet, a diaphragm and an electro-magnet having a core, which forms an extension of one of the poles of the magnet, such electro-magnet being formed of alternate layers of insulated wire and strips of metal foil, substantially as and for the purpose set forth. 4th. In a telephone receiver, an electro-magnet composed of an insulated copper wire, and strips of metal interposed between the layers of wire, substantially as and for the purpose set forth. 5th. In a telephone receiver, the combination, with the case and diaphragm, of an U-magnet forming the handle thereof, such handle being arranged in line with the said case and diaphragm, and having one of its poles in magnetic contact with the diaphragm, substantially as and for the purpose set forth. 6th. The combination, with the arm of a permanent magnet having a threaded orifice, of a threaded extension and a check nut, all substantially as described.

No. 19,960. Store Service Apparatus.

(Appareil de Transport pour Magasin.)

Harris H. Hayden, New York, N.Y., U.S., 9th August, 1884; 5 years.

Claim.—1st. The combination, in a store-service apparatus, of a way consisting of parallel rails forming a continuous central slot *y* and carriers, with wheels adapted to said parallel rails, and with baskets or holders suspended therefrom by stems extending through said slot, substantially as set forth. 2nd. The way consisting of separated strips or rails *q, q*, connected by overarching yokes *C*, substantially as set forth. 3rd. The combination, in a way, of rails *q, q*, connected by overarching yokes and spread apart from the upper to the lower edges, as specified. 4th. The combination, with the way and yokes *q*, of a bar *B* supporting said yokes, as set forth. 5th. The way consisting of parallel separated bars, with slots *r* extending through one of said bars, for the purpose set forth. 6th. The combination, with the way having slots *r*, of guides *t*, as specified. 7th. The way consisting of two parallel sections, with slots in one of said sections, and with automatic closing devices, substantially as set forth. 8th. The way provided with a movable section *P*, in combination with a locking device constructed to be operated by the carriers, and with a counter-balance, substantially as set forth. 9th. The way provided with a movable section *P*, in combination with a locking device constructed to be operated by the carriers, and with a counter-balance and an auxiliary section *Az*, substantially as set forth. 10th. The combination, with the way and its movable section, of a gate and appliances for closing and opening the same, as said section is operated, substantially as specified. 11th. The combination, with the way and its movable section, of a locking device provided with stops or projections, and carriers provided with adjustable stopping *p* to act upon said locks, substantially as set forth. 12th. The carrier with wheels adapted to ways, consisting of parallel rails with an intervening continuous slot and provided with a central dependent stem supporting a receptacle, in combination with said ways, as specified. 13th. The combination in a carrier, of a basket *f* and a handle *e* connected to the carrier-frame and provided with a handle *g*, substantially as set forth. 14th. The combination of the tracks and flexible suspensories, and the guys or stays connected to the ways, substantially as specified. 15th. The combination of the ways *A, A*, and flexible suspensories connected to both ways and adjustably supported, substantially as specified. 16th. The eye pieces *u*, adapted to the rails, and with pins adjustable in sockets in the yokes *C*, as and for the purpose set forth.

No. 19,961. Store Service Apparatus.

(Appareil de Transport pour Magasin.)

Harris H. Hayden, New York, N.Y., U.S., 9th August, 1884; 5 years.

Claim.—1st. A store service apparatus, provided with a band or cable for moving the carriers passing round pulleys upon the frame, and with a motor device carried by the said frame, substantially as set forth. 2nd. A store service apparatus in which the carriers are driven positively, in combination with a motor apparatus carried by the frame, which supports the ways of the apparatus, substantially as set forth. 3rd. The combination, with the counters and desk of a store, of ways arranged above the counters, means for driving the carriers positively upon said ways, and a motor apparatus carried by the frame which supports said ways, substantially as set forth. 4th. A motor apparatus, combined directly with the driving wheel of a store service apparatus. 5th. A motor apparatus, carrying upon its driving shaft a wheel or pulley around which passes the driving belt of a store service apparatus. 6th. The combination, with the way supporting the carrier, and means of driving the latter, of a receptacle at one side, and a detaching device at the opposite side, sub-

stantially as set forth. 7th. The combination of the way detaching device arranged to roll the carriers from the way, and receptacle at the opposite side movable vertically, for the purpose set forth. 8th. The combination, with the tracks of a store service apparatus arranged above a counter, of a screen *E*, for the purpose specified. 9th. In a store service apparatus, the combination of parallel stationary belt-guides arranged between the desk and counters, a continuous belt supported by said guides provided with pins projecting beyond the guides and passing around pulleys and carrier-detaching devices, substantially as set forth. 10th. The belt-guides, consisting of grooved moldings arranged to leave an intermediate slot, and connected as specified. 11th. The combination of the slotted stationary guides *M* and the belt *S*, travelling round pulleys through said guides and provided with pins *O*, substantially as set forth. 12th. The combination, with the travelling belt, and way adjacent thereto, adapted to receive and guide travelling carriers, of push-pins pivoted to the belt, substantially as and for the purpose set forth.

No. 19,962. Machine for Uniting the Uppers and Soles of Boots, etc. (Machine pour assembler les Empeignes et les Semelles des Chaussures.)

Stillman W. Robinson and Orlando E. Lewis, Columbus, Ohio, U. S., 19th August, 1884; 5 years.

Claim.—1st. In a nailing machine, a support for the stock, the uniformly reciprocated working head, and the spring pressed sleeve carried thereby, and the spindle therein and its grippers *a* adapted to engage the fastening strip or wire, and to drive the same into the stock, the grippers acting to drive the said strip or wire into the stock after the sleeve is arrested in its downward movement, substantially as described. 2nd. The uniformly reciprocated working head, the spindle provided with grippers to engage the fastening strip or wire, and the sleeve to receive the spindle and adapted to be lifted with the working head and to descend therewith until arrested by the stock on the work support, combined with the screws or projections *7*, carried by the working head to act upon the grippers *a*, and force them toward each other to grasp and drive the strip or wire into the stock, substantially as described. 3rd. The work support and the working head and its grippers, both working in unison with an unvarying length of stroke, combined with the reciprocating sleeve *D1*, spindle *B* therein and grippers *b, b*, the latter having a varying stroke determined by the thickness of the stock, all co-operating to insert the fastening strip or wire to insure the production of a fastening therefrom in accordance with the thickness of stock being operated upon, substantially as set forth and described. 4th. The spindle *B* and its throat-piece *17*, having an opening or channel corresponding in cross-section with the cross-section of the fastening strip or wire, combined with means, substantially as described, to partially rotate the spindle, the latter turning the strip or wire with it, as set forth. 5th. In a nailing machine, the combination of mechanism, substantially as described, to drive the end of the fastening strip or wire into the stock with the grippers, to engage and partially turn or rotate the driven strip or wire after its insertion into the stock, whereby the grooved edges of the strip are enabled to cut into portions of the stock unturned or abraded by the grooved edges of the strip or wire, when being driven into the stock, substantially as described. 6th. The combination of the working head, sleeve *D1*, partially rotating spindle *B*, grippers *a, a* and adjusting screws *7, 7*, with the grippers *b, b* and ring *e*, bars *e1, e1*, block *e4* and spring *e2*, as described. 7th. The combination of the spindle *B*, grippers *b, b* and ring *e* with the vertical bars *e1, e1* to operate the said ring and grippers, substantially as described. 8th. The working head *D* and the sleeve *D1*, combined with the lever *d* and spring to act upon and press the nose of the sleeve upon the stock, substantially as described. 9th. The combination of the partially rotating rod and projections thereon, and levers *E, E* for operating the outters, as described. 10th. The working head, sleeve and spindle *B* and grippers *a, a* combined with the levers and cutters to cut off the driven wire next the stock, substantially as described. 11th. The combination of the feed bar *g*, with the bar *g1*, having a slot at its back end and a pin *g2* at its front end, as and for the purpose described. 12th. The work support and the spindle through which the fastening strip or wire is extended, and means, substantially as described, to reciprocate and to partially rotate the said spindle, combined with grippers to engage the fastening strip or wire and drive it into the stock to hold and partially rotate the strip or wire in the stock, as set forth. 13th. The herein described method of uniting pieces of leather, which consists in forcing into the same, wire portions of which are grooved or serrated while other portions are smooth, and thereafter partially rotating the said wire in the leather and cutting off the wire, substantially as and for the purposes set forth.

No. 19,963. Method and Process for Welding Steel and Iron. (Méthode et Procédé de Soudage de l'Acier et du fer.)

John B. Armstrong, (assignee of Charles W. Vernon), Guelph, Ont., 9th August, 1884; 5 years.

Claim.—1st. The use of a close die to form scarfs for welding, substantially as described. 2nd. The shaping of scarfs to form a lock for welding, substantially as described and set forth.

No. 19,964. Snow Plough. (Charrue à Neige.)

John Q. Day, Red Cliff, Col., U. S., 9th August, 1884; 5 years.

Claim.—1st. The stop grates *k*, in combination with a wheel having annular side grooves *b*, and shovels *g* and dischargers *j*, said stop grates being arranged for, and provided with means to cause them to project at the lower part of the wheel to stop the snow in the grooves, and withdraw at the upper part to pass the dischargers, substantially as described. 2nd. The stop grates *k*, the yoke *l* and the stationary eccentric *m*, in combination with a wheel having annular side grooves *b*, shovels *g* and dischargers *j*, said stop grates being arranged to project at the lower part of the wheel to stop the snow in the grooves, and to

withdraw in the upper part of said wheel to pass the dischargers, substantially as described. 3rd. In a snow wheel having annular grooves *b* in the sides, shovels *g* for gathering the snow and the dischargers *j* for throwing out the snow, the outer rim *i* arranged to flare from the bottom of the grooves outward, to facilitate the discharge of the snow, substantially as described.

No. 19,965. Carriage Running Gear.

(*Train de Voiture.*)

Dudley Ackland, Almonte, Ont., 15th August, 1884; 5 years.

Claim.—1st. In combination with the front, side and rear springs, the spring U passing from below the front axle to the rear end of the platform in line with the draft and secured at both ends, as set forth. 2nd. The fifth, wheel, composed of the upper plate secured to the front spring, and an annular flange N enclosing the moving plate M clipped to the front axle, in combination with the king-bolt E straddling the axle, and clipped by the bars R and nuts S, as set forth.

No. 19,966. Match Slicing and Racking Machine.

(*Machine à tailler et saisir les Allumettes.*)

Thomas A. Cook, Ottawa, Ont., and Félix Labelle, Hull, Que., 15th August, 1884; 5 years.

Claim.—1st. The knife or cutter K, consisting of a thin and tapering plate having its sides strengthened by ridges or flanges, so that the sides form parallelograms, the cutting edge of the plate finely serrated, the pitch of the serration corresponding to the thickness of the match splinter. 2nd. The knife or knives *k*, consisting of the plain flat bars of steel having their end reduced to a thin blade, of a length corresponding to the thickness of the match splinters, the end and front edge being sharpened to cut. 3rd. The cutter head or knife holder S, being formed with a slot corresponding to the width of the knives secured therein by set screws D, the head carrying a lever *l*, its ends being journalled in suitable bearings. 4th. The mechanism for swinging the knife holder S, pivotally consisting of the arm N, provided with shoulder *m* forming notch, in which the lever *l* may work, and the shoulders being so placed as to effect the desired movements at their right time, the arm being secured to the table T, by means of a bent. 5th. The combination of a cutter K, knives *k*, cutter head S and arm N, with table T, and head stock H having channels tapering wider toward the delivery end. 6th. The combination of the table T, jaws J, feed rollers Rr, projecting slightly beyond the working face of the jaws and geared together by spur wheels W₁, W₂, ratchet wheel W₃ keyed to one of the rollers, and pawls P. 7th. The combination, forming the racking arrangement, consisting of the slide bars B supporting the rack table T₁, carrying trays *m* between the guide posts *p*₂, and having ratchet teeth *t* worked by the spring lever, pawl P₂ pivoted upon the end of the lever *l*, which is centred at E, and having feelers *r*₁, *r*₂ bearing on cams on the table T, and imparting movement to the lever *l*, in conjunction with the headstock H and table T, all substantially as shown and described and for the purpose set forth.

No. 19,967. Saw Tooth Swage.

(*Etampe pour Dent de Scie.*)

Nathan L. Gano, Kingsferry, Fla., U. S., 15th August, 1884; 5 years.

Claim.—1st. A saw swaging die provided with the T-head *f*, in combination with the roll *d* having a peripheral groove *c* to receive the die, and at right angles thereto, short grooves to receive the head, whereby the die may be held, as described. 2nd. The combination, with roll *d* and plates *g*, of the end pointed levers *k*, *p*, the latter connected by a link to the top of a standard *q*, as and for the purpose specified. 3rd. The curved pointed and T-headed die *a*, combined with a grooved and slotted roller *d* and levers *k*, substantially as described. 4th. The combination, with the roll or shaft *d* having a peripheral groove *c*, of a U-shaped die *a* placed in the groove, substantially as described.

No. 19,968. Combination Tool.

(*Outil à combinaison.*)

James F. Call, Clear Lake, Wis., U. S., 15th August, 1884; 5 years.

Claim.—1st. The combination tool, composing a graduated handle or bar adapted to serve as a measuring device, and having a head to serve as a canter and cutting tool, said handle having also a marking tool, a saw and a gage, substantially as described. 2nd. In a combination tool, the graduated handle comprising the scale upon one side and a stud upon the other side, and a head to serve as a canter and a cutting tool, in combination with marking tool, a saw and a gage, substantially as set forth. 3rd. In a combination tool, the handle having a scale upon one side and a stud upon the other side, and a head having the functions of a canter and a cutting tool, in combination with a marking device, a saw and a gage comprising the fixed finger and adjustable finger, substantially as and for the purpose set forth. 4th. In a combination tool, the graduated handle having a marking device, a saw and a gage, in combination with a head having an axle upon one end and a canter upon the other end, said canter being inclined toward the handle and formed with a chisel edge, substantially as specified. 5th. In a combination tool, the graduated handle having a head having the functions of a canter and cutting tool, a gage and a saw, in combination with the marking device, with its holder adapted to form the handle of the saw, substantially as and for the purpose set forth. 6th. In a combination tool, the graduated handle having a head adapted to perform the functions of a canter, and a cutting device, a gage and saw, in combination with a marking tool, with its holder adapted to serve as a handle for the saw, and having means to effect the adjustment of the lead or pencil, substantially as set forth. 7th. In a combination tool, the graduated handle having a head adapted to serve as a cutting tool and a canter, a marking device, a gage and a saw, said handle comprising a grooved band detachably connected to the holder of the marking device, substantially as and for the purpose set forth.

No. 19,969. Domestic Fire Escape.

(*Sauveteur d'Incendie pour Domicile.*)

Thomas Hale, Claydon, Eng., 15th August, 1884; 5 years.

Claim.—A domestic fire-escape consisting of a portable folding frame composed of a cross bar, uprights and jib carrying a sheave, said frame being constructed and adapted to be fixed in a window opening, substantially as herein shown and described, in combination with a suitable lowering sack or other contrivance, suspended by a rope passing over said sheave.

No. 19,970. Apparatus for Producing Gas from Saw Dust.

(*Appareil de Fabrication du Gaz avec la Sciure.*)

George Walker, Deseronto, Ont., 15th August, 1884; 5 years.

Claim.—1st. The combination of the carbonizing retort, a conveyor therein and a conduit connecting with the front of the retort, of a conveyor feeding the material automatically to the conduit, substantially as described. 2nd. The combination, with the carbonizing retort and a conveyor for moving the material from front to rear thereof, of a closed charcoal main connected with the rear end of the retort, a conveyor therein for moving the material to the discharging point, and means for discharging the carbonized material from said main into a closed vehicle, substantially as described. 3rd. The combination, with the carbonizing retort and a conveyor for moving the material from front to rear thereof, of a charcoal main connected with the rear end of the retort, and having a discharge opening for delivering the carbonized material to a vehicle or car, and an air-tight valve for controlling the said discharge opening, substantially as described. 4th. The combination, with the carbonizing retort and a conveyor for moving the material from front to rear thereof, of a conduit connected with the front end of the retort, a hopper connected with the conduit, and a conveyor for uniformly and automatically feeding the material into the hopper, substantially as described. 5th. The combination, with the carbonizing retort and a conveyor for moving the material from front to rear thereof, of a conduit connected with the front end of the retort, a hopper above the conduit, a conveyor for automatically feeding the material to the hopper, an agitator in the hopper, and a conveyor in the conduit for forcing the material into the retort, substantially as described. 6th. The combination, with the carbonizing retort and a conveyor therein for moving the material from front to rear thereof, a charcoal main connected with the rear end of the retort to receive the carbonized material, a conveyor in said main to move the carbonized material along the same, and discharge it at the desired point into a closed vehicle or car, of a condenser connections leading from the retort to convey the vapor and gases from the condenser, and means for carrying the uncondensable gases from the gas for denser to a gas exhauster, scrubber and purifier to utilize the gas for illuminating purposes, substantially as described. 7th. The combination, with the carbonizing retort, of the charcoal main having a discharge opening, a conveyor for moving the carbonized material along the main as received from the retort, and a valve controlling the discharge opening for delivering the material to a closed vehicle or car, substantially as described. 8th. The combination, with the carbonizing retort, of the charcoal main having a discharge opening, a conveyor for moving the carbonized material along the main, the valve controlling the discharge opening, and a closed car or vehicle having means to connect it air-tight with the tubular neck, substantially as described. 9th. The combination, with the carbonizing retort, of the charcoal main having a discharge opening in the form of a pendant neck, a conveyor for moving the carbonized material to the discharge opening, a valve controlling the latter, a closed vehicle or car having means to connect it air-tight with the tubular neck, and devices to raise the vehicle or car, substantially as described. 10th. The combination, with the retort, for carbonizing the saw dust, a charcoal main for receiving the carbonized material from the retort, a conveyor in the main to move the material therein to a distant point and discharge it into a vehicle or car, and means, substantially as described, for conducting the gas and vapor arising from the carbonizing saw dust in the retort to a condenser to a gas exhauster, scrubber and purifier, for utilizing such gas for illuminating purposes, substantially as described. 11th. The combination, with a saw dust carbonizing retort, a charcoal main for receiving the carbonized material from the retort, a charcoal car so receive the carbonized material, connections leading from the retort to the condenser, with a gas receiving main connected with the condenser, with pipe connections and valves for conveying the mixture of air and gas contained in a newly-connected charcoal car into the retort furnace, substantially as described. 12th. In combination with a carbonizing retort, a charcoal main connected with the rear end of the retort, a vapor main connected with the rear end of the retort, of a closed hot air chamber enclosing said charcoal main, vapor main and connections with the rear end of the retort, and having an opening opposite the rear end of the retort closed by an iron plate or door, and an opening in the top of the hot air chamber closed with iron plates or doors, substantially as described. 13th. An apparatus for carbonizing saw dust, consisting of one or more retorts in suitable setting, and provided with conveyors and connected at the front with hoppers having agitators and conveyors, and at the rear with a charcoal main having a conveyor, and a discharge valve adapted to deliver the charcoal into closed cars, the retorts also connected at the rear with a gas main communicating by suitable connections with a condenser, scrubber and purifier, said connections provided with valves and connections for discharging impure products into the furnace for immediate consumption, the charcoal main and vapor main enclosed in a hot-air chamber to prevent premature refrigeration of the products, substantially as described. 14th. The process of producing illuminating gas from saw dust, by feeding the same into hoppers, delivering it gradually to the rear and discharging into a charcoal main provided with means for moving it to, and discharging through a discharge opening by an air-tight passage, the gas passing through the retorts into a main and thence into a condenser, and other apparatus for further treatment by suitable connections provided with means for passing

any impure gaseous product to the furnace at intervals, substantially as described and for the purpose set forth.

No. 19,971. Induction Coil. (*Bobine d'Induction.*)

James A. Wright, Montreal, Que., 15th August, 1884; 5 years.

Claim.—1st. An induction coil composed of a core, primary and secondary wires and one or more strips or bands of metal foil, substantially as and for the purpose set forth. 2nd. An induction coil composed of a core, a primary wire, a secondary wire, and strips of metal foil in proximity to and insulated from the secondary wire, substantially as described. 3rd. An induction coil composed of a core, a primary coil, a secondary coil and strips of metal foil arranged to alternate with the layers of wire composing the secondary coil, and insulated therefrom, substantially as described and for the purpose set forth.

No. 19,972. Boat Detacher.

(*Suspension des Canots.*)

Andrew D. Post, Keyport, N.J., U.S., 16th August, 1884; 5 years.

Claim.—In a boat detacher, the combination with the casting *d* secured to the bow of the boat, and provided with aligned perforated lugs *e e* and the casting *f* secured in the stern of the boat and provided with the perforated aligned lugs *g, g*, of the base plate *h* having stud *i* secured in the bottom of the boat, the pivoted lever *k* connected to the hand lever *r*, and the bolt-rods *l, n* attached to the lever *k* and passing through the perforated lugs, as set forth.

No. 19,973. Manufacturing Sheet Metal Tubes or Cylinders. (*Fabrication des Tubes ou Cylindres en Tôle.*)

Edward K. Coas and Charles H. Wonsou, East Gloucester, Mass., U.S., 15th August, 1884; 5 years.

Claim.—The mode, herein described, of making a sheet metal cylinder, said mode consisting in coiling a ribbon with its edges close together to the form of a tube, similarly coiling upon this another ribbon breaking joint with the first, and uniting the coils and the tubular formed bands to each other by solder, all substantially as specified.

No. 19,974. Tobacco Package.

(*Enveloppe de Tabac.*)

David C. Mayo, Montreal, Que., 15th August, 1884; 5 years.

Claim.—1st. A tobacco package composed essentially of an inner receptacle of absorbent material, and an air-tight outer covering, substantially as and for the purpose specified. 2nd. A tobacco package composed essentially of a wood pulp box or receptacle, and an exterior wrapper or covering of tin foil, combined so as to maintain a damp envelope around the tobacco, as specified.

No. 19,975. Railway Car. (*Char de Railroute.*)

William H. Holmes, Chicago, Ill., U.S., 15th August, 1884; 5 years.

Claim.—A saloon car for day passengers, having open end platforms communicating directly with an interior, continuous side passage extending from end to end of the car, and connecting such platforms having a series of doors in the outer side of such passage, a series of private compartments having doors opening into such passage, and having also another series of doors on the opposite side of the car, the car being also provided with compartments, apparatus for heating, washing, the customary conveyances, &c.

No. 19,976. Combination Tool.

(*Outil à Combinaison.*)

James H. Beazley, Grapeland, Texas, U.S., 15th August, 1884; 5 years.

Claim.—1st. The herein-described combination tool, consisting of two levers crossing each other, pivoted or jointed at the point of crossing, and formed with angular jaws in advance of the pivots, said jaws being provided at their outer angle with projecting lips having their edges to grasp staples and nails, and to enter the wood at the sides thereof, and with wire cutting lips or notches, all substantially as described and shown. 2nd. An implement for drawing and straightening nails and staples, consisting of pivoted cross levers provided in advance of their pivot with angular jaws having sharp-edged lips at the outer angle of the jaws, substantially as and for the purpose explained.

No. 19,977. Sash-Holder. (*Arrête-Croisée.*)

George E. Gorham, Albany, N.Y., U.S., 15th August, 1884; 5 years.

Claim.—1st. In devices for producing friction between the meeting rails of window sashes when closed, and between the parting strips and sashes when open, the combination of the springs *a* having upper and lower bulges, and secured at their outer ends to the stiles, as described, and pins extending from the frame across the springs against which the bulges bear, substantially as and for the purpose set forth. 2nd. The combination, with the sashes and frame of a window, of the spring secured at its outer ends to the sash, and having upper and lower bulges and formed with the semicircular bend *f*, the staple *g* and pins extending from the sides of the frame against which the bulges of the spring bear, substantially as and for the purpose set forth.

No. 19,978. Manufacture of Steel Castings.

(*Fabrication des Ouvrages en Fonte d'Acier.*)

The Francis Manufacturing Company, New Britain, (Assignee of George W. Francis, Middletown), Ct., U.S., 15th August, 1884; 15 years.

Claim.—1st. The method of producing manufactures of steel, which consists in melting steel and charcoal pig-iron in the proportions set forth, pouring the same into moulds and finally annealing to produce manufactures of steel which can be hammered, hardened and tempered, substantially as described. 2nd. The method of producing manufactures of steel, which consists in melting steel and charcoal pig-iron in the proportions set forth, and pouring the same into moulds to produce manufactures of steel, substantially as described.

No. 19,979. Sulky Plough. (*Charrue à Siège.*)

William L. Cassaday and The South Bend Iron Works, South Bend, Ind., U.S., 15th August, 1884; 5 years.

Claim.—1st. In a sulky plow, the combination, with the supporting wheels, of a crank having a plow beam journaled thereon, and devices for detachably locking the crank to one of the supporting wheels for elevating the plow by the draft of the team, substantially as set forth. 2nd. In a sulky plow, the combination, with the supporting wheels, of a crank having a jointed plow beam journaled thereon, and devices for elevating the plow by the draft of the team, substantially as set forth. 3rd. In a sulky plow, the combination, with a crank axle supported on wheels, and a plow supported on the axle, of devices for locking the axle to one of the wheels, whereby the plow can be elevated by the draft of the team. 4th. In a sulky plow, the combination, with a crank axle supported on wheels, and a plow supported on the axle, of a sliding dog connected to the axle and adapted to engage the land wheel, for the purpose of locking the axle thereto. 5th. In a sulky plow, the combination, with a crank axle, a plow supported on the axle and ground wheels, one of which is provided with a ring having a series of pockets or recesses formed therein, of a sliding dog secured within the cranked axle, and devices for moving the dog into and out of contact with the recessed plate. 6th. The combination, with a cranked axle supported on wheels, and a jointed plow beam journaled on the axle, of devices for rigidly locking the two parts of the beam together, and devices for locking the axle to one of the wheels, substantially as set forth. 7th. The combination, with a cranked axle and a plow beam journaled thereon, of a spring actuated sliding dog seated in the axle, wheels supporting the axle, one of the said wheels being provided with a recessed ring, and devices for throwing the dog into and out of contact with the recessed ring. 8th. The combination, with a cranked axle, wheels supporting the axle, a jointed plow beam journaled to the said axle, and devices for locking the axle to one of the wheels, of a device for locking the two parts of the jointed beam, and a lever for simultaneously unlocking the two parts of the beam and locking the axle to one of the ground wheels. 9th. The combination, with a cranked axle, a jointed plow beam journaled on said axle, wheels supporting the axle and devices for locking one of the wheels to the axle, of a sliding tongue for locking the two parts of the jointed beam, a spring actuated dog indirectly connected to said tongue, and a lever for simultaneously moving the tongue and dog. 10th. The combination, with a cranked axle having spindles formed on the opposite end thereof, sleeves in which the said spindles rest, and wheel spindles connected to the sleeves, of a sector secured to the axle spindle on one side of the machine, and a hand lever connected to the sleeve on the same side of the machine, and provided with a dog for engaging the sector, and a hand lever connected to the axle spindle on the opposite side of the machine, and provided with a dog for engaging a sector secured to the sleeve on the same side of the machine. 11th. The combination, with a cranked axle supported in sleeves, and wheel spindles connected to the sleeve and forming cranks, of a jointed plow beam tongue for locking the two parts of the beam, a sliding dog for locking the axle to one of the wheels, and mechanism connecting the tongue and dog, whereby they are operated simultaneously, substantially as set forth. 12th. The combination, with the cranked axle provided with the spring actuated dog, the wheels one of which is provided with a recessed plate, and a jointed plow beam journaled to the axle, of a tongue for locking the two parts of the jointed beam and provided with a plate having a cam slot formed therein, a bell crank lever, one end of which is connected to the dog, while the opposite end rests within the cam slot, and a lever for operating the tongue and dog simultaneously. 13th. The combination, with the cranked axle and spring actuated sliding dog seated within the axle, wheels, one of which is provided with a recessed ring or plate, and a jointed plow beam journaled on the axle, of a spring actuated sliding tongue for locking the two parts of the beam, and intermediate devices connecting the dog and tongue, whereby both are operated simultaneously. 14th. The combination, with a cranked axle and supporting wheels, of a jointed plow beam made up in sections and embracing the axle at the joint, the said sections being provided with lips or projections, for holding the two portions of the beam in the same plane. 15th. The combination, with a cranked axle and supporting wheels, of a jointed plow beam consisting essentially of two rear sections secured together and embracing the axle, and two front sections secured together and embracing the rear section, one or more of the said section being provided with projections, for holding the parts of the beam in the same plane, substantially as set forth. 16th. The combination, with a cranked axle and supporting wheels, of a jointed plow beam consisting essentially of two rear sections secured together, each of which is provided with a semi-circular bearing for embracing the axle, and a rearward extension, and two front sections secured together and provided with bearings for embracing the bearings of the rear sections, one or more of the said sections being provided with lips for holding the two parts of the beam in the same plane, and a plow standard secured between the rearward extensions of the rear sections, substantially as set forth. 17th. The combination, with a cranked axle provided with spindle ends, of the cranked sleeve *C* provided with a wheel spindle, a sector rigidly secured to the axle spindle, and a hand lever secured to the sleeve and provided with a spring actuated dog. 18th. The combination, with a cranked axle having spindles on opposite ends, a spring actuated dog seated in one of the said spindles, devices for operating the dog, and a spindle sleeve having a wheel spindle formed integral therewith, of a sector secured to the axle spindle, a hand lever secured to the sleeve and provided with a spring actuated dog, and a land wheel provided with a recessed ring with which the spring actuated dog engages. 19th. In a sulky plow, the combination, with an axle,

pendently of each other, and adapted to press on the bat as the cone or former revolves, substantially as specified.

No 19,984. Pneumatic and Automatic Grain Transfer Apparatus. (*Appareil Pneumatique et Automatique de Transport des Grains.*)

Lyman Smith, Kansas, Mo., U.S., 15th August, 1884; 5 years.

Claim.—1st. The means, herein, described of transferring grain, which consists in creating a vacuum or partial vacuum in a suitable vessel mounted upon a railroad car, then causing the grain to rush into said vessel, then weighing it, then forcing the grain out of the vessel under pressure. 2nd. The method, herein described, of transferring grain from one car to another by, first, causing a vacuum in a suitable vessel mounted upon a railroad car, then supplying grain to the sucking action of the vacuum in said vessel, then subjecting the grain to air pressure, whereby it is ventilated and forced into the car to be loaded. 3rd. The combination, herein described, consisting of the exhaust hopper bin, the inlet and outlet pipes with the exhaustor and blower, and with the auxiliary force pipes, for the purpose set forth and described. 4th. The combination, herein described, consisting of the exhaust and reception hopper bin, the inlet and outlet pipes, the exhaust chamber, with the exhaustor and blower mounted upon a railroad car and with the weighing medium, as set forth. 5th. The combination, in an apparatus for transferring grain, consisting of the hopper bin, inlet and outlet, grain pipes, and the exhaustor with the weighing device, and the levelling devices, as set forth and for the purpose specified. 6th. The method, herein described, of transferring grain or other material by pneumatic process, which consists, first, in creating a vacuum or partial vacuum in a vessel, then attaching conduits to where grain is stored, and then opening communication to places of transfer from said vacuum chamber, then destroying said vacuum by the admission of air to said vacuum chamber, in such manner that its contents will automatically discharge themselves by their own gravity. 7th. The combination, in a system for transferring grain by pneumatic means, consisting of the hopper bins, the pneumatic main for exhausting the bins, the branch pipes provided with controlling valves, and the loading and unloading conduits, as set forth and described. 8th. A mouth-piece for a pneumatic lifting device having a narrow inlet at its face, and an air chamber and pipes, substantially as set forth. 9th. A mouth-piece for a pneumatic lifting device, combined with a castor or supporting roller, substantially as set forth. 10th. A mouth-piece for a pneumatic lifting device, combined with a castor and moving or controlling handles, substantially as set forth. 11th. A mouth-piece for a pneumatic lifting device, combined with a castor, air-inlet pipes serving as handles, and a flexible pipe connection, substantially as set forth. 12th. A mouth-piece for a lifting pneumatic device, having a narrow inlet at its face, and an air inlet terminating adjacent to the inlet, in an opening or slot of substantially equivalent length, as set forth.

No. 19,985. Feed Box for Horses.

(*Crèche de Cheval.*)

Alonzo L. Kane, Milwaukee, Wis., U.S., 15th August, 1884; 5 years.

Claim.—1st. In a feed box, the combination of the feed trough A, grain receptacle B having downwardly inclined bottom I, concave above the bottom of the feed-trough A, and partition C provided with opening E, the concave surface of said bottom I being adapted to cause the grain to flow towards its centre, whereby it is prevented from clogging against the sides of the receptacle in its course to the feed-trough, substantially as set forth. 2nd. In a feed box, the combination of feed trough A, partition C having opening E, grain receptacle B having an inclined bottom I, provided with screen F and grain-board G, said board being adapted to conduct the grain to the upper part of said screen, whereby, in passing to the feed box, sand and other foreign substances are separated therefrom, as set forth. 3rd. The combination, in a feed box, of the feed trough A having an upwardly inclined bottom H, grain receptacle B having a downwardly inclined bottom I provided with a screen F, grain board G, open cover D, and partition C provided with opening or grain passage E, all substantially as and for the purpose specified.

No. 19,986. Railway Switch.

(*Aiguille de Chemin de Fer.*)

Aldémard Roy, Ste. Luce, Que., 15th August, 1884; 5 years.

Claim.—1st. In a railway switch, the movable guard rails A, A' pivoted to the track, as at a, and having their opposite ends sloped downward, as and for the purpose above described. 2nd. In a railway switch, the boxes B, B', having the upturned and inwardly inclined ends b, b', and the removable blocks F, F', provided with V-shaped recesses, as and for the purpose hereinbefore set forth.

No. 19,987. Hermetically Sealing Sheet Metal Can. (*Boîte Métallique à Fermeture Hermétique.*)

David A. Jones, Beeton, Ont., 15th August, 1884; 5 years.

Claim.—1st. The strengthening ring A, soldered or otherwise rigidly fastened to the mouth of the can B, and having an internally projecting flange a formed around its top edge, in combination with a cover C arranged to screw upon the ring A, substantially as and for the purpose specified. 2nd. The strengthening ring A, soldered or otherwise rigidly fastened to the mouth of the can B, and having an internally projecting flange a formed around its top edge, in combination with the gasket or washer b, made of porous material and dipped into melted wax and compressed against the flange a by the cover C, substantially as and for the purpose specified.

No. 19,988. Composition for Cold, Cough, Bronchitis, Hooping Cough, &c. (*Composition pour la Toux, la Bronchite, la Coqueluche, &c.*)

Marie M. Lamontagne (wife of C. E. Brien Desrochers), Montreal, Que., 15th August, 1884; 5 years.

Reclame.—La composition de matières, ci-dessus décrite, pour être employée comme remède dans les maladies des voies respiratoires, consistant en miel, eau, gomme d'épinette dissoute dans l'alcool, huile d'olive et menthe poivrée, dans les proportions indiquées.

No. 19,989. Composition for Sore Eyes.

(*Composition pour le Mal d'Yeux.*)

Marie M. Lamontagne (wife of C. E. Brien Desrochers), Montreal, Que., 15th August, 1884; 5 years.

Reclame.—La composition de matières, ci-dessus décrite, pour être employée comme remède pour la guérison des maux d'yeux, consistant en miel, sucre de plomb et l'huile de résine, dans les proportions indiquées.

No. 19,990. Composition for Cholera, Diarrhoea, &c. (*Composition pour le Choléra, Diarrhée, &c.*)

Marie M. Lamontagne (wife of C. E. Brien, Desrochers), 15th August, 1884; 5 years.

Reclame.—La composition de matières, ci-dessus décrite, pour être employée comme remède pour la guérison du choléra, de la diarrhée et autres maladies des intestins, consistant en noix, muscade, poivre blanc, eau et eau-de-vie, dans les proportions indiquées.

No. 19,991. Combined Wick Adjuster and Trimmer for Lamps. (*Appareil pour Arranger et Moucher les Mèches des Lampes.*)

John B. Deeds and William Mack, Terre Haute, Ind., U. S., 15th August, 1884; 5 years.

Claim.—In lamps and lanterns, a combined wick adjuster and trimmer formed of a single piece of metal, bent in the form and manner described, and having outwardly projecting teeth for engaging the wick, and terminating in the crooked portion for trimming the wick, substantially in the manner set forth.

No. 19,992. Horse Collar. (*Collier de Cheval.*)

Robert Porter, Ottumwa, Iowa, U.S., 15th August, 1884; 5 years.

Claim.—1st. In a horse collar, the double flange formed integral with the face and back of the collars, and extending around the belly or the bellies and other parts, and having the margins of the face and back outside the shaping seam united or connected, substantially as described. 2nd. In a horse collar having a double flange, a folded welt fastened to, between or over the edges of the back and face of the collar, substantially as described. 3rd. A horse collar having an enlarged part at the top of the collar, stuffed independently of the bellies, substantially as described. 4th. A horse collar having one or more seams sewed with metals, substantially as described. 5th. A horse collar having the front and back of the bellies made in one piece of leather or similar material, substantially as described. 6th. A horse collar having the coverings of the rim and bellies all in one piece, substantially as described. 7th. A horse collar having the covering of the rim partly in one piece with the face, and partly in one piece with the back, substantially as described. 8th. In a horse collar, the flange on the rim, substantially as described.

No. 19,993. Window for Railway Cars.

(*Croisée de Char de Chemin de Fer.*)

Mann's Boudoir Car Company, (Assignee of William D. Mann), New York, N.Y., U.S., 15th August, 1884; 5 years.

Claim.—1st. A window sash, packed by means of strip, covered with plush or like yielding material, and applied to the inner edges of the sash, substantially as herein shown and described. 2nd. A packing for car windows, consisting of a strip G covered with plush or like material, recessed into one member and fitting against the opposite face of another member, where a tight joint is to be formed, substantially as herein described. 3rd. The bevelled sill-cap I and plush-covered strip K, substantially as herein shown and described, for packing the lower part of the sash.

No. 19,994. Saw Mill Dog. (*Clameau de Scierie.*)

William Gowen, Wansan, Wis., U. S., 15th August, 1884; 5 years.

Claim.—1st. The combination, in a saw-mill dog, of two sets of dogs pivoted to the standard or dog plates, one set of working up and the other set working down, the vertically sliding bars B, B' connected with said dogs, and the sector lever D pivoted to one of said sliding bars and engaging with a rack on the other, substantially as and for the purposes set forth. 2nd. In a saw-mill dog, the combination, with a standard A, of the downwardly working dogs a, a', the upwardly working dogs a', a', sliding bars B, B', lever D pivoted to one of said sliding bars and provided with cog-toothed sector N, which engages with a rack on the other sliding bar, and dog bars C, C' connecting said dogs and provided with lugs o, o', which slide in transverse slots or grooves in said sliding bars B, B', substantially as and for the purposes set forth. 3rd. The combination, in a saw-mill dog, of a standard A, the vertically sliding bars B, B', the downwardly working dogs a, a' pivoted to the standard and connected with the sliding bar B, the upwardly working set of dogs a', a', also pivoted to the standard and connected with the sliding bar B', and lever D pivoted to one of said sliding bars and travelling therewith, and connected with the other sliding bar, substantially as and for the purposes set forth. 4th. In a

saw-mill dog, the combination of the sliding bars B, B₁ provided with racks or notches in their rear edges, the two sets of dogs a, a and a₁, a₁ pivoted to the standard, one set connected with one of said sliding bars and working down, and the other set connected with the other sliding bar and working up, lever D connected with each of said sliding bars, and the spring catches d, d, which engage with the racks or notches in said sliding bars, substantially as and for the purposes set forth. 5th. The combination, in a saw-mill dog, of the dogs a, a, a₁, a₁, sliding bars B, B₁ connected therewith and provided with a series of notches in their rear edges, lever D pivoted to one sliding bar and provided with cog-toothed sector N which engages with rack P on the other sliding bar, stops d, d, springs F, F and the trip bar E, substantially as and for the purposes set forth. 6th. The combination, in a saw-mill dog, of two sets of dogs a, a and a₁, a₁ pivoted to the standard and working in opposite directions, sliding bars B, B₁, each provided at its rear edge with a notch e, lever D pivoted to one of said sliding bars and connected with the other, and spring catches d, d, which engage with said notches and lock both set of dogs with their points projecting a short distance in advance of the face of the standard, substantially as and for the purposes set forth.

No. 19,995. Electric Lamp. (*Lampe Electrique.*)

Elihu Thomson, Lynn, Mass., U. S., 15th August, 1884; 5 years.

Claim.—1st. The combination, with the break or friction disk W, geared to the carbon carrier, of the spring or equivalently actuated pivoted friction toe or clutch, normally bearing against the outer periphery of the disk a fixed stop arranged in the path of the friction toe or clutch and mounted on a fixed portion of the frame, and a support for said pivoted clutch connected with the regulating magnet. 2nd. The combination, substantially as described, of a controlling electro magnet in a derived circuit, an electro-magnet in the main circuit for operating the regulating device, a high resistance wire forming a portion of a derived circuit around the latter electro-magnet, and contact surfaces and points governed by the controlling electro-magnet, whereby more or less of the length of said high resistance wire may be interposed in the derived circuit around the main circuit or regulating electro-magnet, substantially as described. 3rd. In an electric lamp, a controlling train, a screw V and lever J, in combination with a dash pot D, as described. 4th. The combination, in an electric lamp, of a feed controlling coil or electro-magnet, a variable or adjustable resistance in a branch circuit around the same, for varying the said magnets power, and a derived circuit magnet or coil in a derived circuit around the arc controlling said resistance. 6th. The combination in an electric lamp, of a feed regulating magnet, a variable resistance controlling the flow of current in the coils of such magnet, so as by its variations to vary the power thereof, and suitable means independent of said magnet for automatically operating said resistance in accordance with changes in the length of arc, whereby the feed of the carbon may be governed. 6th. The combination in an electric lamp, of a main or principal magnet, a variable resistance in a branch around coils of said magnet, for controlling the flow of current in said coils, and thereby varying the power of the magnet, and means for varying said resistance in accordance with changes in the length of arc.

No. 19,996. Spring Bed Bottom.

(*Sommier Elastique.*)

Obed L. Fuller, Marseilles, Ill., U. S., 15th August, 1884; 5 years.

Claim.—In a double spring bed bottom, the slats A held together at the head by slat C placed underneath, and slat D placed on top at the foot, in combination with slats E, F, G and their springs B, and the combination of slats A, C, D and their springs, with slats H, I and their springs B arranged on slats E, between slats F and G and their springs, substantially as described.

No. 19,997. Snow Plough. (*Chasse Neige.*)

James H. Russell, St. John. N. B., 15th August, 1884; 5 years.

Claim.—1st. The combination, with the sides of the plow, of the curved spongings B applied thereon, and the sheathing C, supported thereby at its margin to cut wider than the plow itself, substantially as described. 2nd. In a snow plough, the long coupling-bar F projected far forward, and connected to the frame-timber F₁ at a point forward of the centre of the plow, substantially as described. 3rd. The combination of the coupling-bar F, and the frame-timber F₁ united by the semi-circular socket-joint connection G, G₁, substantially as specified for the purpose set forth.

No. 19,998. Bottling Apparatus.

(*Appareil pour Embouteiller.*)

Edward M. Turner, Knoxville, Tenn., U. S., 15th August, 1884; 5 years.

Claim.—1st. In a bottling apparatus, the combination, with the can body or reservoir, a removable tray having a removable pump, and a hood hinged to cover the same, substantially as described. 2nd. In a bottling apparatus, the combination, with the removable tray provided in its bed with a collar socket having an annularly formed interior groove, and a slot out from its edge to meet the groove, of cylinders, constructed and arranged substantially as described, the discharge pipe, the disc secured upon the latter and provided near its edge with a downwardly projecting sleeve or flange, braced at its lower edge to the discharge pipe, and provided with an exteriorly placed projecting stud to enter and engage the aforesaid slot and interior groove, as described and for the purposes set forth.

No. 19,999. Vehicle Axle. (*Essieu de Voiture.*)

Moses J. Klopp and Joseph O. Thérion, Minneapolis, Minn., U. S., 16th August, 1884; 5 years.

Claim.—1st. The hollow metallic axle, constructed on its interior with the concealed pendent bridge 17, in combination with the truss-rod 18, bearing against the bridge and having its extremities welded

directly to the interior of the axle at the end or spindle portion thereof, substantially as described. 2nd. A hollow metal axle, consisting of two vertical webs 2, disconnected at their lower edges to provide a bottomless body, and united at their upper portions by a flat-faced web to support the squared wooden body 15, said axle having a pendent bridge piece within it, in combination with a truss rod 18, substantially as described. 3rd. A hollow metallic axle composed of the top web 3 and vertical webs 2, disconnected at their lower edges to provide a bottomless body, and constructed with interior bridge-piece 17, in combination with the truss-rod 18 resting against the bridge, and having its ends welded to the interior and portions of the axle, substantially as described. 4th. The combination, with the angular axle having the attached wooden body 15 and the tapering spindle of the axle-skins 5 constructed with the interior projecting annular bearings 7, 7, at the inner and outer ends respectively, and the annular bridge-piece 6 centrally between the said end bearings, to create the two intervening annular spaces 8, said skein having at its inner end the box fitting the annular axle, and provided with a rib 13 entering the wooden body of the axle, substantially as shown and described.

No. 20,000. Flooring for Buildings, &c.

(*Parquetage pour Bâtisses, &c.*)

Daniel Ham, Iowa, Iowa, U. S., 16th August, 1884; 5 years.

Claim.—1st. A floor for buildings, skating rinks, dancing halls and other structures, composed of an under layer of sand and a surface of metal plates, substantially as and for the purpose set forth. 2nd. A floor composed of a base consisting of intermixed sand and matting, or fibrous or porous material, and a material and a metallic upper surface, substantially as and for the purpose set forth. 3rd. A floor composed of a base consisting of an under layer of sand, a layer of intermixed sand and matting, or fibrous or porous material superimposed upon said bottom layer of sand, and a top layer of metal plates, substantially as and for the purpose set forth.

No. 20,001. Shield and Blotting Pad.

(*Garde-Main et Blotting*)

Miles R. B. Cowan, Windsor, Ont., 16th August, 1884; 5 years.

Claim.—1st. A blotting pad A, substantially in the form shown, in combination with a flexible strap secured thereto, by means of which such pad is removably secured to the wrist of a writer, substantially as and for the purposes described. 2nd. In combination with the blotting pad described, and with the flexible strap, the piece C interposed when the device is in place between the hand of the wearer and the blotting pads, substantially as set forth.

No. 20,002. Sheet Metal Plug for Metal Vessels or Packages. (*Couvercle Métallique pour Ustensiles ou Boites Métalliques.*)

John F. Ross, Toronto, Ont., 16th August, 1884; 5 years.

Claim.—An improved plug lid or stopper, a sheet-metal disc stamped so as to form a dish having sides at about right angles to the bottom, and an outwardly projecting flange around the top edge of the side so formed, in combination with a ring stamped into a form, substantially corresponding inversely with that of the lid and secured to the mouth of the package or vessel, the relative diameter of the sides of the lid and ring being such that, under great pressure, they may be compressed into or on to each other, so as to form a tight joint between the two, substantially as and for the purpose specified.

No. 20,003. Use and Manufacture of Stencil Plates for Graining and Imitating Wood, Marble, &c. (*Fabrication et Emploi des Patrons Planches pour Peindre et Imiter le Bois, le Marbre, &c.*)

John J. Callow, Cleveland, Ohio, U. S., 16th August, 1884; 5 years.

Claim.—1st. A stencil plate for graining purposes, made of several pieces of metal or other suitable material cut out with roller or set dies, joined so as to form one continuous plate, substantially as set forth. 2nd. A stencil plate to imitate the grain of woods or marbles, having the braces or ties F, B integral therewith, forming symmetrical lines with the pattern parts thereby joined, as herein described and specified. 3rd. A stencil plate A B F made by depositing metal in a perforated or other form on glass, porcelain, marble or other non-conducting surface by means of electro bath, as herein described and specified. 4th. A stencil plate "A" "F," with the surfaces corrugated to prevent the plate sucking off the color while wet, on the surface of the work to be grained, and also to facilitate the sliding of the stencil over the said wet color without injury to it, substantially as described. 5th. The combination of the comb D cloth E, with plate A B F, the holder C for graining purposes, all combined as above set forth and fully described.

No. 20,004. Feed Water Heater.

(*Réchauffeur de l'Eau d'Alimentation.*)

Charles H. Magoon, Muskegon, Mich., U. S., 16th August, 1884; 5 years.

Claim.—1st. The combination of the exhaust-pipes of a locomotive, with a feed water heater consisting of a case or chest, and circulating pipes for the feed water, and steam inlet pipes leading from each of the exhaust pipes of the locomotive to the said case, and check valves within the said pipes opening towards the case, substantially as and for the purpose set forth. 2nd. In a feed water heater, the combination of the chest or case to receive steam, with the circulating pipes for the feed water, the said pipes being connected at the ends of the case by elbows resting in contact with one another, and with the walls of the case for supporting the said circulating pipes, substantially as described. 3rd. The combination of the exhaust pipes of the locomotive, with the heater case and circulating pipes for feed water

therein, the steam inlet pipes *c, c1* leading from the exhaust pipes to the case, and the outlet pipe *i* leading from the said case into the smoke-box of the engine, substantially as described. 4th. The combination of the case *a*, circulating pipes *e* therein, flanged elbows *i* connecting the said pipes and having their flanges in contact with one another, the said elbows being provided with lugs *i2* affording a support for the said pipes from the interior of the case, substantially as described.

No. 20,005. Revolving Sad Iron.

(*Fer à Repasser Tournant.*)

Adélaré F. Martel, Montreal, Que., 16th August, 1884; 5 years.

Claim.—1st. In a revolving iron, the cylindrical projections I in front of iron A provided with pivot holes J, spindle L provided with spring N and thumb piece P, as shewn and described for the purpose set forth. 2nd. In a revolving iron, the cylindrical projection S1 provided with bracket R and burner holder R1, and set screw T, as shewn and described for the purpose set forth. 3rd. In a revolving iron, the handle support H having brackets M, M, collar O and mortised projections Q1, as shown and described for the purposes set forth. 4th. In a revolving iron, the handle support G having collar S, bracket R and burner handle R1 with thumb screw P, as shown and described and for the purpose set forth. 5th. In a revolving iron, the cylindrical projection I provided with shaft tube K, as shown and described for the purpose set forth. 6th. In combination, with a revolving iron, the suspended tank when provided with a tube U, as shown and described for the purpose set forth.

No. 20,006. Lamp. (*Lampe.*)

Alexander Ramage, Russell Gulch, Col., U. S., James D. Ramage, Agnes, and Nicholas Swan, Ditchfield, Que., 16th August, 1884; 5 years.

Claim.—1st. A lamp having a base or foot A, an oil-fount B secured to the base, a removable cover or top for the oil-fount provided with a screw-collar *k* for the connection of the burner, and means to secure the said cover to the oil-fount, as set forth. 2nd. A lamp having a base or foot A, an oil-fount B secured to the base, a removable cover or top for the oil-fount provided with a screw-collar *k* for the connection of the burner, a tube J depending below the collar and having its lower end guarded, and means to secure the said cover to the oil fount, as set forth. 3rd. A lamp having an oil-fount provided with an upward projecting tube C secured in the bottom, said tube having its upper end open, a removable cover or top for the oil fount provided with a collar *k* and a tube J depending below the collar, and said tube adapted to set down into the open upper end of the oil-fount tube, as set forth. 4th. A lamp having an oil-fount provided with laterally projecting lugs *h*, in combination with a hood provided with an intumed flange having notches *h1*, as set forth.

No. 20,007. Method of Adjusting Buttons to Fabrics. (*Mode d'Assujétir les Boutons aux Tissus.*)

George W. Prentice, Providence, R. I., U. S., 16th August, 1884; 5 years.

Claim.—That improvement in the art of securing a one-pronged button to fabric, which consists in passing the prong of the button through the fabric, and bending or curling the projecting end of the prong over upon itself, back through the fabric upon the upperside thereof, forming a loop or eye of said prong in the fabric, substantially as herein set forth.

No. 20,008. Furnace. (*Fourneau.*)

Horace W. Peaslee, Malden Bridge, N. Y., U. S., 16th August, 1884; 5 years.

Claim.—1st. The combination of the supply pipe for receiving cold water independently of a steam boiler, a series of water pipes supporting the fire grate and alternately connected with each other at one end, and a discharge pipe connected with one of the series of water pipes, and a shower pipe or pipes for receiving the discharge water, substantially as described. 2nd. In a furnace for steam boilers or the like, a series of water pipes arranged to support the fire grate and constructed to communicate with each other alternately at the opposite ends, in combination with a supply pipe connected to the water pipe at one end of the series, a discharge pipe connected to the water pipe at the other end of the series, and a shower pipe or pipes arranged to extend from the discharge pipe horizontally below the water pipes, substantially as shown and described.

No. 20,009. Metal Working Machine.

(*Machinè pour Travailler les Métaux.*)

Gilbert McDonald, Augusta, Ks., U. S., 16th August, 1884; 5 years.

Claim.—1st. The lever D D1, coupling E and movable tool C, combined and arranged to operate in combination with the fixed jaw or die A, substantially in the manner and for the purposes set forth. 2nd. The wedge J, interposed between the power lever and the tool, substantially as and for the purposes set forth. 3rd. The power lever having cogs formed upon it, and the wheel G formed with cogs, in combination with the interposed cogged wedge J, substantially as described. 4th. The lever D1 pivoted in front of the pivot of the lever D, and coupled to the lever D1 by the coupling E and the rod L, substantially as described. 5th. The tool C, provided with the wheel G, in combination with the lever D D1 coupled together, substantially as set forth. 6th. The lever D coupled to the lever D1 by the S-shaped coupling E and bent rod L, in combination with the fixed jaw A and movable tool or jaw C having friction wheel G, the lever D1 being pivoted in front of the pivot of the lever D, substantially as described.

No. 20,010. Button Fastener. (*Queue de Bouton.*)

Eleazar Kempshall, New Britain, Ct., U. S., 16th August, 1884; 5 years.

Claim.—1st. A sheet metal button fastener, consisting of a head bar or base having an edgewise bearing surface, and an integral prong projecting from said bearing surface in the same plane with said head bar or base, substantially as described and for the purpose specified. 2nd. A button fastener, consisting of an integral head bar or base and prong or hook both in the same plane, and with the cut edge of the metal serving as the engaging surface for the shank eye of a button, substantially as described and for the purpose specified. 3rd. A sheet metal button fastener, consisting of an integral head bar or base and a prong or hook, said base having an edgewise bearing surface from which said prong or hook projects, substantially as and for the purpose specified. 4th. A sheet metal button fastener, whose base has an edgewise bearing surface and inwardly projecting end, substantially as described and for the purpose specified.

No. 20,011. Buckboard Waggon.

(*Wagon Planche.*)

William Lockwood, Madrid, N. Y., U. S., 16th August, 1884; 5 years.

Claim.—In a buckboard waggon, the combination, with the buckboard *a*, and the front bolster *f*, and axle *h* and the hind axle *l*, of the cross pieces *b, j* secured to the buckboard, a short distance inwardly from its ends, the central springs *g, k*, one secured to the underside of the front axle *h* and the cross piece *b*, and the other to the same side of the hind axle *l* and the cross piece *j*, the parallel side springs *c, c* connected to the cross pieces *b* and above the front axle to the bolster *f*, and the rear oblique bars or braces *m, m* secured to the cross piece *j* and hind axle *l*, as shown and described and for the purpose set forth.

No. 20,012. Buggy Top. (*Couverture de Voiture.*)

Albert M. Cochran, Terre Haute, Ind., U. S., 16th August, 1884; 5 years.

Claim.—1st. In a buggy top, the combination, with the bows *b1, b2* having offsets *e1*, and the rock shaft, of the jointed side brace D movably connected at its upper end to the bow *b* by pins turning in said offsets, and rigidly attached at its lower end to the rock shaft, and the horizontal jointed side brace E movably connected at its forward end to the bow *b* by the same pin while its rear end is similarly connected to bow *b2*, all substantially as described and shown. 2nd. In a buggy top, the bows *b, b1, b2, b3* pivoted to the forward end of the side rails, said bows *b1* and *b2* provided respectively with the offsets *e1, e2*, in combination with brace E pivoted at its rear end in the offset *e2* and rigidly attached at its forward end to a pin loosely journalled in offset *e1*, and the brace D similarly attached at its upper end to said pin, while its lower end is rigidly attached to the rock shaft extending across the rear of the seat, substantially as and for the purpose described.

No. 20,013. Nail-Holding Attachment for Hammers. (*Appareil pour Saisir les Clous à Marteler.*)

George F. Barber, De Kalb, Ill., U. S., 16th August, 1884; 5 years.

Claim.—1st. The combination, with the spring clamp E and spring jaws "G, G", of the tongue F attached to the spring clamp and constructed at its rear end to enter the handle of the hammer, for the purpose of anchoring the clamp on the head of the hammer, substantially as specified. 2nd. The combination, with the handle "A" and hammer head "B", of the wedge or stop "C" in the outer end of the handle, the removable spring clamp E constructed to partly encircle and hug the nose of the hammer, the nail-holding jaws "G, G" attached to the clamp, and the tongue F constructed to enter the outer end of the handle and to anchor the clamp to its place, essentially as and for the purposes herein set forth.

No. 20,014. Fire-Escape. (*Sauveteur d'Incendie.*)

Samuel Beltz, Wilmington, Del., U. S., 16th August, 1884; 5 years.

Claim.—The adjustable fire-escape described, consisting of a rope ladder provided at one end with a cross bar B, and guard ropes C to attach and hold the same in position, and the opposite ends of the side ropes supplied with fastening and tightening devices having hooks A1 which engage eyes E secured in the pavement, in the manner described, and the reel D with the lever F and means whereby the reel can be operated, substantially as described.

No. 20,015. Gavelling Mechanism for Grain Binders. (*Mécanisme d'Engerbage pour Lieuses à Grain.*)

The Toledo Mower and Reaper Company, (Assignee of John S. Davis,) Toledo, Ohio, U. S., 16th August, 1884; 5 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of the packer shaft, the packer-carrier, the packer-arms freely pivoted to the carrier, the open-periphered sectional packer-casing supported on the packer-shaft, and means for controlling the vibration of the packer-arms, for the purpose described. 2nd. The combination, substantially as hereinbefore set forth, of the rotary packer-shaft, the packer-carrier, the stationary sectional packer casing open at its periphery, the freely pivoted packer arms and means by which they are projected from their casing to act upon the grain and then allowed to gradually withdraw within the casing, for the purpose described. 3rd. The combination, substantially as hereinbefore set forth, of the packer-shaft, the packer-carrier having the stops, the stationary open-periphered sectional casing, the cam carried by one section of the casing, and the freely pivoted packer-arms having controlling lugs and stop-shoulders operating in connection with the casing-cam and the carrier-stops, for the purpose described. 4th. The com-

ination, substantially as hereinbefore set forth, of the packer-carrier, the packer-arms, the plates constituting the stationary sectional packer-casing supported on the packer-shaft, and having the eccentric edge projections, and means for controlling the vibrations of the packer-arms, for the purpose hereinbefore set forth. 5 h. The combination, substantially as hereinbefore set forth, of the rotary packer-shaft, the shaft of the binder arm and the bracing connection between said shafts, for the purpose described. 6th. The combination of the packer-shaft, the packer-casing, the frame tube or sleeve of the binder-arm shaft, and the braces connecting the packer-casing and frame-tube, substantially as and for the purpose hereinbefore set forth. 7th. The combination of the packer-shaft, the packer-casing, plates H, I, the shaft of the binder-arm, its frame-tube, the lug thereon and the braces T, U and rod U connected to the casing-plates and secured to the lug, substantially as and for the purpose hereinbefore set forth. 8th. The combination, substantially as hereinbefore set forth, of rotary packing mechanism, the parting-arms, the binder-arm, its shaft and means by which the packing mechanism is braced from the binder-arm shaft, for the purpose described. 9th. The combination, substantially as hereinbefore set forth, of rotary packing mechanism, its casing supported on the packer-shaft, the cut-off and gravel-isolating mechanism also supported on the packer-shaft, the binder-arm and its shaft with which the casing on the packer-shaft has bracing connection, for the purpose described.

No. 20,016. Iron Working, Planing and Shaper Machine. (*Machine pour Travailler, Raboter et Shéper le Fer.*)

William R. Farmer and Charles A. Stockton, St. John, N.B., 16th August, 1884; 5 years.

Claim.—1st. The tool-holder B B B, and the combination (Fig. 3 and 4) of the same, with the shaper and planer tools A, A, A, and also with the set screws E, E, substantially as and for the purpose hereinbefore set forth. 2nd. The application of the stop pin G to the stantion K K and the tool post H, substantially as and for the purpose hereinbefore set forth.

No. 20,017. Method of Coating Tacks. (*Méthode pour Plaquer la Broquette.*)

Ephraim S. Morton, Plymouth, and Samuel Loring, Duxbury, Mass. U. S., 16th August, 1884; 5 years.

Claim.—The mode described, of coating metallic articles with copper, the same consisting in subjecting such articles and an acidulated solution of sulphated copper to agitation together, substantially as specified.

No. 20,018. Paper Bag Holder. (*Porte Sac de Papier.*)

Calvin M. Ruland and Curtis B. Martin, Rockton, Ill., U. S., 16th August, 1884; 5 years.

Claim.—1st. In a bag-holder, the combination of a bracket having a curved hook, and a pivoted lever weighted at the end and adapted to set over the hook to retain the bag thereon, substantially as specified. 2nd. In a bag holder, the combination of a series of brackets provided with curved hooks and weighted retaining levers, and the spring-pressed bails adapted to be operated to hold the bags, as set forth. 3rd. The combination, with the brackets and their hooks, of the weighted levers and the bails, and operating springs arranged in a series gradually increasing in size, as and for the purpose set forth.

No. 20,019. Machine for Pressing Gimp. (*Machine pour Presser le Brandebourg.*)

John S. Lynch and Mark A. Heath, Providence, R. I., U. S., 16th August, 1884; 5 years.

Claim.—1st. In a machine for making gimp, the combination, with two cylindrical rolls having axial bores and passages leading therefrom, for conveying steam to the undersides of the dies, of removable dies secured to said rolls, and supply and exhaust pipes communicating with the ends of said rolls, substantially as set forth. 2nd. In a machine for manufacturing gimp, the combination of two cylindrical rolls, each having a longitudinal passage for steam or other heating agent, and provided with an annular recess over which a die is removably secured, and which communicates with the steam passage of the roll and forms a steam space, substantially as set forth. 3rd. The combination, with two rolls provided interiorly with passages, as described, and means for revolving both simultaneously, of removable dies secured on the rolls and pipes for conveying steam against the inner surface of said dies, and pipes for conveying steam from the rolls, substantially as described. 4th. The combination, with two rolls provided interiorly with steam passages *a, a'* and *a''* and the spaces E, of removable dies secured over said spaces by means of a nut and collar, and supply and exhaust pipes, substantially as set forth.

No. 20,020. Monkey Wrench. (*Clé à Ecrou*)

Frederick B. Wilkinson, (Administrator of the Estate of Leonard Wilkinson,) London, Ont., 18th August, 1884; 5 years.

Claim.—The combination and arrangement of the spring G, with the movable jaw F provided with the roughened enlargement or grip H, dog E, bar B and ratchet D, constructed as shown and described and for the purpose specified.

No. 20,021. Combined Check and Stop Valve. (*Souape de Sûreté et d'Arrêt.*)

James H. Blessing, Albany, N.Y., U.S., 18th August, 1884; 5 years.

Claim.—1st. In a combined check and stop valve, the combination, with a valve casing containing an inner valve chamber and a parti-

tion formed between said casing and the wall of its inner valve chamber, for separating the induction and eduction openings of said casing, the said inner valve chamber being provided with two valve seats, arranged one above the other, as herein described, of two independent valves entirely disconnected from each other, and arranged as herein set forth, the lower of said valves being provided with means whereby it can be forcibly retained upon its valve seat, as and for the purpose herein specified. 2nd. The combination, with a valve casing A, containing an inner valve-chamber B and a partition C formed as herein described, of the removable valve seats D and caps G and I, constructed substantially as described, and adapted to secure the valve seats D, as herein specified. 3rd. The combination, with a valve-casing A adapted to contain two independent valves, substantially as herein described, of the removable and interchangeable valve seats D, each consisting of a flat annular flange, provided with a cylindrical flange *d*, as and for the purpose specified.

No. 20,022. Rowing Gear. (*Appareil pour Ramer.*)

James W. Rutter, Wakefield, Mass., U.S., 18th August, 1884; 5 years.

Claim.—1st. A rowing gear consisting of mechanism for supporting an oar and reciprocating it or moving it backward and forward relatively to the water, a revolvable row lock and a spring for automatically lifting and feathering it on the recover, so as to cause its blade in one stroke to pass edgewise, and in the next to pass broadside with respect to such water. 2nd. A rowing gear consisting of mechanism for supporting an oar, and reciprocating it or moving it backward and forward relatively to the water, mechanism for varying or adjusting its inclination or dip, and a spring for automatically lifting up and feathering it on the recover, so as to cause its blade in one stroke to pass edgewise, and in the next to pass broadside with respect to such water. 3rd. The combination of the crane B, adjustable lever C, ball-socket piece F at the inner end of lever C, rowlock D at the outer end of shaft *e*, and its operative spring E secured at one end to the bearing *d*, and at the other to the oar, arranged and adapted substantially as set forth. 4th. The combination of the crane B, the adjustable lever C provided at one end with the ball-socket piece F, and at the other with stops *h* and *i*, as described, and the revolvable row-lock D, the oar O and actuating spring E, secured in one end to the bearing *d*, and to operate with an oar, essentially in the manner as represented. 5th. The combination of the crane B, the adjustable lever C, the revolvable row-lock D and its operative spring E, secured at one end to the lever C, and at the other to the oar. 6th. The combination of the post A with the two cranes B and B¹, and a revolvable row-lock applied to each of such cranes and provided with a spring for turning it, as set forth. 7th. The combination of the post A with the two cranes B and B¹, and a lever C, a revolvable row-lock and its operative spring adapted and applied to each of such cranes, substantially and to operate as set forth.

No. 20,023. Art of Burning Brick. (*Art de Cûire la Brique.*)

C. F. Theodore Kandeler, Chicago, Ill., U.S., 18th August, 1884; 5 years.

Claim.—1st. The process of burning material progressively in a burning and cooling kiln, which consists in piling and burning such material in a section of kiln, and while the said material is burning in the said kiln, adding fresh sections of green material, and supplying in such fresh sections, as they are formed, sections of new kiln, including new side-walls and new covering, substantially as and for the purpose set forth. 2nd. The combination, with a progressive burning and cooling kiln, of a platform over and above the top of the kiln, for the purpose specified.

No. 20,024. Process for Tanning. (*Procède de Tannage.*)

Jacob G. Stroh, Waterloo, Ont., 18th August, 1884; 5 years.

Claim.—1st. A hollow cylindrical vessel or tanning-wheel A arranged to contain the hides and tanning liquor, and caused to revolve, substantially as and for the purpose specified. 2nd. A tanning-wheel A provided with hollow axes C, suitably journaled, one of the axes being provided with the pipe D leading to the leach F, and the other axle being provided with a pipe E leading to the pump G, which is itself connected to the leach, as specified, in combination with mechanism for imparting a rotary movement to the tanning-wheel A, substantially as and for the purpose specified. 3rd. The tanning-wheel A provided with a man-hole B capable of being hermetically sealed, and hollow axes C suitably journaled, so that the wheel A may be revolved, in combination with pipes leading from the hollow axes C and connected with the elevated reservoir containing tanning liquor or other fluid, substantially as and for the purpose specified.

No. 20,025. Machinery for Sawing Lumber. (*Scierie Mécanique à Bois.*)

Charles W. Gage and Adelbert S. Gage, Homer, N. Y., U. S., 18th August, 1884; 5 years.

Claim.—1st. In a machine for sawing or cutting lumber from a log in convolute layers, mechanism, substantially as described, for simultaneously rotating and gradually elevating the log, said mechanism consisting of a screw or screws for elevating, and a worm or analogous means for rotating said parts, engaging with the log support and operated through proper mechanical connections by the reciprocation of the saw slide, as set forth. 2nd. In a machine for sawing veneers, the combination of the reciprocating rod G having the inclines *p, p'*, feed lever G¹, dog *p'*, ratchet for it to work upon, and mechanical connections to log-support for rotating the log, substantially as set forth. 3rd. In a machine for sawing veneers, the combination of the reciprocating feed-rod G having the inclines *p, p'* at both ends, pivoted feed lever G¹ and connections to the log-supports, for rotating the same, with gear and shaft connections to the screws C, C¹, whereby the log is both rotated and elevated at the same time

by the reciprocation of the rod G, substantially as set forth. 4th. In a machine for sawing veneers from a log in convolute layers, wherein the log is fed by being elevated and rotated simultaneously, the combination of the reciprocating feed-rod G having the inclines *g, a*, and a feed-lever G₁ secured to a part of the machine, which is elevated and lowered with the log, so that the throw of the lever may be varied as the radius of the log is changed, and the said log caused to be fed with equal rapidity at all times. 5th. The combination of the feed-lever G₁, feed-dog *g* attached thereto, and ratchet on which it operates, and means for operating said lever, of the regulator J having the slot *j*, set block *j*₁, and screw *j*₂, for arbitrarily regulating the throw of the lever, as set forth. 6th. In a machine for sawing lumber from a log in convolute layers, the combination, with the saw or cutter and supporting frame, of the hooks *k, k*, placed above the logs, for receiving the edge of the lumber as it leaves the log, substantially as set forth. 7th. A saw-slide provided with the adjustable plate I, resting on a plain surface on the top thereof, said plate having the slots *s, s*, adapted to receiving the pinching screws *u, u*, and the slide being provided with the set screws I₁ passing through the rear wall thereof, behind the adjustable plate and serving to set said plate. 8th. A blade for cutting wood, provided with two sets of cutting teeth, segmental or semicircular in form, and an intermediate clearing tooth formed with two acute angled points set in opposite directions toward the said cutting teeth, being separated from the latter by deep concave recesses, substantially as set forth.

No. 20,026. Fan. (*Ventilateur.*)

George M. Capell, Passenham, and George S. Maobean, Bishopstoke, Eng., 18th August, 1884; 5 years.

Claim.—1st. In blast or exhaust fans, the employment on, and in a cylinder *a*, of the blades *b* on the exterior, and blades *c* on the interior, with ports *d* at or near their junction with the cylinder, substantially as described and illustrated in Figs. 1, 2, 3, 4, 7, 8, 9, 10, 11, 12, 13, 14 and 15. 2nd. In combination with the outer blades *b* and the inner blades *c*, and ports *d*, the method of adjusting and regulating the area of the ports, relative to the size of the suction pipe, as described and illustrated with reference to Figs. 5 and 6. 3rd. In blast or exhaust fans, the construction of a collecting cylinder closed at one end, and provided with port-holes and blades joining the edge on one side of the port-holes, and dipping towards the centre or boss, the curve of said blades corresponding, or nearly so, with the radius of the cylinder in which the ports are formed, and, when such blades are straight, the angle may be determined by bisecting the points formed as in the case of radial blades, substantially as and for the purpose hereinbefore described and illustrated. 4th. In an exhaust or blast fan, the combination of a disc provided with port-holes, collectors or displacers and scalloped peripheral band, or segmental hoods, for collecting or inducing currents of air, substantially as and for the purposes herein described and illustrated. 5th. In an exhaust or blast fan of the herein-described construction, the combination, with the collecting cylinder, of a disc provided with ports and collectors or displacers on the same side as the collecting cylinder, for inducing currents of air, as herein set forth and illustrated. 6th. In an exhaust or blast fan of the herein-described construction, the combination, with the collecting cylinder, of a disc provided with ports and buckets or collectors on the opposite side to the collecting cylinder, substantially as set forth and illustrated. 7th. The combination, with a collecting cylinder and disc, of an annular chamber connecting the port-holes in the cylinder with those in the disc, substantially as described with reference to Figs. 20 and 21 of the accompanying drawings.

No. 20,027. Combined Sulky Plough and Cultivator. (*Charue à Siège et Cultivateur Combinées.*)

Thomas Huddleston, Oakland, Man., 18th August, 1884; 5 years.

Claim.—1st. In a combined sulky plow and cultivator, the combination, with the central beam having laterally projecting arms, the upper one of which has upwardly projecting ends, of the arched bar pivoted to said ends of said upper arms, and secured about at its middle to the seat standard, the hook secured to a support at the rear end of the tongue, and the socket bar fastened to said upper arms and receiving the hook, substantially as and for the purpose set forth. 2nd. In a combined sulky plow and cultivator, the combination, with the tongue C and the centre-beam M, of the oleve J having horizontal slot, the clamp K L and the rigid bolt M, substantially as herein shown and described, whereby the forward end of the said centre beam is adjustably connected with the said tongue, as set forth. 3rd. In a combined cultivator and sulky plow, the combination, with the central beam having the laterally projecting arms, the upper ones of which are bent upwardly at their outward ends, the side beams connected to said arms, socket bar also secured to the latter, the seat standard pivoted to a support at the rear end of the tongue, the yoke or arched bar secured to the seat standard and pivoted to said upper ends of said upper arms, and the hooks secured to the support at the rear end of the said tongue and projecting into said socket bar, substantially as and for the purpose set forth. 4th. In a combined sulky plow and cultivator, the combination, with the central beam having laterally projecting arms, of the arched bar connected to the upper ends of said arms and rigidly secured to the seat standard, the latter being pivotally connected to a fixed support or bracket of the tongue, substantially as and for the purpose set forth. 5th. In a combined sulky plow and cultivator, the combination, with the angle plate or shovel beams connected together, and with the yoke or arched bar, which is connected to the arms of the central beam secured to the seat standard, said standard being pivoted and adjustably connected to said angle plate, substantially as and for the purpose set forth. 6th. In a combined sulky plow and cultivator, the combination, with the centre beam N and the side beams *o*, of the two pairs of U-bars W *o* and the clamping bolts *q*, substantially as herein shown and described, whereby the rear parts of the said beams are connected securely and adjustably, as set forth. 7th. In a combined sulky plow and cultivator, the combination, with the crank axle B, the hinged

tongue C and the plow beams N, *o*, of the angle bar *z*, the draft hook Y and the socket bar X, substantially as herein shown and described, whereby the main draft strain will be sustained, as set forth. 8th. In a combined sulky plow and cultivator, the combination, with the angle bar *z*, the plow beams N, *o* and the U-bars W, *p*, of the hinged arched bar *b*, the seat standard *c* and the hook bolt *e*, substantially as herein shown and described, whereby the plow beams can be readily levelled and will be securely held, as set forth. 9th. The combination, with the rotary colter R, of the hanger Q having slotted lower ends, and the plates T having lugs S projecting into the slots in the lower ends of the hangers, and supporting the journals of the colter, said plates T having slots in their upper ends which receive fastening bolts P, substantially as and for the purpose set forth.

No. 20,028. Locomotive Ash Pan.

(*Cendrier de Locomotive.*)

William H. D. Newth, Detroit, Mich., U. S., 18th August, 1884; 5 years.

Claim.—1st. A locomotive ash-pan, the bottom of which is formed with a series of dumping-slats, pivotally connected together and adapted to be opened and closed from the cab of the engine, each slat being provided with a flange J upon its upper face, substantially as and for the purposes set forth. 2nd. In combination with a locomotive ash-pan, the bottom of which is formed with a series of dumping-slats, pivotally connected together and adapted to be opened and closed from the cab of the engine, of a crank *g* attached to the leaf B₁, said crank extending downward, outward and upward at the side of the pan, as and for the purposes set forth.

No. 20,029. Steam and Water Boiler for Heating Purposes. (*Chaudière de Chauffage à la Vapeur et à l'Eau.*)

Edward Gurney and Charles Sellers, Toronto, Ont., 18th August, 1884; 5 years.

Claim.—1st. In a steam or water furnace, or boiler, for house-heating purposes, in which the heating surface is enlarged by a series of hollow cast-iron cylindrical sections placed over one another, as specified, the flues A, in combination with the water-spaces B, spaces F, hollow ring C and water flues D, as and for the purpose specified. 2nd. In a steam or water furnace or boiler for house-heating purposes, in which the heating surface is enlarged by a series of hollow cast-iron cylindrical sections placed over one another, as specified, the flues A, in combination with the water-spaces B, spaces F, hollow rings C and water-flues D, hand hole L, return pipe *E*, furnace G, smoke-box H, steam or water chamber I and heating pipes J, as and for the purpose specified.

No. 20,030. Road Scraper. (*Grattoir de Chemin.*)

William Ellis, Jr., North Lawrence, Ke., U. S., 18th August, 1884; 5 years.

Claim.—1st. The combination, in a road scraper, of a scraper proper pivoted in a suitable frame by journals, and provided with a disc having reverse shoulders located in parallel peripheral planes, as described, and bolts arranged and operating to respectively prevent the forward and rearward rotation of said disc, substantially as set forth. 2nd. The combination, in a road scraper, of a scraper proper pivoted in a suitable frame by journals, and provided with a disc having reverse shoulders, and two bolts arranged on the frame supporting the scraper proper, one operated by hand lever connections secured on the frame and the other automatically yielding, substantially as described. 3rd. The combination, in a road scraper, of a scraper proper having journals located at its sides, a notched disc secured to said scraper, a case secured on one side at the forward part of the supporting frame, and provided with an extension perforated to receive one of the journals, a bolt playing through said case and devices for operating the same, substantially as described. 4th. The combination, in a road scraper pivoted in a suitable frame by journals, and provided with a disc having reverse shoulders located in parallel peripheral planes, as described, of bolts arranged to respectively prevent the forward and rearward rotation of said disc, and handles pivoted at each side of the upper end of the frame and connected with said bolt devices, substantially as set forth. 5th. The combination, in a road scraper, of a scraper proper pivoted in a frame bolt, devices for locking it in its pivoted position, mechanism for disengaging said bolt devices, and means for locking said devices in their disengaged position, substantially as set forth. 6th. The combination, in a road scraper pivoted in a suitable frame by journals, and provided with outer brackets bolted to the sides of the same, of a disc having reverse shoulders located in parallel peripheral planes, as described, and bolts arranged to respectively prevent the forward and rearward rotation of said disc, substantially as set forth. 7th. The combination, in a road scraper, of a suitable frame provided with depending plates G, bent and arranged for the purpose set forth, a scraper proper pivoted in said frame, and provided with a disc having reverse shoulders located in parallel peripheral planes, as described, and bolts arranged to respectively prevent the forward and rearward rotation of said disc, substantially as set forth. 8th. The combination, with a road scraper, constructed and operating substantially as herein described, of a draft bail provided with extension *h*, for the purpose specified. 9th. In a reversible scraper, the side hubs C, C attached rigidly to the scraper and provided with recesses *c, c*, in combination with the side handles G, G, pivoted at their ends over the hubs and provided with spring catches and dogs H, H, substantially as shown in figures 5, 6 and 7 of the accompanying drawings.

No. 20,031. Telephone Switch Board.

(*Planche de Commutateur Téléphonique.*)

The Standard Electrical Works, Cincinnati, Ohio, (Assignees of Everlynd B. Hamlin, Chicago, Ill.), U. S., 18th August, 1884; 5 years.

Claim.—1st. A telephone switch-board, provided with a series of pin strips grouped in pairs, for connecting two selected lines with a

permanent line strip for each line, said pin and line strips being so arranged that any two lines shall be connected by inserting a metal pin in each pin strip of the pair indicating such lines, so as to connect said strips with the line strips to be joined. 2nd. The combination, with the independent line strips and each set of pin strips, of a disconnecting drop and line connected with said pin strips, and so arranged that any two telephone lines can be joined on the switch board through said drops, substantially as described for the purpose specified. 3rd. The combination, on a telephone switch board, of the call and telephone strip E, with the pin strips B and line strips H, substantially as described and for the purpose specified. 4th. The spring switches A₁, C₁, and their connections with the line and telephone, combined with the spring U for taking off the ground of the telephone and throwing the latter into the circuit of two lines, for the purpose specified. 5th. The combination of a series of telephone switch boards and the described connecting devices, whereby the combined boards are operated as one board, as herein set forth for the purpose specified. 6th. The combination, in a series of telephone switch boards, of the lines, the pins and the combination pin strips, whereby the lines of any one board of the series are joined to the lines of any other board or boards, while the independent operation of each board is preserved, substantially as described for the purpose specified. 7th. In a telephone switch board, the combination of several series of metallic plates, each in connection with an independent line with independent bars across each series, each series of plates and bars forming one section and switches to connect either line of one series with the bar or bars of its own section, and an intermediate switch to connect the bars of one section with the corresponding bars of another section. 8th. In a telephone exchange system, a series of connecting strips and a series of branch circuits connected each with a pair of said strips, in combination with line circuits and means for temporarily connecting any two line circuits with a pair of connecting strips. 9th. In an electrical system having a number of line circuits emanating from a central office, a branch circuit, in combination with means for temporarily connecting it, at opposite ends, with any two of the line circuits as required, and a switch for grounding said branch at an intermediate point. 10th. The combination of a series of circuits or conductors, of means for temporarily connecting any two of said circuits or conductors with each other, as required, through a branch and switch, mechanism for switching one or more central office instruments into and out of said branch. 11th. The combination, with a series of main levers, of a central office switch for connecting two of such lines for oral communication, apparatus included in such circuit to make the call or signal at the central office, and independent devices for connecting either line to pole changing apparatus for transmitting out-going signals.

No. 20,032. Device for Stretching Shoes.

(Appareil pour Elargir les Souliers.)

Horace Glines, Bridgeport, Ct., U.S., 19th August, 1884; 5 years.

Claim.—1st. In a device for stretching shoes, the stretching caps conformed in cross-section to the shape of the shoe, and pivoted on the extremities of curved bars, in combination with means for spreading said bars apart, and an adjustable heel-piece, substantially as set forth. 2nd. In a device for stretching shoes, the combination of the stock having, interiorly arranged therein, a travelling block, and provided with elongated slots at its edges, rolls pivoted within said stock, curved arms pivoted to said block and extending without said slots, caps pivoted to the outer extremities of said arms and conformed in cross-section to the shape of the shoe, threaded rod swivelled to the block and adapted to engage with the threaded rear extremity of the stock, follower nut running on said rod and heel-piece swivelly attached to said nut and depending therefrom, substantially as shown and described. 3rd. In a device for stretching shoes, the stretching caps conformed in cross-section to the shape of the shoe, substantially as set forth. 4th. In a device for stretching shoes, a heel piece swivelly attached to a follower nut turning upon a threaded rod, substantially as described.

No. 20,033. Valve. (Soupape.)

James H. Blessing, Albany, N.Y., U.S., 19th August, 1884; 5 years.

Claim.—The combination, with a valve casing A having a partition *a*, provided with an annular tongue *a*₂, and removable valve-seat B having an annular groove that fits over the annular tongue *a*₂, as herein described, of the bonnet C having a cage *c*, which forms an integral part of said bonnet, and is provided with openings *c*₁, as herein set forth, the said cage being adapted to bear upon the upper face of the removable valve seat B, so as to secure the latter rigidly in place, as herein specified.

No. 20,034. Apparatus for Distilling Water &c. (Appareil pour Distiller l'Eau, etc)

William Herrick, Grinnell, Iowa, U. S., 19th August, 1884; 5 years.

Claim.—1st. An apparatus for distilling water and other liquids, in which are combined a closed reservoir for containing and supplying the liquid to be distilled, and a boiler and a condenser arranged below said reservoir, together with pipes and ducts, organized and arranged to establish the communication between said boiler and condenser with the outside atmosphere and with the supply reservoir, substantially as described, whereby the boiler is automatically supplied with a shallow body of liquid, at an approximately constant level, the replenishing liquid is heated by its passage through the condenser before introducing it to the boiler, and an automatic constant supply of the distillate to and through the condenser is obtained, essentially as specified. 2nd. In an apparatus for distilling water and other liquids, the combination of the elevated close or air-tight reservoir A, the condensing tank or vessel B, arranged below said reservoir, and provided with a condensing worm or duct, establishing communication through the upper and lower portions of said vessels, a liquid supplying pipe or duct D, arranged to connect the reservoir A with the lower portion of the condensing tank, the boiler C also arranged below said reservoir, the pipe E arranged to supply, by gravity, the liquid to be

distilled from the upper portion of the condensing tank B to the bottom of the boiler, and the air pipe F, extending from the upper portion of the reservoir to nearly the bottom of the boiler, substantially as and for the purposes herein set forth.

No. 20,035. Universal Ball Joint.

(Joint à Rotule Universel.)

Alexey W. Von Schmidt, San Francisco, Cal., U. S., 19th August, 1884; 5 years.

Claim.—The combination of the portion C having a flange to which the pipe is joined by a similar flange, and the strengthening ribs, for the purpose set forth, the portion B adapted to enter the portion C, and the securing ring E, the portion C and the ring E, each having openings *a* for the reception of a packing ring, substantially as described.

No. 20,036. Water Jackets for Rotary Pumps. (Enveloppe à Eau pour Pompes Rotatoires.)

Alexey W. Von Schmidt, San Francisco, Cal., U. S., 19th August, 1884; 5 years.

Claim.—1st. In a packing box for pump shafts, the combination, with the collars *e* and *b*, of the water tank adapted to contain water to envelop the said shafts, substantially as described. 2nd. In a packing box for pump shafts, the combination of the collars *e*, *b*, the frames A, A₁ and the tanks D, B, substantially as described. 3rd. The combination, with a pump shaft, of the collars *e* and *b*, frames A, A₁, tanks D and B, and the packing ring *h*, all substantially as described. 4th. The combination with the pump shaft, of the collar *e* and *b*, frames A, A₁ tanks D and B, and the packing ring *h*, all substantially as described.

No. 20,037. Carriage Top. (Soufflet de Voiture.)

Robert L. Keith, Brazil, Ind., U. S., 19th August, 1884; 15 years.

Claim.—1st. The combination, with a carriage body, of the bows, the braces and the rocking bar forming the frame of the carriage top, with the knee-braces and the lever or levers, whereby the top may be turned down or up, or removed from the body, substantially as described. 2nd. The combination, in a carriage top, of the knee-brace with a rocking bar and a lever or levers, substantially as and for the purpose described.

No. 20,038. Wood Working Machine.

(Machine à travailler le Bois.)

Francis Hanson, Hollis, Dennis A. Meaher and James G. McFarland, Portland, Me., U. S., 19th August, 1884; 5 years.

Claim.—1st. In a wood working machine, substantially as described, a swinging frame on which the wood to be cut is carried or supported, so mounted that its operations can be adjusted to make it swing more or less, as described. 2nd. In a machine, as described, a track for the parts that hold the wood to be cut, combined with mechanism for moving the same to or from each other, so as to bring the wood lengthwise in any desired position relative to the cutter, substantially as described. 3rd. The combination of a swinging frame carrying the wood, and the means for holding the wood and adjusting it lengthwise, with a series of cutters placed spirally on a shaft and adapted to be moved to or from the wood to be cut, substantially as described. 4th. In a machine, as described, a series of cutters placed spirally on a rotating shaft, substantially as described. 5th. A cutter for a wood working machine having an angled and concave cutting edge, substantially as described. 6th. A cutter for a wood working machine, adjustable on its shank and adjustably fixed in position to cut, substantially as described. 7th. In combination with the means for holding the wood and adjusting it lengthwise to the cutter, mechanism whereby the said means can be rotated at any desired rate of speed, substantially as described. 8th. In a wood working machine, the combination of means for bringing the wood to be cut to the cutters at any desired intervals, means for moving the wood lengthwise before the cutter, and means for rotating the wood at any desired rate of speed, substantially as described.

No. 20,039. Water Filter and Cooler.

(Filtre-Fontaine à Eau.)

Edward C. Hall, Auburn, N. Y., U. S., and Charles W. Jennings, Kingston, Ont., 19th August, 1884; 5 years.

Claim.—1st. The combination, with the supply pipe and filter, of a sediment chamber located at the entrance of the supply pipe, and a second sediment chamber located between the first chamber and the filter, substantially as described. 2nd. In a combined filter and cooler, the combination, with a cooling chamber or reservoir and with the filter and sediment chamber located between the main sediment chamber and filter, substantially as described. 3rd. The combination, with the cooling and filtering chambers, of a sediment chamber divided into two compartments by means of the filter disc or stone, substantially as described. 4th. The combination, with the sediment chambers, of the outlet cocks for drawing off the sediment accumulated in said chambers, independently of each other, as described. 5th. The filtering chambers provided with the annular groove or recess for the reception of the screen and with the outwardly projecting flanges, in combination with the reservoir bottom operating in connection therewith to hold the screen in place, substantially as described. 6th. The filtering and sediment chamber provided with the inwardly projecting flange for holding the lower screen for dividing the same into two compartments, substantially as described. 7th. The sediment chamber provided with the annular groove or depression forming a ledge or step for the reception of the filtering stone, in combination with the outwardly projecting flange of the upper sediment chamber and filter, substantially as and for the purpose described.

No. 20,040. Oil Lamp. (*Lampe à Huile.*)

William Geiss, Hamilton, Ont., 19th August, 1884; 5 years.

Claim.—The combination of the bowl or oil reservoir A, the inner air tube G and the outer tube F fastened together, the inner and outer circles of the ornamented gallery B, the movement H with teeth on the top telescoped on the tube F, and the disk D fitted into the top of the air tube G, substantially as and for the purpose hereinbefore set forth.

No. 20,041. Movable Wire Fence.(*Clôture Métallique Mobile.*)

William Beilstein, Petersburg, Ont., 19th August, 1884; 5 years.

Claim.—1st. A frame consisting of the uprights or ends A connected by the longitudinal bars B and C having a brace D between them, a number of wires E stretched from end to end and secured to the uprights and to the cross brace, and a wire E¹ at the top, the uprights having holes near the top for the insertion of a pin or bolt G, in combination with a strut F provided with an eye to be engaged by the pin G, and the lower ends of the uprights and struts provided with points or spikes H. 2nd. The combination of lengths of fencing consisting of a wooden frame A B C D having longitudinal wires E and E¹, in combination with struts F placed between two ends A, and pivoted thereto by pins or bolts G passing through holes or eyes provided for that purpose near the top of the uprights and struts, all substantially as described and shown and for the purpose set forth.

No. 20,042. Smoke Consumer.(*Fourneau Fumivore.*)

George W. Mears, Norwalk, Ohio, U. S., 19th August, 1884; 5 years.

Claim.—1st. In combination with the fire place of a steam boiler furnace, or other furnace or furnaces, a hot air chamber situated at the rear end of said furnace, and above the crown or arch thereof, air pipes 1, 2 and 3 and air pipes 1', 2' and 3' respectively, penetrating the side walls of the furnace into the fire place thereof above the arch, and extending therefrom into the hot air chamber in which they terminate, substantially as described and for the purpose herein set forth. 2nd. In a furnace for steam boilers, the air pipes 4 and 4' respectively, penetrating the side walls of the furnace and terminating in the fire place above the crown or arch E, substantially as and for the purpose specified. 3rd. In a steam boiler furnace, the flue J having the perforations in the end thereof enclosed in the hot air chamber G, and the open end of the flue terminating in the fire place of the furnace, in the manner substantially as described and for the purpose specified. 4th. The flue J having its upper end terminating in a slot-shaped opening c formed by the inward projecting sides of the end of the flue, in combination with the stack or chimney provided with a foraminous diaphragm through which the flue passes, substantially as set forth and for the purpose specified. 5th. Attached to and in combination with the door of a steam boiler furnace, the chute D¹ provided with a slide, substantially as described and for the purpose set forth. 6th. Arranged in relation to, and in combination with a steam boiler furnace or fire place thereof, the inclined arch or crown E, air pipes 4 and 4' terminating in said fire place, hot air chamber and side pipes extending from the outside of the furnace into the fire place, thence to the hot air chamber in which they terminate, flue J having the perforations in the end thereof, in open relation with the said chamber, and the open end of the flue terminating in the fire place of the furnace, and the upper end provided with a slot like opening c and inward sides forming an arch on each side of said opening, stack or chimney having a perforated diaphragm through which the end of the flue passes, all constructed and arranged substantially as herein described and for the purpose specified.

No. 20,043. Apparatus for the manufacture of Lacrosses. (*Appareil pour la fabrication des Raquettes de Crosse.*)

Peter Teronhioton, Caughnawaga, Que., 19th August, 1884; 5 years.

Claim.—1st. The revolving bush D, provided with projection f₁, cutter k₁, opening g₁ and journals d₁, substantially as described. 2nd. The revolving bush D, provided with projection f₂, opening g₂, cutter k₂ and journals d₂, with bracket E provided with bearings to receive the said bush D, adjustable rests b₂, also the adjustable rests G, and the whole constructed, arranged and operating substantially as shown and described. 3rd. The combination of the bush A, provided with openings a and b and cutters g and h, as shown, substantially as and for the purpose set forth. 4th. The combination of the revolving bush A, constructed, arranged and provided as described and shown, diek C, revolving bush D, constructed, arranged and provided as described and shown, the whole substantially as shown and described for the purpose set forth.

No. 20,044. Rivetting Machine.(*Machinè pour Rivet.*)

John F. Allen, New York, N.Y., U.S., 19th August, 1884; 5 years.

Claim.—In a rivetting machine, the combination of the saw frame A, pressure cylinder G, piston rod P, the toggle joint formed by the rods K and T with plunger E, and dies D¹, D², arranged to operate substantially as and for the purpose hereinbefore set forth.

No. 20,045. Earth Closet.(*Siège d'aisance à la terre sèche.*)

John Cameron, Toronto, Ont., 19th August, 1884; 5 years.

Claim.—1st. In an earth closet provided with common earth chamber A, B, having an aperture in the bottom thereof provided with a guide C, the closet seat F connected by a bar f₁ to a rocking funnel cup D, constructed so as to receive a supply of earth from the earth

chamber through the guide C, when pressure is used on the seat F, and will be retained therein until the pressure is removed from the seat F, when a counter-weight E, in connection with the funnel cup D and seat F, will lift up the seat F to its normal position, and simultaneously drawing back the top of the funnel cup and pushing forward the bottom thereof, allows the earth in said funnel cup to leave the same and slide down the sloping board G into the vessel g₁ prepared to receive the same. 2nd. The combination of the seat F, bar f₁, funnel cup D, counter-weight E with connecting rod e₂ and rollers e₃, as shown and described. 3rd. The combination of the earth chamber A B provided with metal guide C₁, the sloping board G and vessel g₁, for the purposes set forth.

No. 20,046. Roller Skate. (*Patin à Roulettes.*)

Jessie B. Lincoln, East Providence, R. I., U. S., 20th August, 1884; 5 years.

Claim.—1st. In a roller skate, the foot board A having a bed plate C with posts E, E¹, in combination with the spring D and truck F having hubs I, axle H and rollers M, substantially as described. 2nd. In a roller skate, the bed plate C, posts E, E¹ and spring D, in combination with the truck F mounted on said posts, and the nut f₁ to regulate the tension of the spring D, substantially as shown. 3rd. The slotted regulator K adjustable upon the foot board A, as described, and having posts L, L, in combination with the truck F having the stem J, and mounted upon the posts E, E¹ of the rotating bed plate C, substantially as and for the purpose specified. 4th. The truck F having the aperture g, hubs T, axle H and rollers M, in combination with the coiled spring D and lubricating material G, substantially as specified.

No. 20,047. Combined Seeding and Cultivating Machine. (*Semoir-Cultivateur.*)

William Dickinson, Rockford, Ill., U. S., 20th August, 1884; 5 years.

Claim.—1st. The within-described seeding and cultivating machine constructed of a supporting-frame A, axle A₂ and wheels F, a plow-frame G suspended from the main frame by means of brackets H, and adjustable heads c to form an adjustable yielding joint at the front end, and by cords d controlled by a lever K, rock-shaft K and pulleys J permitting an adjustment at the rear end, a seed-hopper M supported at the rear end of the main frame, an agitator shaft N within the hopper rotated by means of a bolt extending from a loose pulley N₁ on the end of the shaft, to a driving-pulley N₂ on the hub of the wheel, a longitudinal seed-slide R actuated by a set screw to adjust the feed, a second slide R₂ actuated by a foot lever P to cut off the feed, a clutch O actuated by same lever to engage or disengage the loose pulley and agitator-shaft, and detachable plows and adjustable harrows carried by the plow frame, all substantially in the manner and for the purpose herein set forth. 2nd. The combination, in a seeding and cultivating machine, with its frame A, the bracket H dependent from the end of the frame in front of the axle, and a secondary adjustable tool-carrying frame G pivoted at its front end directly to the brackets by means of a slotted clevis c, permitting a longitudinal play of the frame of the suspension-chains d, dependent from the main frame in rear of the axle, to support the rear end of the tool-frame, and the pulleys J, actuated by the rock-shaft K and lever K₁, and adapted to take up or let out said chains, and thereby elevate or depress the rear end of the tool-frame, substantially in the manner and for the purpose herein set forth. 3rd. In combination with the tool-carrying frame of a seeding and cultivating machine, the harrows U, each constructed with a long toothed-bar pivoted to the lower end of an upright supporting-bar V carried by said frame, and adapted to rotate in a plane transverse to said bar for adjustment to work in a wider or narrower path, substantially in the manner and for the purpose herein set forth. 4th. The combination, in a seeding and cultivating machine with the adjustable tool-frame G adapted to support and carry a gang of plows or hoes, of a series of separate harrows U, U supported and adjusted upon the ends of bars V dependent from said frame for the after cultivation of the soil in the wheel-tracks, and in the intervals between the drills formed by said plows or hoes and seeded by the drill tubes, substantially in the manner and for the purpose herein set forth.

No. 20,048. Ratan Scraping and Splitting Machine. (*Machinè à Gratter et Ecafer le Ratin.*)

Donald Agroff and Thomas J. Clinton, Woodstock, Ont., 20th August, 1884; 5 years.

Claim.—1st. In a ratan scraping and stripping machine, and in combination with the frame A thereof, the shaft B, rotating cutter-head C and mouth tube B₁, all arranged substantially as and for the purposes set forth. 2nd. In a ratan scraping and splitting machine, the combination of the double grooved feed wheels E, and guides Q provided with the guide tubes n, substantially as and for the purposes described. 3rd. In a ratan scraping and splitting machine, the combination of the feed wheels E, guides Q, R and R₁, substantially as and for the purposes set forth. 4th. In a ratan scraping and splitting machine, the scraping knives b arranged so as to entirely surround the cane passing between them, and adapted to be automatically opened and closed as the cane passes through the scraper head, substantially as and for the purposes specified. 5th. In a ratan scraping and splitting machine, and g₁ means for automatically opening and closing the knives of the scraper-head, the combination of the head I, plate J between which is placed the wheel K, the periphery of which is provided with an arm j, and a series of cams i, the latter being adapted to actuate the knife blocks c with the worm L upon the yielding shaft M, and any suitable automatic tripping device, substantially as and for the purposes set forth. 6th. As a means for automatically opening and closing the scraper knives, the combination of the scraper head I provided with the supporting blocks c, knives b, cam wheel K, arm j, pins h, tripping devices N and arm l, with the worm L, and yielding shaft M, spring box M₁ and springs e, all arranged and operating, substantially as set forth. 7th. In a ratan scraping and splitting machine, and as a means for vertically

adjusting the stripping knife, the combination of the block *p* which latter carries the splitting knife, with the screw *T* and cup *T'* adapted to be adjusted so as to raise or lower the table *T*, substantially as specified. 8th. In a ratan scraping and splitting machine, the combination of the block *p*, dovetail *r* and adjusting screw *u*, arranged and adapted to give a lateral adjustment to the stripping knife, substantially as set forth. 9th. In a ratan scraping and stripping machine, the feed rolls *E* provided with two or more grooves upon their peripheries, and adapted to be vertically adjusted, substantially as specified. 10th. In a ratan scraping and stripping machine, the guides *R*, *R'*, constructed in two parts and provided with springs *o*, adapted to keep the free ends of the guides closed against the cane passing between them, substantially as described.

No. 20,049. Planing Machine.

(Machine à Raboter.)

James A. Roberts, Detroit, Mich., U. S., 20th August, 1884; 5 years.

Claim.—1st. In a tongue and grooving machine for making two strips simultaneously from one piece of board, an upper and lower cutter head, each provided with two planer knives upon opposite faces, and a set of beading and dividing tools adjustably secured upon the intermediate faces, in combination with two edge grooving tools and adjustable edge guides, substantially as described. 2nd. In a planing machine for making two strips of ceiling or flooring simultaneously from one board, a head provided with a set of planer knives and a set of beading tools, said beading tools being adjustably secured to said head, in combination with a fixed and an adjustable side grooving tool, whereby the machine is adapted to boards of different widths, and the head can be formed at any desired point on said board, as and for the purposes herein described.

No. 20,050. Dumping Wagon.

(Wagon à Bascule.)

William Leonardt and John H. Leonardt, Baltimore, Md., U. S., 20th August, 1884; 5 years.

Claim.—1st. The combination, in a dumping-wagon, of the body *d*, a turn-table provided with a standard on each side, raising mechanism, substantially as described, carried by said turn-table and the main frame upon which said turn-table is pivoted, the turn-table and raising mechanism operating entirely between the wheels, as set forth. 2nd. In combination with the main frame of a dumping wagon, a frame thereon, and having an upright at each side carrying a grooved wheel at its upper end, the body *a* pivot journaled in each side thereof, a chain attached to each pivot and passing over the grooved wheel, and means, substantially as described, for winding up the chain and thereby raising the body, as set forth. 3rd. The combination, with the main frame carrying the uprights and grooved pulleys, the body, its pivots, the chains and its winding mechanism, of mechanism, substantially as described, for retaining the body at any height to which it may be raised, as set forth. 4th. The combination, with the main frame, the body and its rising mechanism, of the pawl-and-ratchet mechanism described, for the purpose set forth. 5th. The combination, with the main frame, the turn-table, the uprights and their pulleys, the body, its pivots, the chains and their winding mechanism, of mechanism, substantially as described, attached to the turn-table and engaging with the body, whereby the angle of the body in dumping may be regulated without regard to the angle to which it is turned, as set forth.

No. 20,051. Fountain Brush. (Pinceau-Fontaine.)

Thomas Huntbatch, Geneva, Iowa, U. S., 20th August, 1884; 5 years.

Claim.—1st. In a whitewash brush, the combination of a brush *B*, a reservoir *A* and an elevator *D*, substantially as described. 2nd. In a whitewashing or calcimining brush, the combination of a fluid-reservoir, a rigid tube *d* having valves *d₁*, *d₂*, a reciprocating tube *d₃* having nozzle *d₄* and suitable mechanism for operating the tube *d₃*, substantially as and for the purpose described. 3rd. In a whitewashing or calcimining brush, the combination of the reservoir *A* having looped studs *a₁*, with locking pins *a₂* and adjusting washers *b₂* and the brush *B*, substantially as and for the purpose described. 4th. The combination of the brush *B*, the rims *a₁*, the chamber or reservoir *A*, tube *a₂*, stopper *E* and elevator *D*, substantially as and for the purpose described. 5th. The combination of the spraying deflector *d₅*, with the brush *B* and the liquid elevator *D*, substantially as and for the purpose described. 6th. The combination of the reservoir *A* having top rims *a₁*, *a₂* forming space *a₃*, spout *a₄* and the brush *B*, substantially as and for the purpose described.

No. 20,052. Stop Cock. (Robinet de Retenue)

James H. Blessing, Albany, N. Y., U. S., 20th August, 1884; 5 years.

Claim.—1st. The combination, with a casing *A* provided with branches *a*, of a turn-plug consisting of a skeleton cage provided with expansible gibs *D*, angle frames *F* and a spring *E*, substantially as and for the purpose herein specified. 2nd. The combination, with a casing *A* for a stop-cock, of a turn-plug consisting of a skeleton cage provided with expansible gibs *D*, mechanism for forcing said gibs outward, and a set screw *G*, as and for the purpose herein specified. 3rd. In a stop-cock, the combination, with a turn-plug consisting of a skeleton cage provided with a hollow stem, substantially as described, of the expansible gibs *D*, angle-frames *F* and set screw *G*, substantially as and for the purpose specified.

No. 20,053. Shaft Coupling.

(Embrayage des Arbres de Couche.)

Thomas L. Ellis and Charles Leonard, Coatbridge, Scotland, 20th August, 1884; 5 years.

Claim.—1st. Shaft couplings consisting of the hollow circular box *a* having the double conical hollow *b* and *c*, screw threads *d*, box nuts *e* and wedges *f*, substantially as and for the purpose hereinbefore set forth, with reference to Figs. 1 and 2 of the accompanying drawings.

2nd. Shaft couplings consisting of the hollow circular box *a* having the interior curved surfaces *l*, screw threads *d*, box nuts *e* and splitting *j*, substantially as and for the purposes hereinbefore set forth, with reference to Figs. 3 and 4 of the accompanying drawings.

No. 20,054. Electric Lamp. (Lampe Electrique.)

Elihu Thomson, Lynn, Mass., U. S., 20th August, 1884; 5 years.

Claim.—1st. The combination, in an electric lamp, with the lifting or actuating support for the clamp clutch or equivalent feed controlling device, which, by its reciprocating movement, both lifts and causes the release of the carbon, of a main circuit electro-magnet and a derived circuit electro-magnet, both connected independently with said support so that each may act thereupon reversely and independently of the other to move the same in opposite directions, said main circuit magnet being adjusted to hold its armature or equivalent part in lifted position during normal operation of the lamp, while the derived circuit magnet is adjusted to act only on an increase of the arc beyond normal length, and has with the same strength a constant or uniform pull on the feed mechanism in all positions of its armature. 2nd. The combination, in an electric lamp, of a lifting and feeding clutch or clamp, a lifting main circuit electro-magnet whose core or armature retains its attracted position during feeding operation, or core or armature controlled by a derived circuit coil and responding only on an increase in the length of arc beyond the normal point, said core or armature having a uniform pull in its changed positions and independent actuating, and supporting connections between the main and derived circuit armatures, and the common clamp or clutch so that they may act independently of one another, in the manner described the one to lift and the other to lower the lamp. 3rd. The combination, with a common carbon separating and adjusting mechanism for an electric lamp, of a main circuit electro-magnet for separating the carbons connected with said common mechanism so as to actuate or support the same, and adjusted to retain its position during normal operation, and a derived circuit magnet, acting reversely upon the same portion of said adjusting and feeding mechanism, to cause a feed independently of the main circuit magnet, said derived circuit magnet being adjusted to operate said mechanism only on an increase in the length of arc beyond the normal, and being provided with an armature whose pole moving before the magnet is curved or tapered, as and for the purpose set forth. 4th. The combination, with a lifting and feed clutch, of a pivoted table or lever *L* having the two fulcrums or points of support *m*, *n*, a main circuit electro-magnet connected at one of said points, and a derived circuit electro-magnet connected to the other point, and exerting a pull uniform in the various positions of its armature, as and for the purpose set forth. 5th. The combination of the clutch, the lever *L₂*, the table or lever *L*, fulcrumed or supported at opposite points *m*, *n*, and the main and derived circuit magnets lifting the opposite ends of the lever dissimultaneously, as and for the purpose set forth. 6th. The combination of the clutch, the lever *L₂*, table or lever *L* having two fulcrum supports at *m*, *n*, main circuit magnet whose armature is connected to one side of said table and retains its lifted position during the normal operation of the lamp, and derived circuit magnet adjusted to lift its armature when the arc increases beyond a normal length, said armature and the pole that acts upon it being formed in any suitable manner so that the pull will be constant in the various positions of the armature with reference to the pole.

No. 20,055. Window Shade Roller.

(Bâton de Rideau de Fenêtre.)

John C. Sturgeon and Newell J. Clark, Erie, Penn., U. S., 25th August, 1884; 5 years.

Claim.—1st. A shade roller, constructed of sections joined together by an extension joint or joints formed by cutting away alternate longitudinal portions of each section of the roller, so that the remaining longitudinal portions of the sections of the roller will slip together and form such joint or joints, when the ends of said longitudinal portions are fastened and secured in place relatively to each other, by fastenings which do not project above any part of the surface of the roller, by means of which joint or joints such roller is adapted to be adjusted to its supporting-brackets and to windows of different widths, substantially as set forth. 2nd. The combination, in a shade-roller, of the following elements: an extension joint in the body of the roller, an automatic spring for raising or rolling up the shade, and a pawl or ratchet arranged to automatically stop and retain the shade at any height desired, all operating substantially as and for the purpose set forth. 3rd. A spring shade roller having an extension joint therein, formed by cutting away alternate longitudinal portions of each of the sections of such roller, so that the sections of the roller will slip together and form the joint, by means whereof said spring-roller is adapted to be adjusted to its supporting-brackets and to windows of different widths, substantially as set forth. 4th. A shade roller having an extension joint therein, by means whereof the length of said roller is adjustable, in combination with journals or bearings therefor, provided with means to prevent their being withdrawn from their supporting brackets by the closing together of the joint in said roller, substantially as set forth. 5th. In combination with an extension shade roller, the bearings or journals *E* and *F* therefor having heads or collars *e* and *f* thereon, constructed and operated substantially as set forth. 6th. In the extension joint of an adjustable shade roller, means for fastening and retaining the ends of each sections of said joint in contact in their relative position to each other, such fastenings not projecting above the surface of such roller, substantially as and for the purpose set forth. 7th. In combination with the sections of the joint in an adjustable roller, the staple *C*, operating substantially in the manner and for the purpose set forth.

No. 20,056. Dredging Machine.

(Machine à Draguer.)

Alexey, W. Von Schmidt, San Francisco, Cal., U. S., 25th August, 1884; 5 years.

Claim.—1st. The combination, with the plow and conduit-pipe of a dredger of the kind specified, of the shaft *A* angular in cross sec-

tion, the crown-wheel B having a central opening adapting it for the reception of a shaft A, and the bracket C made in two parts and adapted for the reception of the shank of the wheel B and secured to the pipe, substantially as described. 2nd. The combination, with the plow-shaft and conduit-pipe of a dredger of the kind specified, of the bracket bearing made in two parts, and the gear wheel B having the shank *d* and central angular opening, substantially as described. 3rd. In combination, with the conduit-tube and plow-shaft of a dredger of the kind specified, the bracket C, constructed as described, and the rod *i* having turn-buckle, substantially as described. 4th. The combination, with the plow-shaft and conduit-tube of a dredger of the kind specified, of the bracket C having the projection *e* and the rods *h*, substantially as described.

No. 20,057. Method of Connecting and Supporting Sheet Iron Pipes on Pontoon Boats for Dredging Machinery. (*Mode de Joindre et Supporter les Tuyaux en Tôle sur les Bateaux-Pontons pour Machines à Dredger.*)

Alexey W. Von Schmidt, San Francisco, Cal., U. S., 25th August, 1884; 5 years.

Claim.—1st. A dredger-conduit consisting of sections of pipe supported upon pontoons, and having its end sections near the point of deposit connected by ball-and-socket joints, its intermediate sections connected by flexible sections, substantially as described, and connected to the dredger by a flexible pipe. 2nd. A pontoon for supporting the dredger pipe consisting of the body C provided with the cross-pieces *e*, and the cleats near the end for the attachment of ropes, substantially as described. 3rd. In a joint for dredger pipes, the combination, with the contiguous ends of said pipe, of a section of rubber pipe clamped thereto, and the hooks secured near the ends of the pipe adapted for the reception of cord, whereby the strain is taken off the rubber connection, substantially as described. 4th. The combination, in a dredger-conduit, of the pipe B connected by flexible joints, as described, and the pontoons A provided with cross-pieces *e* and joined together by ropes or the like, substantially as described.

No. 50,058. Apparatus for Measuring Hydro-Carbons, &c. (*Appareil pour Mesurer les Hydrocarbures, &c.*)

Karl Schmid, Vienna, Austria, 25th August, 1884; 5 years.

Claim.—A vessel for measuring hydro-carbons or similar fluids consisting of the receptacle, the drip chamber, the curved outlet pipe or pipes having three-way cock or cocks, the measuring vessel or vessels connecting with the cock or cocks, having gauge pipe or pipes, and the measuring cup or cups pivoted inside the measuring vessel or vessels, and provided at the outer end of its pivotal axle with an index, all constructed and combined to operate as and for the purpose shown and set forth.

No. 20,059. Sand Band for Vehicles.

(*Garde-Sable pour Voitures.*)

Willis M. Farr, Dowagiac, Mich., U. S., 25th August, 1884; 5 years.

Claim.—1st. In a sand band for vehicles, the combination of the axle B, with cap H having an inwardly turned flange H₁, bolts K and yoke clip L, and the hub A with spool E, having an outwardly-turned flange F covered by said cap, as set forth and described. 2nd. A sand protector for vehicles, consisting of the spool E having flange F, and cap H having flange H₁, the spool driven into the end of the hub and projecting therefrom, and the cap clipped to the axle in such position that the said flanges lap, as set forth. 3rd. The combination, with the axle B, of the flanged cap H having lugs J, the bolts K and the yoke clip L, as set forth for the purpose described. 4th. The spool E having flange F, and prongs G, substantially as and for the purpose set forth. 5th. The cap H having flange H₁, lugs J, shoulder I and projection M, as and for the purpose set forth.

No. 20,060. Wood Pulp Boiler.

(*Chaudière à Pâte à Papier.*)

David O. Francke, Korndel, Sweden, 26th August, 1884; 5 years.

Claim.—1st. A boiler having two shells, the outermost of iron or steel, and the innermost of a less corrodible metal, arranged to expand and contract independently while the outer contributes to sustain the inner, as herein specified. 2nd. The boiler shell B of iron or steel, having vent holes *b*, distributed as shown, in combination with an independent lining or inner shell of less corrodible metal, arranged to serve as and for the purposes herein specified. 3rd. A boiler shell of iron or steel, in combination with an inner shell of less corrodible material, and with stop-cocks *b* communicating with holes *b* distributed in the outer shell, as herein specified. 4th. A rotary boiler for paper pulp and analogous material having an outer shell B, an inner shell of less corrodible material M and internal steam pipes Dr, Dz, arranged to serve as and for the purposes herein specified. 5th. The internal braces G formed each in two or more pieces, in combination with the wedges H, adapted to serve as herein specified. 6th. The internal braces G and means, as H, for distending them, in combination with each other and with the lead shell M and exterior shell B, arranged for joint operation, as herein specified. 7th. The sample cock I presenting only lead surfaces to the fluid controlled thereby, in combination with the steel shell B and lead shell M, and with lead bushing arranged for joint operation, as herein specified. 8th. The revolving boiler B, outer rings B** and wedge or intermediate parts D***, in combination with each other and with supporting rollers C, arranged for joint operation as herein specified. 9th. The method described, of treating wood and analogous material, for manufacturing paper pulp, by subjecting it to gentle agitation in a solution of proper strength and applying direct steam to the solution, so as to raise the temperature without presenting surfaces of higher

temperature to the contents of the boiler, substantially as herein specified. 10th. The method described, of producing pale and easily bleached paper pulp from wood or analogous material, relatively free from gypsum, at a single operation, substantially as herein specified. 11th. The product described, to wit: paper pulp produced from wood of good color and without gypsum, as herein specified.

No. 20,061. Device for a Toy.

(*Appareil pour un jouet.*)

Frederick W. A. Schneider, Toronto, Ont., 26th August, 1884; 5 years.

Claim.—1st. The box A having receptacles B located at opposite ends of it, and a wheel D having buckets *a* arranged around its periphery, placed within the box between the two receptacles, and carried on a spindle E suitably journaled, in combination with the opening *e* made in the bottoms, for the purpose of permitting the sand falling from the top receptacle to re-enter the lower one, substantially as and for the purpose specified. 2nd. The bottoms C arranged at opposite ends of the box A to form sand receptacles, as specified, opening *e* in the said bottom, and hole *b* in the apexes of each bottom, and spouts *d* leading from the said holes, in combination with a wheel D having a series of buckets *a* around its periphery, and fixed to the spindle E journaled in the box, substantially as and for the purpose specified.

No. 20,062. Gang Saw Mill Frame.

(*Châssis de Scies Verticales.*)

Theodore Wilkin, Milwaukee, Wis., U. S., 26th August, 1884; 5 years.

Claim.—1st. In combination with a supporting-frame of a gang-saw mill, upright beams carrying the sash-guides and adapted to move bodily backward and forward equally at their upper and lower ends, and means, substantially such as shown and described, for imparting such motion to the beams. 2nd. In combination with a supporting frame, beams B, each carrying upper and lower guides C, supporting-links D pivoted to the main frame and to the beams at a point between the upper and lower ends of the latter, main shaft G, crank J, shafts E, F provided with arms *d*, *e*, the former connected with the upper and lower end of the beams, and the latter connected with each other, and arm *h* secured upon one of the shafts E, F and connected with crank J, all substantially as shown and described. 3rd. The herein-described sash-oscillating mechanism for gang-saw mills consisting of beam B, supporting-links D pivoted to the main frame and to the beams between the upper and lower ends of the latter horizontal shaft, E, F, arms *d* secured upon said shafts, and connected by pitman *f* with the upper and lower ends of beams B, arms *e* secured upon said shafts, and connected by pitman *g* with each other, shaft G provided with crank J, substantially as set forth. 4th. In combination with guides C and beam B, one provided with elongated holes *a*, fastening bolts passing through said holes and binding the parts together, and screw-stems C bearing against one of said parts and screwing into the other, as shown, to adjust the guides upon the beams and to hold them where adjusted.

No. 20,063. Gang Saw Mill.

(*Scierie à Scies Verticales.*)

Theodore S. Wilkin, Milwaukee, Wis., U. S., 26th August, 1884; 5 years.

Claim.—1st. A gang-saw frame, consisting of two side frames A, A, connected by cross-ties or braces and having a regular and continuous spread from top to bottom, substantially as shown, whereby strains are transmitted directly to the sills and lateral strains are avoided. 2nd. In a saw-mill frame, a side frame consisting of a base section *a*, having recessed upper end, and continuous flange or bearing face *c*, and upper section *b* formed with independent portion *d*, and bearing face or flange *e*, said parts being bolted or fastened together, substantially as shown and described. 3rd. In combination with a gang saw frame composed of inclined sides A, A and cross ties or braces, a driving shaft having the crank pin of its crank-wheel I exactly midway between the side frames, a pillow-block supporting the inner end of said shaft, sills supporting the sides A, A and fly-wheel D mounted upon the shaft within the frame at a point between the pillow-block and sill, as shown and described. 4th. A gang saw frame having its side frames spread further apart at the base than at the top, and extending in straight lines from top to bottom. 5th. In a gang saw frame, side frames A inclined outward from top to bottom, and provided with vertical bearing faces on their inner sides, for the purpose explained.

No. 20,064. Cooking Stove. (*Poêle de Cuisine.*)

John Johnstone, Detroit, Mich., U. S., 26th August, 1884; 5 years.

Claim.—1st. In a cook stove, the combination, with the combustion chamber and oven, of a continuous hot-air passage distinct from the combustion chamber, formed in part by said oven, and in part by flues extending through the fire-box, and means for admitting cold air to said air passage, as set forth. 2nd. In combination with the combustion chamber D, oven L₁ and flues C, the heating flues E passing through the fire chamber D, to afford an extended heating surface within said fire chamber, and leading directly to the oven from the flues C and from the outer air, as herein specified. 3rd. In combination, with the oven L₁, the combustion chamber D and the continuous air passage formed in part by said oven, the heating flues E passing through and formed in the structure of the combustion chamber to afford an extended heating surface within said fire chamber, and connecting the oven and air flues C, and the cold air register leading directly to said flues E, as set forth. 4th. The combination of the combustion chamber, with the warming chamber, the hot air flues formed in part by the walls of the oven and said warming chamber, and the register, as set forth. 5th. In a stove, the re-heating flues E formed in the fire box, extending through the same to give a larger heating surface therein and serving to contract the throat thereof, combined

with the oven L, air inlets J and flues C, the said flues E directly connecting the oven with the inlets and flues C on the same horizontal plane, as set forth. 6th. In a cooking stove, the combination with the oven, of the chimney or combustion chamber, a flue or hot air passage partially surrounded by the oven, openings *d* at the lower ends of the hot air passage, and openings *d* at the upper ends thereof, the latter-named openings being governed by a damper, as set forth. 7th. In a cooking stove, the combination, with the oven, of the chimney or combustion chamber, a hot air passage distinct from the chamber and arranged to be heated by the same, said passage being adapted to deliver hot air into the top of the oven and receive cooler air from the bottom thereof to be again re-heated and returned to the oven, and thus a continuous circulation of hot air is kept up in the oven, the gaseous products of combustion passing out through a flue arranged between the oven and the top plate of the stove, as set forth. 8th. In an oil stove, a lamp having a shield arranged above its top and below the tops of the wick tubes, and separated from the top of the lamp, and an air tube passing through the lamp body and shield, as set forth. 9th. The combination, with the lamp body and its wick tubes, of the shield arranged above the body and separated therefrom by an open air space, the chamber arranged above said shield and having perforated walls, and the air tube passing through the lamp body and shield, and opening at its top in said chamber below the tops of the wick tubes, which pass through the said shield and chamber, as set forth. 10th. The combination, with the lamp body and its wick tubes, of the perforated chamber surrounding the wick tubes, and the air tube passing through the lamp body and opening at its top in said chamber, as set forth. 11th. The combination, with the lamp body and its wick tubes, of perforated cages M formed at the lower end of the wick tubes and extending into the lamp body, for the purpose set forth.

No. 20,065. Store Service Apparatus.

(Appareil de Service pour Magasin.)

Harris H. Hayden, New York, N.Y., U.S., 26th August, 1884; 5 years.

Claim.—1st. The combination, with the counters and desk of a store and with wires, systematically arranged and provided with travelling carriers, of means whereby the attendants may alter the inclination of the wires, substantially as and for the purpose set forth. 2nd. The combination, with the counters and desk and system of wires, of cords extending between the desk and stations, and connected and arranged substantially as set forth, to enable the operator at one end of the wire to elevate or lower the opposite end, for the purpose specified. 3rd. The combination, with the wires, of slides connected to the wires, catches for engaging with said slides, and means for releasing the catches, substantially as set forth. 4th. The combination of the wires of supports H adapted for attachment adjacent to the counters, slides connected to the wires and bearing upon said supports, and cords and guides, whereby the slides may be raised and lowered, substantially as specified. 5th. The combination, with the desk, counters, system of wires, and means for altering the angle thereof, and catches arranged adjacent to the wires to engage and hold the carriers, substantially as set forth. 6th. The combination, with the slides connected to the wires, of catches for holding the carriers, and means for automatically releasing the carriers when the slides are elevated, substantially as set forth. 7th. The combination of the wires, supports arranged adjacent to the counters, slides connected to the wires, and adjustable stops for limiting the movements of the slide, substantially as set forth. 8th. A carrier for moving upon the way of a store service apparatus, provided with a receptacle extensively connected to the body of the carrier, substantially as set forth. 9th. The combination, with the ways of a store service apparatus, of carriers travelling thereon, and undetachable therefrom, and provided with receptacles and elastic connections between the same and the frames of the carriers, substantially as specified. 10th. The carrier having a receptacle extensively connected to the frame thereof, and with a pendant cord or handle, substantially as set forth. 11th. The combination, with the desk and counters of a store, of a system of wires provided with carriers, and means for altering the inclination of said wires, each wire being longer than the distance between its terminal supports, for the purpose set forth.

No. 20,066. Fire-Arm. (Arme à Feu.)

William J. Kriz and Joseph D. Lucas, St. Louis, Mo., U.S., 26th August, 1884; 5 years.

Claim.—1st. In a fire-arm, the locking pin adapted to have a compound end-wise and rotary movement, in combination with suitable mechanical means for operating it, whereby it is first moved endwise to force the cartridge into the barrel and then turned to lock it, substantially as set forth. 2nd. In a fire-arm, the locking-pin having a spiral groove and adapted to have endwise and rotary movement, in combination with the lever having a sliding extension provided with a projection to fit in the groove in the pin, substantially as and for the purpose set forth. 3rd. In a fire-arm, the locking pin provided with lugs and a spiral groove, and adapted to have endwise and rotary movement, in combination with the lever for operating the pin, and the stock provided with notches to receive the lugs on the pin, substantially as and for the purpose set forth. 4th. In a fire-arm, the combination of the locking-pin adapted to have a compound endwise and rotary movement, lever for operating the pin, and extractor secured to the pin by a block and a screw or screws, the inner end of one of the screws fitting in a spiral groove in the pin, to cause the advance movement of the extractor as the pin is turned, substantially as and for the purpose set forth. 5th. In a fire-arm, in combination with a pin for forcing the cartridge into the barrel lever connected to the pin to operate it, and arm connected to the lever and adapted to raise the cartridges into a position to be operated upon by the pin, substantially as set forth. 6th. In a fire-arm, the combination of the pin for forcing the cartridges into the barrel, lever for operating the pin, and spring arm with a hooked or notched outer end connected to the lever, and adapted to raise the cartridges into a position to be operated upon by the pin, substantially as set forth. 7th. In a fire-arm, the combination of the pin for forcing the cartridges into the barrel, lever for operating the pin, and spring arm having a hooked or notched

outer end, and connected to the lever by a short shaft, crank, slotted link and pin, substantially as and for the purpose set forth. 8th. In a fire-arm, the combination of levers and hammers, the levers having projections for cocking the hammers, and the hammers being hollow to receive adjustable blocks, substantially as and for the purpose set forth. 9th. In a fire-arm, the hammers provided with adjustable blocks operated by small triggers or levers to which they are connected by links, substantially as and for the purpose set forth. 10th. In a fire-arm, the hammers, in combination with the levers for cocking them, and the sliding block for securing them in their cocked position, said block being secured in place and operated by a headed pin fitting in a slot in the stock of the gun, substantially as set forth. 11th. In a fire-arm, the combination of the fore-end provided with a recess and a notch, and the barrel having a recessed lug to receive a spring bolt having a conical point, the lug adapted to fit in the recess in the fore-end, and the conical point of the bolt adapted to fit in the notch in the fore-end, substantially as and for the purpose set forth. 12th. In a fire-arm, the combination of the hollow stock adapted to hold the cartridges bullet end up, and having an incline up which the cartridges are moved, and the springs and plates for holding the cartridges in position, substantially as set forth. 13th. In a fire-arm, the spiral spring Y in the rifle bore, for the purpose set forth.

No. 20,067. Filter. (Filtre.)

Charles E. Chamberland, Paris, France, 26th August, 1884; 15 years.

Claim.—1st. The improved condition of filter, herein described, in which the filtering medium is constituted by a cylindrical or conical diaphragm of porous earthenware, which is capable of being refired without affecting its porosity. 2nd. The particular construction of filter shown in the drawings, and more particularly the combination of the filter proper *d* and the flange *c*, soldered or cemented together and combined with the nozzle *j*, the elastic washer *g* and screw cap *v*, for the purpose of tightly securing the washer *g* and disc *e* against the bottom *h* of the vessel or cylinder *a*, substantially as shown and described.

No. 20,068. Non-Conducting Compound.

(Composé Non-Conducteur.)

William S. Grubb, Baraboo, Wis., U.S., 24th August, 1884; 5 years.

Claim.—1st. The herein-described non-conducting compound, composed of kaolin, salt, lime, hair and jute united with water in about the proportions specified, and applied substantially in the manner and for the purposes set forth. 2nd. The herein-described boiler covering, consisting of the two layers B and C, the layer B being composed of kaolin, salt, lime, hair, jute, paper-pulp, glue and ground straw, substantially as explained and for the purposes set forth.

No. 20,069. Boot. (Bottine.)

George B. Farmer, Perth, Ont., 26th August, 1884; 5 years.

Claim.—The combination of the elastic top *a a a*, to which is attached the imitation button fly or imitation lace front B B B, with the foxing C C C, substantially as and for the purpose hereinbefore set forth.

No. 20,070. Gang Saw Mill.

(Science Mécanique à Saws Verticales.)

Theodore S. Wilkin, Milwaukee, Wis., U.S., 26th August, 1884; 5 years.

Claim. 1st. In a gang saw mill, the combination of a main frame provided with guides C, a sliding frame D mounted in said guides, pressure-rolls G, H arranged to slide independently in frame D, means substantially such as shown and described, for raising and lowering frames E, F and cap-plate *a* overhanging the proximate ends of the frame E F and secured to frame D, whereby said frame D is sustained by the uppermost of the frame E F. 2nd. The combination in a gang saw mill, of a main frame, vertically moving frames E, F, provided with independent pressure-rolls G, H, screw rods I, I, for raising and lowering the pressure-roll frames, nuts K, K, encircling the screw-rods and springs *f* above the nuts, adapted to hold said nuts normally in a fixed position, but to yield and allow the nuts and screw rods to rise when the pressure rolls are raised, substantially as set forth. 3rd. In a gang saw mill, the combination of a main frame, two vertical screw-rods carrying independent pressure-rolls to bear upon the cans or logs, an equalizing beam pivoted between said rolls, collars attached to the arms of said beam and passing round the rods, nuts encircling the rods and connected to opposite ends of the equalizing-beam by slotted links, and springs interposed between the collars and the nuts, all substantially as shown and described, whereby the screw-rods are permitted to rise and fall through their rotation within the nuts to simultaneously adjust themselves and their rollers to logs or cants of unequal thickness through the tipping of the equalizing beam, and to independently rise and fall in passing over the irregularities of the said cants or logs. 4th. In a gang saw mill, the combination of the two vertical screw-rods I, I, carrying independent pressure-rolls, and with means, substantially such as described and shown for rotating them, equalizing-beam L pivoted between said rods, collars N, N carried by opposite ends of said beam, nuts K, K connected with the beam on opposite sides of its pivot by slotted links *d*, *d* and encircling the screw-rods, and springs *f*, *f* interposed between the collars and nuts, for the purpose explained. 5th. In a gang saw mill, the combination of a main frame, a vertical longitudinally-grooved screw-rod carrying a pressure-roll, pinion J encircling said rod and having a lug fitting into its groove, driving-shaft X provided with wheels V, W, and swinging shaft Q provided at opposite ends with pinions or wheels P and R, the former in constant engagement with pinion J and the latter adapted to be thrown into engagement with either of the wheels V, W to effect the raising and lowering of the screw-rod and its roll. 6th. In a saw mill, substantially such as described, the combination of a shaft X carrying wheels V, W, screw-rod I carrying a pressure-roll, pinion or friction

wheel J adapted to impart rotation to the rod and shaft Q provided with pinions or friction wheels P, R, the latter arranged substantially as shown and described to be thrown into engagement with either of the pinions or wheels V, W, whereby the screw-rod may be caused to turn in either direction at will and to elevate or depress the pressure-roll. 7th. In combination, with pressure-rolls G, H, and their carrying frames E, F, supporting screw-rolls I, I, nuts K, K, and equalizing beam L carrying said nut at opposite ends, substantially as shown and for the purpose explained. 8th. The combination, substantially as shown and described, of vertical screw-rolls I, I, carrying independent pressure rolls and wheels J, J at front and rear of the frame, adapted to rotate said rods, divided shaft Q, wheels P, P, R, R and S, shaft X provided with wheels V and W, and means, substantially such as described and shown, for moving the sections of shaft Q, whereby either the front or rear set of pressure-rolls may be controlled and made to rise or fall at will. 9th. In combination, with screw-rolls I, I carrying pressure-rolls G, H, nuts K, K encircling the rods and wheels J, J at front and rear of frame A, serving to rotate the screw-rolls, shaft X carrying wheels V, W, divided shaft Q having its two sections arranged, substantially as shown and described, to swing about the respective screw-rolls I, and provided at their inner and outer ends with wheels to engage with, respectively with wheels J, J and V and W, and the levers U, U connected with the respective sections of shaft Q, substantially as and for the purpose explained. 10th. In a saw mill the combination of two independent pressure rolls adapted to act simultaneously upon cuts or logs of unequal thickness carrying frames for said rolls, an intermediate equalizing bar and elastic or yielding connection, substantially such as described, between the equalizing bar and the carrying frames, whereby the rolls are permitted to yield independently and without movement of the equalizing bar in passing over uneven places. 11th. In a saw mill, the combination, with independent press rolls arranged in pairs at front and back of the machine, of four screw-rolls each carrying one of said press rolls, said rods being all threaded in one and the same direction, and means, substantially such as described, for imparting motion to each pair simultaneously as described.

No. 20,071. Combined Milk Cooler and Refrigerator. (*Garde-Lait.*)

Richard M. Rockey, Nora, Ill., U. S., 29th August, 1884; 5 years.

Claim.—1st. In a combined milk-cooler and refrigerator, the combination, with an outer box or casing, of an inner casing constructed of thin sheet metal and arranged within the outer casing to form an air space, and a box or casing arranged upon the side of the inner casing, access being had thereto by means of an opening in the side of said casing, and a door for closing the same, substantially as set forth. 2nd. In a combined milk cooler and refrigerator, the combination, with an outer and an inner casing, of a hinged cover having a lining of sheet metal provided with longitudinal grooves or recesses, and openings in the sides of the cover communicating therewith, substantially as and for the purpose set forth. 3rd. In a combined milk-cooler and refrigerator, the combination, of an outer and an inner casing, a box or casing secured therein, an opening in the side of the inner casing, a door communicating with said box, inlet and outlet tubes suitably arranged, and a hinged cover having a lining of sheet metal provided with longitudinal grooves, the sides of the cover having openings registering with said grooves, substantially as set forth.

No. 20,072. Water Filter. (*Filtre à Eau.*)

William Ball, Lynchburg, Ohio, U. S., 29th August, 1884; 5 years.

Claim.—1st. The combination, with the reservoir, of a filtering receiving tank arranged therein and having its upper end projected above the high water-mark, the said tank being constructed with porous walls and adapted to receive the supply of inflowing water in its upper end, substantially as described and for the purpose specified. 2nd. The combination, with the reservoir and the filtering receiving tanks arranged therein, of the feed pipe having branches leading into said tanks, and provided with a valve at the juncture of said branches, whereby the inflowing water may be directed into one or both of the tanks, substantially as set forth. 3rd. In a reservoir, the combination of the filtering receiving tank or chamber having porous sides and imporous base, and having a tapered discharge-opening formed through its said base, the cross-bar having threaded opening arranged above the discharge-opening, and the tapered plug turning in said discharge-opening and having its stem threaded, as described, and provided with a suitable lever or handle, substantially as set forth.

No. 20,073. Metallic Packing for Piston Rods. (*Garniture Métallique pour Tiges de Pistons.*)

Chauncey W. Mills, Rochester, N. Y., U. S., 29th August, 1884; 5 years.

Claim.—The combination of the plano-convex rings B and D, the split plano-convex ring C, inclosed by, and breaking joints with the ring B, the pressure spring G and the stuffing box inclosing the packing, all constructed and adapted to operate substantially in the manner and for the purpose specified.

No. 20,074. Chronometric or Time Lock. (*Serrure à Mouvement d'Horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 29th August, 1884; 15 years.

Claim.—1st. In combination with a safe, vault or similar structure, a lock having a locking-bolt and a time-movement connected therewith, placed within such structure, and having both its bolt and time-movement isolated from the door and walls thereof, substantially as and for the purpose set forth. 2nd. In combination with the door-movement of a safe or vault door, a lock having a locking-bolt and a time-movement connected therewith mounted upon a support behind such door and isolated therefrom and from the walls of the structure, and made movable for giving entrance to the safe or vault. 3rd. The

combination of a safe or vault door, a time lock mounted on an independent support behind such door, and yielding connections between such lock support and the walls of the safe or vault. 4th. In combination with a lock isolated from the inner walls of a safe or vault, a yielding lock bolt arranged to operate, substantially as and for the purpose set forth.

No. 20,075. Sash Balance.

(*Contre-poids de Croisée.*)

George W. Arnold, Knoxville, Ill., U. S., 29th August, 1884; 5 years.

Claim.—The combination, with the window frame A and sashes B, of the roller C, the springs D attached directly to the latter, and their outer ends provided with a staple E which is driven into the frame, and the cord a also applied directly to the roller and supporting the sashes, all as shown and described.

No. 20,076. Spring Roller for Curtain Fixtures. (*Bâton à Ressort pour Suspension des Rideaux.*)

Benjamin Handforth, Hoboken, N. J., U. S., 29th August, 1884; 5 years.

Claim.—1st. The combination, with the roller spring and spindle, of a coupling-bar having an eye that is loose around the spindle, the projections i, o on the coupling-bar, the pin s in the spindle, the roller end and the offsets d, e, substantially as set forth. 2nd. The combination, in a curtain fixture, of a coupling-bar surrounding the spindle of the fixture, and having twin inclined projections i, o upon opposite sides of the eye of said bar and inclines c upon its arms, the pin s passing through the spindle and between said twin projections, and the surface plate G having depressions therein to form the offsets d, e in said plate to receive the ends of the coupling bar and lock the fixture, substantially as specified.

No. 20,077. Loom. (*Métier de Tisserand.*)

Robert E. Lester and Charles I. Kane, New York N. Y. (assignees of Walter G. Tilton and John W. Clapp, New Haven, Conn.), U. S., 29th August, 1884; 5 years.

Claim.—1st. The curved raceway and shuttle driver, operated by vertically moving fingers, vibrating horizontal lever and a stationary cam, substantially as shown and described. 2nd. The combination, with the main or driving shaft and a clutch on said shaft, one-half of which is formed with a cam course of a vibrating lever operated by one-half of which is formed with a cam course of a vibrating lever operated by the cam on the clutch, a series of weighted and drop levers for controlling the operation of said vibrating lever, and drop-wires adapted to be suspended from the warp-yarns and serving to move the drop-levers on the breakage of the yarns, substantially as shown and described. 3rd. The vertical shaft and cam having flanges on opposite sides, and interchangeable sections forming a variable cam course together with the bowls or rollers at the treadles of heddle frames, substantially as shown and described. 4th. The combination, in the take up motion of a loom, of the take up rolls, an interchangeable cone of gearing wheels, an adjustable pinion and inclined shaft with bevel gears, substantially as shown and described. 5th. The construction and combination of the parts of a loom, substantially as shown and described.

No. 20,078. Device for Securing Churn Covers. (*Appareil pour Assujétir les Couvercles des Baittes.*)

Alfred E. Ames, Toronto, Ont., 29th August, 1884; 5 years.

Claim.—A locking device for a churn cover, the ear or lug E, of the shape shown, having at its side the deep notch s hollowed at the end, as shown, and containing a point of resistance g against the action of the bolts, in combination with the bolts D and handles C, as shown and for the purpose specified.

No. 20,079. Multiple Switch Board Apparatus. (*Appareil de Planches Multiples pour Commutateurs.*)

The Western Electric Company (assignee of Charles E. Scribner), Chicago, Ill., U. S., 29th August, 1884; 5 years.

Claim.—1st. The combination, with the telephone lines and test circuits, of a telephone and battery at each of the multiple boards, and means whereby the circuit of the battery and telephone at any board may be connected to any one of the test circuits. 2nd. The combination, with a telephone line, of a test circuit, said telephone line and its said test circuit being each provided with a connection or terminal on each of two or more multiple switch boards, and means whereby a cross is established between the said telephone line and its said test circuit when connection is made with said telephone line upon either of the boards. 3rd. The combination, with a telephone line and test circuit, of two or more switches, the said switches being on different boards, each of said switches being provided with a terminal for the test circuit, and means whereby a cross or connection is established between the telephone line and test circuit when a connection is made with the line at any one of the switches. 4th. The combination, with each of the multiple switch boards of a telephone exchange, of a battery circuit including telephone test circuits, one for each telephone line, and terminals for the test circuits, one terminal for each test circuit being on each board, whereby a switchman at any given board may make a test to determine whether a cross exists at any other board between any given telephone line and its test circuit. 5th. The combination, with two or more swing jack switches placed on different multiple boards, of a telephone line connected through said swing jacks, and an annunciator to ground a normally open test circuit permanently connected with the insulated frame of each of said switches and con-

necting plugs, whereby when a plug is inserted in any switch a cross is established between the line terminal of the switch and the insulated frame thereof, while the annunciator is cut off and the circuit of the line directed through the plug, substantially as and for the purpose specified. 6th. The combination, with two or more lines, of test circuits, one test circuit for each line, and means whereby any test circuit may be crossed or connected with its line, thereby protecting a line thus crossed from inter-uption. 7th. In a multiple switch board system of telephone exchange, the combination, with switches, one switch for each telephone line up on each board, and a normally open line for each series of switches belonging to a telephone line of connecting plugs and cords, and a ground line branched from the circuit of said connecting plugs, said ground line including a telephone and testing battery, whereby a test may be made with either one of a pair of connecting plugs at any board, substantially as specified. 8th. In a multiple switch board, the combination, with switches having insulated metallic frames, the frames of all the switches of one telephone line being connected together in a series of connecting cords with terminal plugs arranged in pairs, a ground circuit containing a telephone and a testing battery, and means for connecting said ground circuit with any pair of connecting plugs, substantially as and for the purpose specified. 9th. In a multiple switch board, the combination, with spring jacks having insulated metallic frames, the metallic frames of all the spring jacks of one telephone line being connected in a series, as described, of connecting cords with terminal plugs arranged in pairs, a loop key for each pair of plugs, and a pair of calling keys to which a ground circuit containing a telephone and testing battery is normally connected, said calling keys being adapted to be looped into the circuit of any pair of plugs, substantially as and for the purpose set forth. 10th. The combination, with the different multiple switch boards of a telephone exchange, of pairs of flexible cords provided with terminal plugs, a branch circuit to ground including a telephone and test battery, calling keys and loop keys for each pair of cords, and means for normally holding the loop keys of a given pair of cords in the circuit of the calling keys of said pair, substantially as and for the purpose set forth. 11th. In a telephone exchange, the combination, with a multiple switch board provided with switches for the different lines, of testing apparatus consisting of a pair of flexible cords provided with terminal plugs, a branch circuit to ground including a telephone and battery, and switching apparatus for connecting and disconnecting said pair of flexible connecting cords and the said branch circuit, substantially as specified. 12th. The combination, with the telephone lines, of switches provided with insulated frames connecting wires, a card testing apparatus at each board, whereby either plug of a pair may be used to make a preliminary test, substantially as and for the purpose specified. 13th. In a multiple switch board system, a test circuit consisting of a pair of connecting cords and their terminal plugs, a common connecting piece with which the plugs are normally in contact, a ground connection for said common connecting piece and a telephone and test battery included in said circuit, substantially as and for the purpose specified. 14th. The combination at any one of the multiple switch boards of a telephone exchange, of one or more pairs of plugs and cords with a common connecting piece to which the different pairs of plugs are normally connected, and a testing battery and telephone, whereby when either plug of a pair is applied to the switch of a subscriber's line, the telephone and testing battery will be included in the circuit between said plug and the central office ground. 15th. The combination, with the switches, of a multiple switch board, of a circuit including a telephone receiver, a test battery and pairs of cords, and plugs normally in connection with said circuit, whereby a test and connection may be made by means of either one of the plugs or any pair. 16th. The combination, with a pair of connecting plugs and cords and a common connecting piece with which said plugs are normally in contact, of a branched ground circuit, one branch of said ground circuit being connected through a battery to the common connecting piece, and the other branch connected through a normally open listening key to the circuit of the connecting plugs, whereby a connection may be established through the telephone receiver to the connected lines of two subscribers, without including the battery in circuit, substantially as set forth.

No. 20,080. Buckle. (*Boucle.*)

Moses W. Bedding, Highgate, Vt., U.S., 29th August, 1884; 10 years.

Claim.—1st. The improved buckle, herein described, consisting of the box or sleeve A having a link extension *a* and perforations *b*, and the spring B having one end rigidly secured to the sleeve and the other end provided with a lug or pin, substantially as and for the purpose set forth. 2nd. The improved buckle, herein described, consisting of the box or sleeve A formed with a groove *d* and link-extension *a* and perforations *b*, and the spring B fitted to the groove *g* and having one end rigidly secured to the sleeve and the other end provided with a lug or pin, substantially as and for the purpose set forth.

No. 20,081. Machine for Lifting up Horse Power Frames. (*Machine pour Soulever la Cage des Manèges.*)

Joseph Bessette and Solime Bessette (assignees of Louis Deslauriers.) Iberville, Que., 29th August, 1884; 5 years.

Réclame.—La combinaison du levier *e* posé sur un essieu *d*, avec le double disque *f* et *g*, la roue *l* et la crémaillère *i*, les cliquets *j* et *k*, le tout supporté par une plaque *h* et les consoles *c*, tel que ci-dessus décrit et pour les fins indiquées.

No. 20,082. Artesian Well. (*Puit Artésien.*)

Firmin Longtin and Siméon A. Longtin, L'Arrière, Que., 29th August, 1884; 5 years.

Réclame.—Le tube perforé K et les bras S, en combinaison avec la pierre concassée P, les tampons O et T, le tuyau L et la pompe M N Q, le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 20,083. Fence Picket. (*Pieu de Cloture.*)

Francis M. Comstock, Keokuk, Iowa, George Q. Adams, Quincy Ill., Stephen Irwin and Wells M. Irwin, Keokuk, Iowa, U.S., 1st September, 1884; 5 years.

Claim.—A metallic fence-picket having a longitudinal ridge and beaded edges, and provided with recesses for the fence-wires at the edges, and with recesses on the central ridge for the binding-wires, substantially as and for the purpose specified.

No. 20,084. Fence. (*Cloture.*)

Francis M. Comstock, Keokuk, Iowa, George Q. Adams, Quincy Ill., Stephen Irwin and Wells M. Irwin, Keokuk, Iowa, U.S., 1st September, 1884; 5 years.

Claim.—In a wire fence, the combination of the angular metallic pickets having indentations at their edges and apexes, the horizontal wires bent so as to set in the angle of the pickets and rest in the indentations at the edges, and the binding-wires embracing the horizontal wire and resting in the indentations in the apexes of the pickets, substantially as specified.

No. 20,085. Toboggan. (*Traine Sauvage.*)

William F. Hutchins and William H. Whyte, Montreal, Que., 1st September, 1884; 5 years.

Claim.—1st. A toboggan made up of two or more layers of veneer of sheets of wood, arranged so that the grain of the wood in each layer shall run in a direction contrary to that of its neighbouring layer, substantially as described. 2nd. In a toboggan, the combination, with the main body and the side rails C, C' fixed thereto, of the ropes or cords D, D' arranged in loops, substantially as and for the purpose specified.

No. 20,086. Combination Tool.

(*Outil à Combinaison.*)

Frederick W. Ritchie, John Ritchie and Michael L. Ross, Vanceboro Me., U.S., 1st September, 1884; 5 years.

Claim.—1st. The herein described combination tool, consisting of the try-square composed of the tongue B and head A, the head A being fitted with the bevel-bulb *d* and the plumb bulb *e*, and having the longitudinal slot *c* and curved oblique slot *h*, and being reduced in thickness at *f* in combination, with the bevel-blade C, having the longitudinal slot *a* and the bolt and winged nut *g*, whereby said bevel-blade may be clamped at any desired angle and at any part of the length of the oblique curve *h* as shown and described. 2nd. The combination of the try-square A, bevel-bulb *d*, plumb-bulb *e*, bevel-blade C, *d* screw bolt and winged nut *g*, the head A being reduced in thickness from *f* to the rounded end and formed with the oblique curved slot *h*, whereby greater variety of movement is permitted to the blade C. 3rd. In a combination tool composed of the try-square A, B having the bevel-bulb *d* and plumb-bulb *e*, and level blade C having the slot *a*, the head A formed with the retreating shoulder *f* and the oblique curved slot *h* to allow a greater variety of movement to the blade C, as shown and described, all as shown and described and as and for the purpose hereinbefore set forth.

No. 20,087. Lifting Jack. (*Cric.*)

Martin Smith, Waynesburgh, Penn., U.S., 1st September, 1884; 5 years.

Claim.—1st. In a lifting jack, the combination, with a lever A, of the supporting arms B, C pivoted to the outer end thereof, and an arm D pivoted to the lever A and arm C, substantially as shown and described and for the purpose set forth. 2nd. The combination, with the lever A, of the supporting arms B, C pivoted to the outer end thereof, and an arm D pivoted to any one of a series of openings on the lever A at one end and formed at its lower end with an elongated slot in which works a beaded pin projecting from the arm C, substantially as shown and described and for the purpose set forth.

No. 20,088. Locomotive Attachment.

(*Levier de Locomotive.*)

Orlando Wetmore, Moads, Mo., U.S., 1st September, 1884; 5 years.

Claim.—1st. The combination, with a locomotive and its tender, of a rock shaft bearing in the locomotive frame and connected by suitable means to the tender, said rock shaft having a lever arm connected at one end to a shaft having pinion gearing, with a pinion on the driving shaft having a friction roller adapted to bear against one of the driving wheels, substantially as and for the purpose set forth. 2nd. The combination, with a locomotive and its tender, of a rock shaft bearing in the locomotive frame and connected by suitable means to the tender, said rock shaft having a lever arm connected at one end to a shaft having a pinion, a second shaft having a pinion and a friction roller wheel, and the hand lever connected to a slide supporting the friction wheel end of the latter shaft, as set forth. 3rd. The combination of the shaft *f* provided with the arm *i*, the shaft D, the friction wheel E, the drum *e* and the lever *b*, substantially as shown and described, with a locomotive for utilizing a portion of the weight of the tender, as specified.

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

- No. 257. THE SWANSCOT MACHINE CO., (Assignee) 2nd 5 years of No. 10,325, from the 7th day of August, 1884. Improvements on Upright Steam Boilers or Water Heaters, 1st August, 1884.
- No. 258. W. MORRISON, (Assignee) 2nd 5 years of No. 10,333, from the 7th day of August, 1884. Improvements in Pumps known as Submerged Pumps, 7th August, 1884.
- No. 259. O. D. SPALDING and L. C. BARNETT, 2nd 5 years of No. 10,374, from the 19th day of August, 1884. Improvements on Grain Elevators, 12th August, 1884.
- No. 260. W. R. WHITE, 2nd 5 years of No. 10,360, from the 14th day of August, 1884. Improvements in Fences, 13th August 1884.
- No. 261. S. Y. LOVE, 2nd 5 years of No. 10,411, from the 2nd day of September, 1884. Improvements on Sewing Machine Attachments, 14th August, 1884.
- No. 262. J. M. ORAM, 2nd 5 years of No. 19,529, from the 9th day of June, 1889. Improvements in Telephone Time Signal System, 14th August, 1884.
- No. 263. J. RYAN, (Assignee) 2nd 5 years of No. 10,382, from the 25th day of August, 1884. Machine for Working Sheet Metal, 18th August, 1884.
- No. 264. W. ABERCROMBIE, 3rd 5 years of No. 3,767, from the 22nd day of August, 1884. Improvements in Sash and Door Clamps, 22nd August, 1884.
- No. 265. E. P. CARTER, 2nd 5 years of No. 10,392, from the 27th day of August, 1884. Improvements on Waggon Springs, 26th August, 1884.
- No. 266. L. COTÉ, 2nd and 3rd 5 years of No. 19,821 from the 17th day of July, 1889. Improvements in Apparatus for Impressing or Marking and Smoothing Leather, &c., 26th August, 1884.
- No. 267. G. GALE, 2nd and 3rd 5 years of No. 15,410, from the 2nd day of September, 1887. Improvements on Machines for Coiling Wire, 28th August, 1884.
-

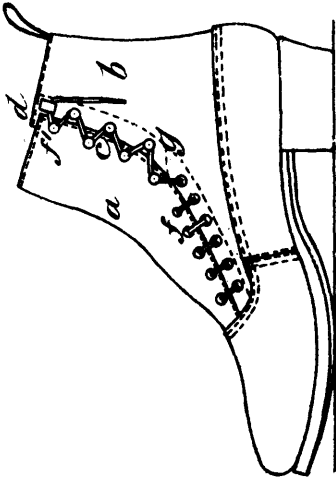
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

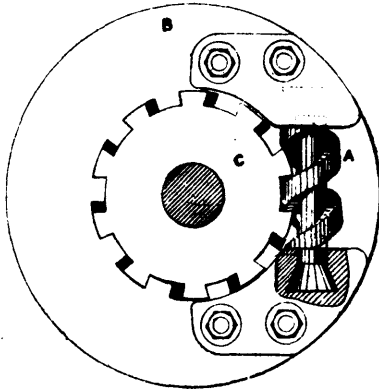
Vol. XII.

SEPTEMBER, 1884.

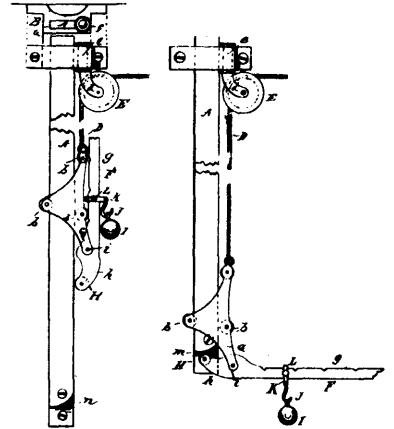
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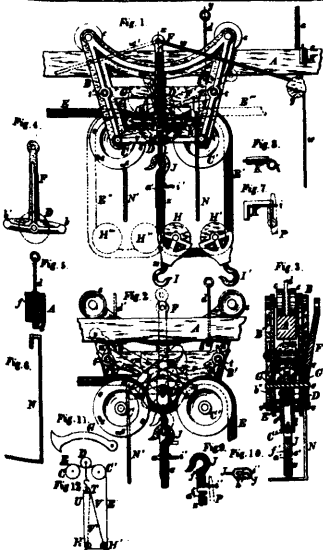
18870 Laycock's Boots and Shoes.



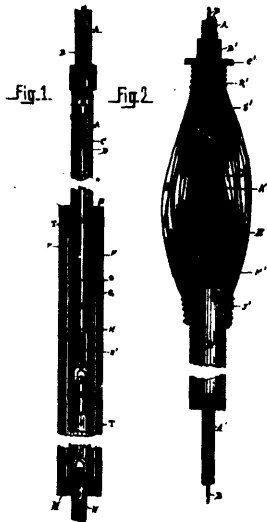
18871 Settle's Tricycle and like Velocipede.



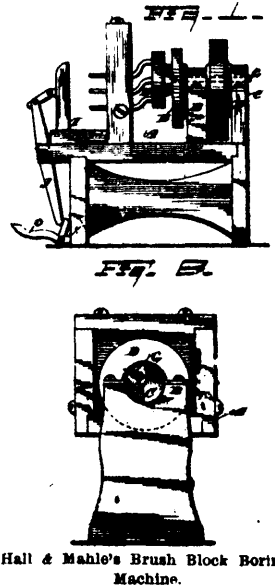
18872 Holwell's Automatic Door Closer



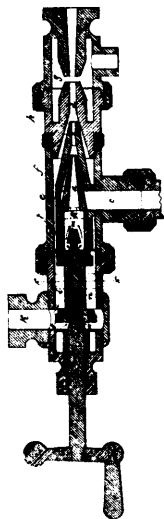
18873 Ricker's Hay Carrier.



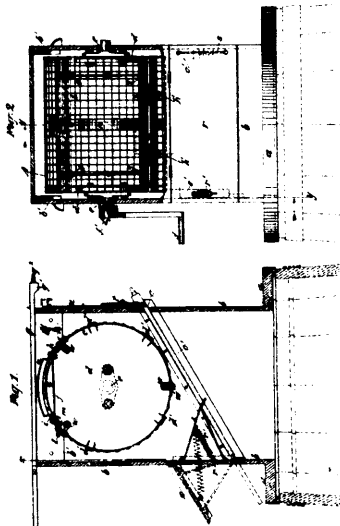
18874 Hoskins' Pump for Oil Wells.



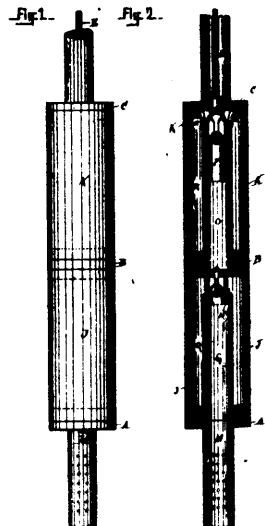
18875 Hall & Mahle's Brush Block Boring Machine.



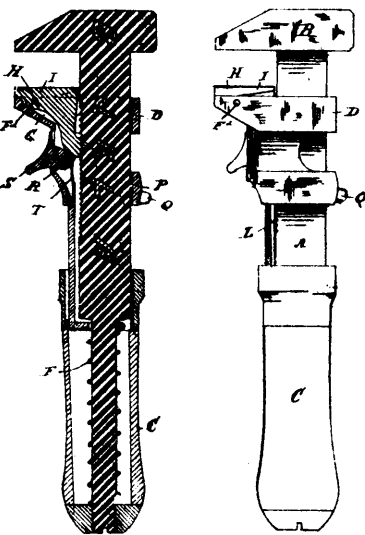
19876 Messinger's Injector.



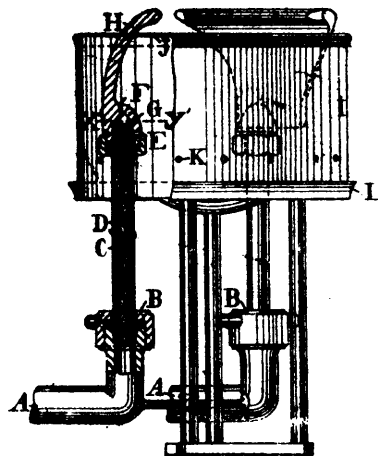
19877 Cook's Ash Sifter.



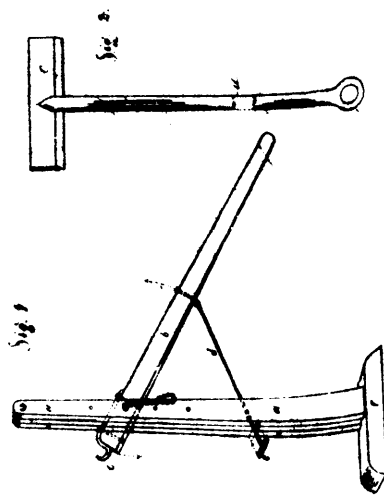
19878 Walker's Pump for Oil Wells.



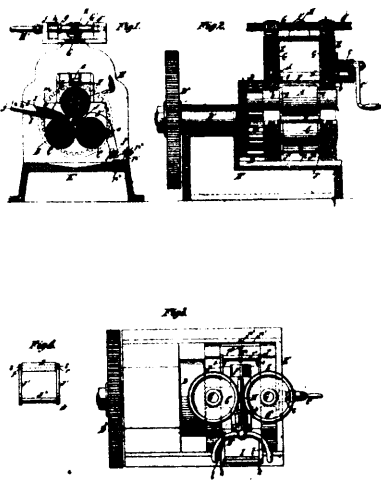
19879 Stockford's Wrench.



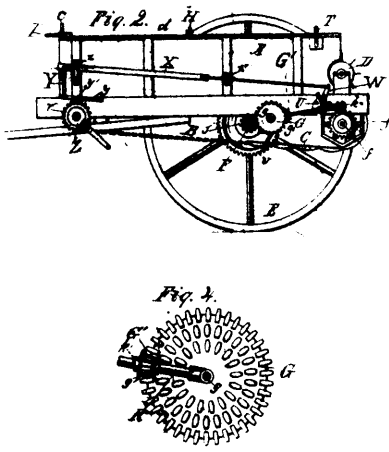
19880 Lyth's Burner and Lamp for Mineral Oils, &c.



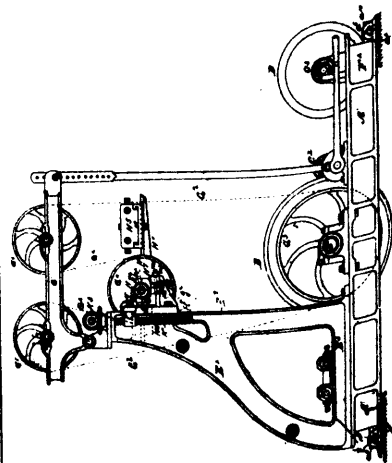
19881 Field's Water Jack.



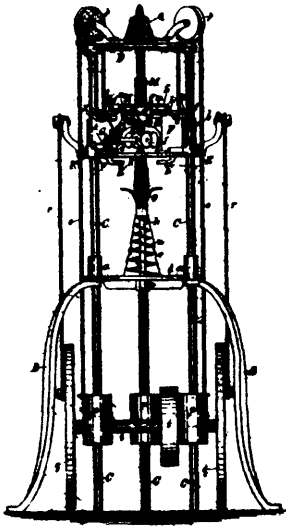
19882 Wilmot's Rolling Mill and Roll therefor.



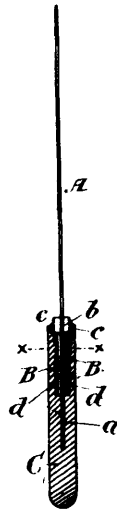
19883 Kemp's Fertilizer Distributer.



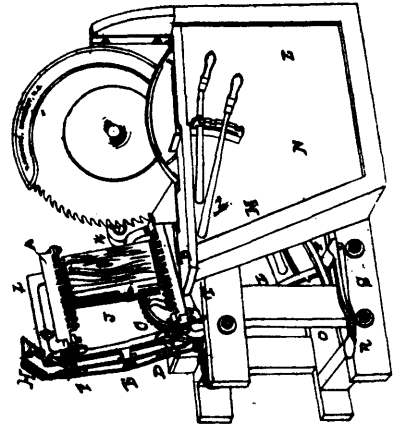
19884 Esplin's Circular Saw Mill.



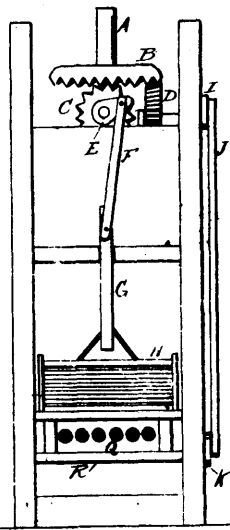
19885 Warfield's Green Corn Cutter.



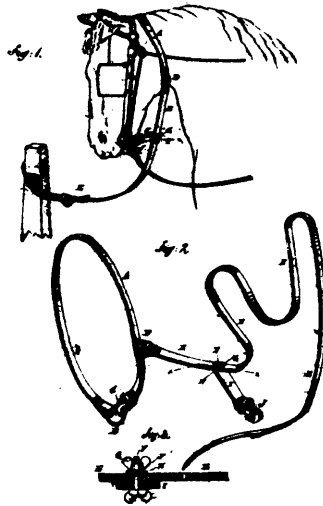
19886 Wingfield's Improvements in Cutlery.



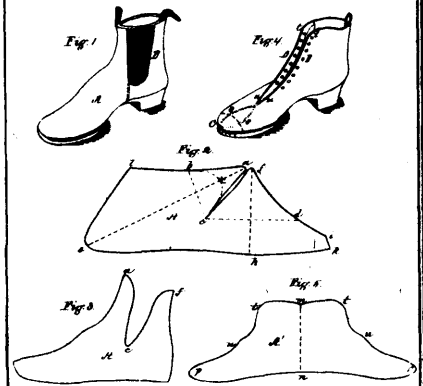
19887 Hodgson's Shingle Machine.



19888 Foster's Brick Machine.



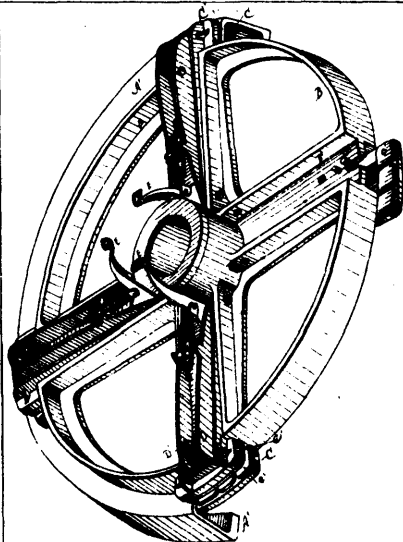
19889 Birdsall's Hitching Strap.



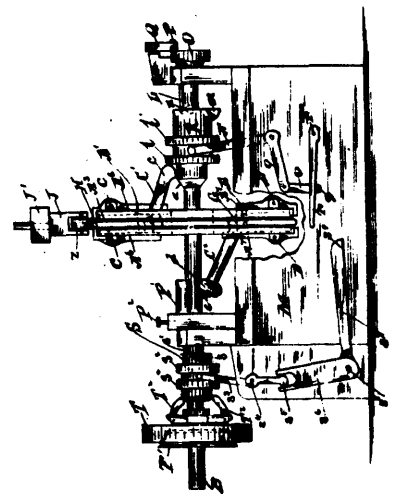
19891 Crowe's Shoe.



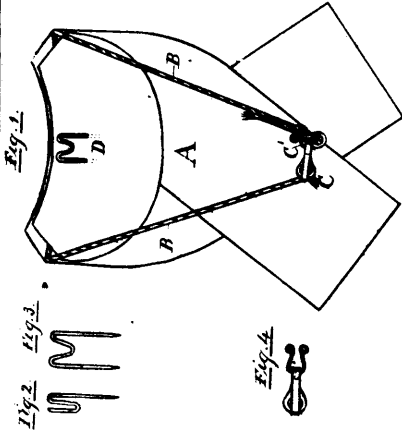
19892 Rhodes' Post-Hole Digger.



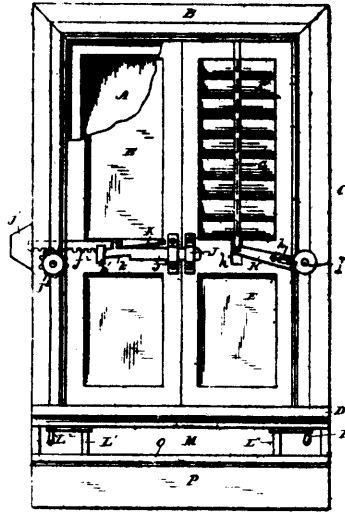
19893 Crowell's Friction Clutch.



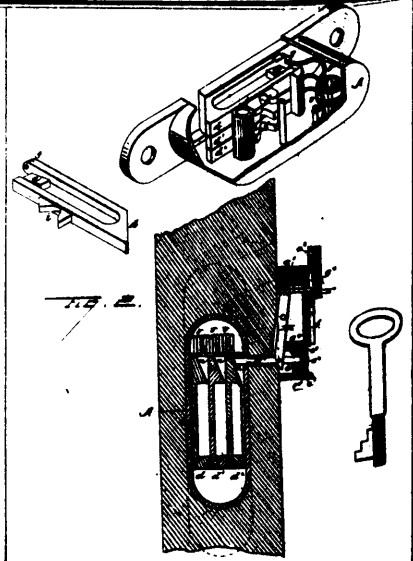
19894 Hainault's Machine for Making Hay Rake Teeth.



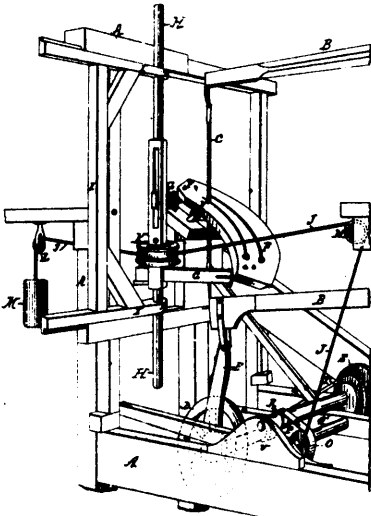
18895 Williamson's Bow and Scarf.



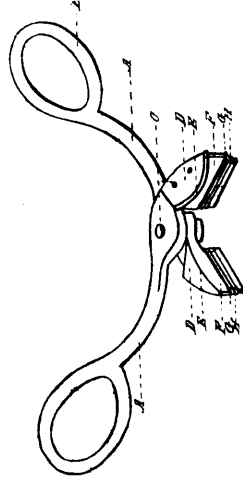
18896 Hunsicker's Shutter Operating and Locking Device.



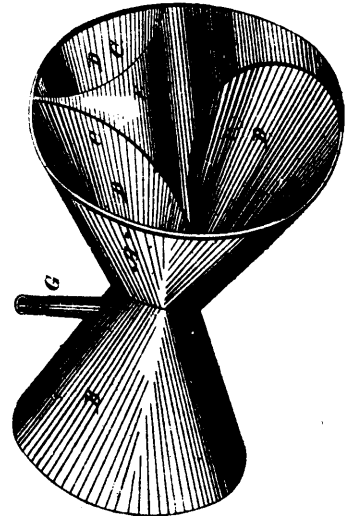
18897 Walker's Seal Lock.



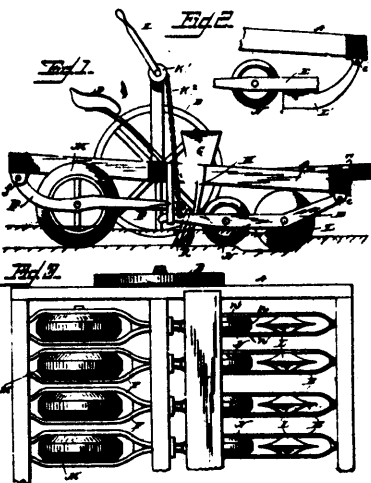
18898 Hopkins' Scroll Sawing Machine Attachment.



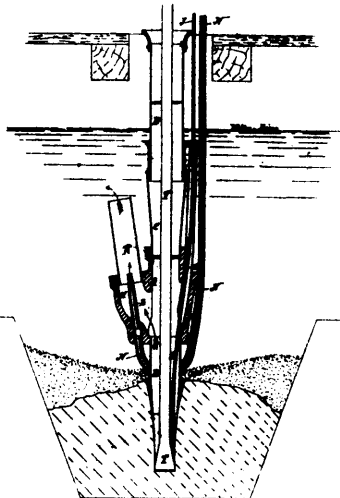
18899 Howell's Shears or Clips.



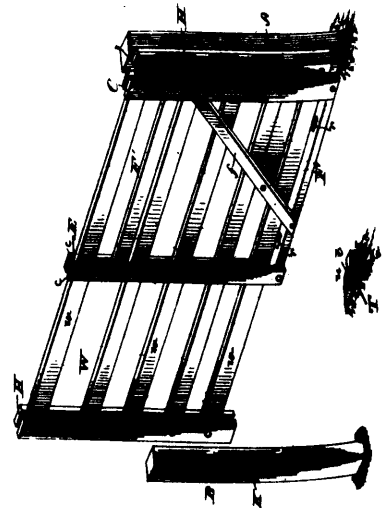
18900 Richards' Furnace Blower.



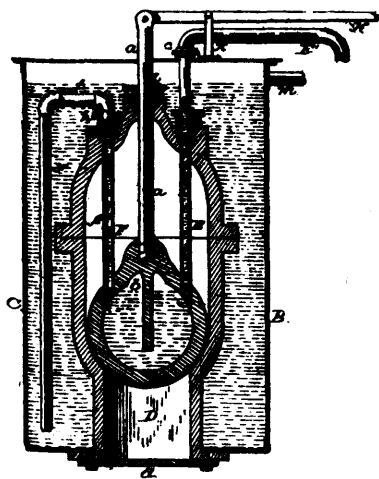
18901 Newton's Seed Planter.



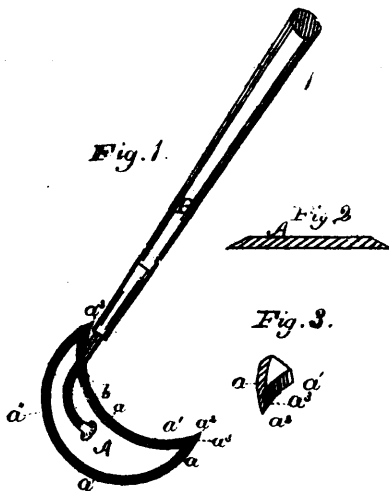
18902 Stirling's Pipe Casing for Submarine Rock Drilling.



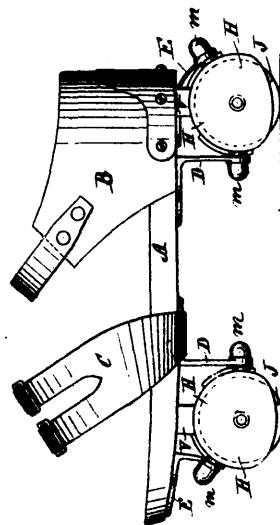
18903 McClaskey's Sliding Gate.



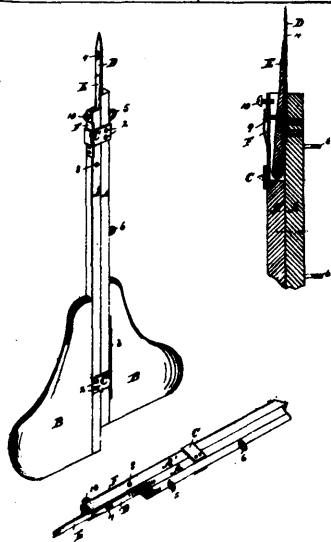
18904 Hanlon's Water Cooled Valve for Gas Manufacture.



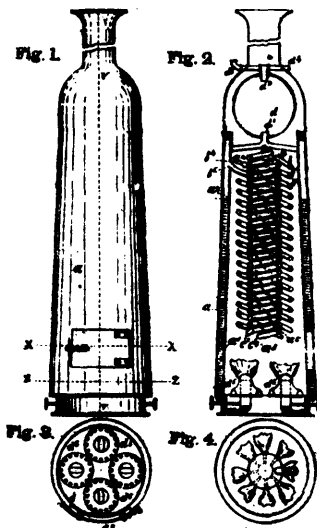
18905 Still's Scuffle hoe.



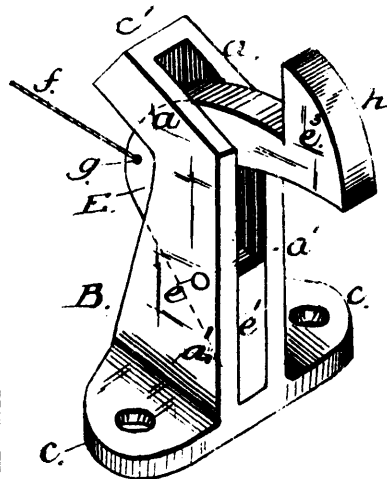
18906 Dean's Skate.



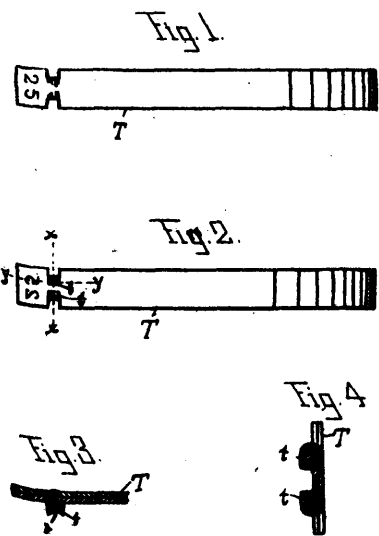
18907 Fields' Hand Embroidering Machine.



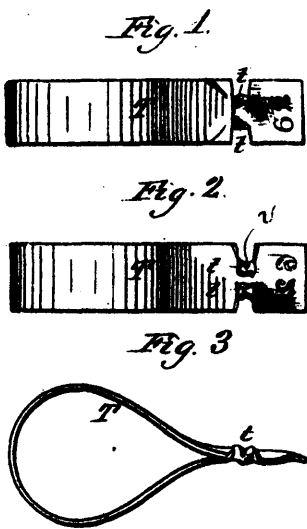
18908 Venater & Weller's Steam Generator.



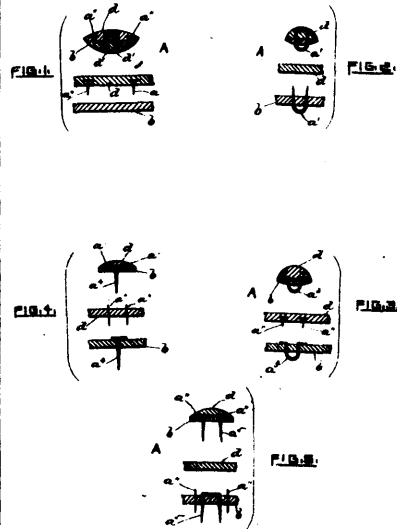
18909 Lamb's Door Catch.



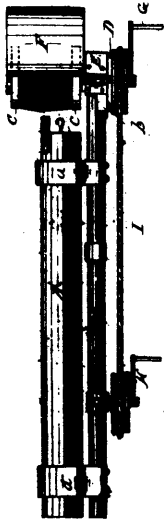
18910 Malone & Whiting's Car Seal.



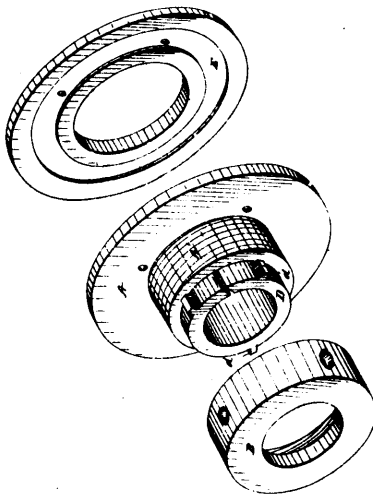
18911 Malone & Whiting's Method of Attaching Seals to Cars.



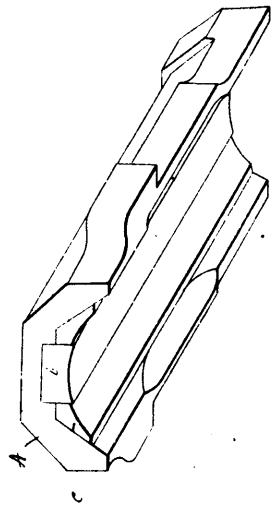
18912 Prentice's Button.



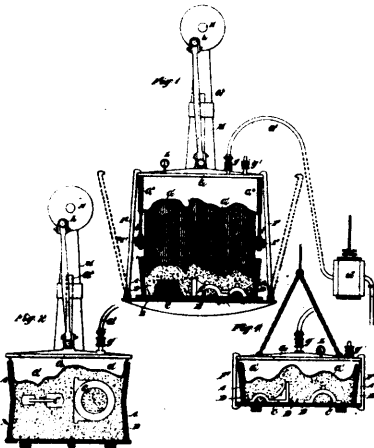
19913 Brown & Durgin's Machine for Painting Wire Fences.



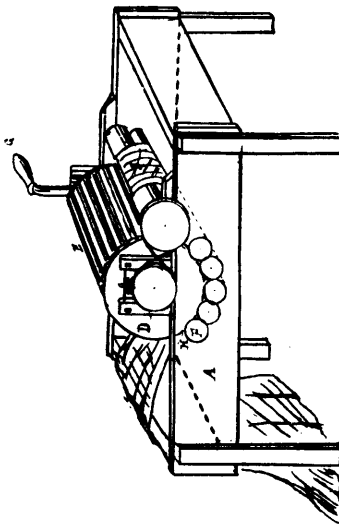
19914 Crowell's Taper Sleeve Fastening for Machine Pulleys, &c.



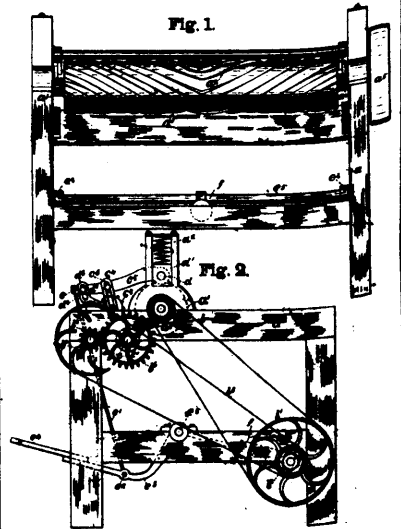
19915 Hardy's Car Axle Box.



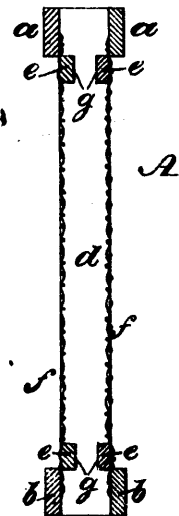
19916 Moore's Machinery for Tamping or Ramming Moulds for Castings.



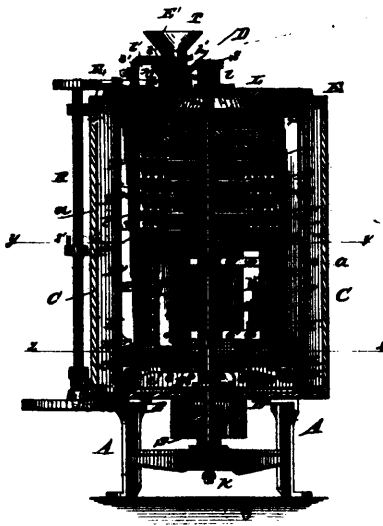
19917 Wood's Washing Machine.



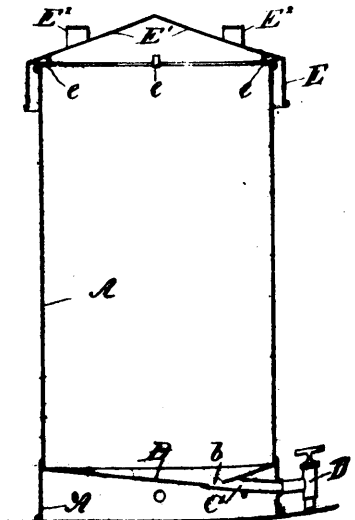
19918 Hoffman's Putting-out Machine.



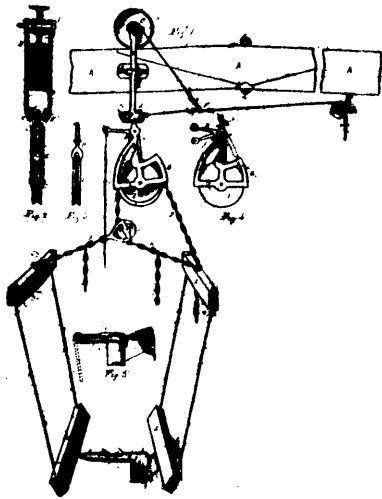
19919 Roberts' Window or Insect Screen.



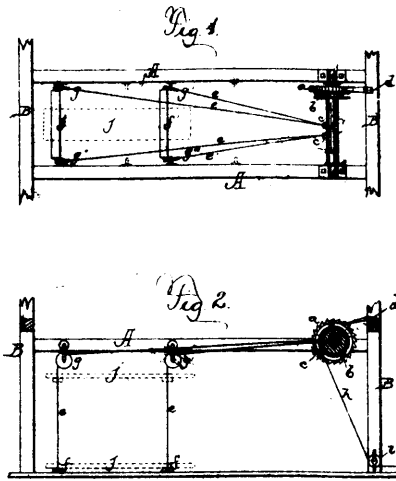
19920 Hogeboom & Smith's Machine for Dusting Bran.



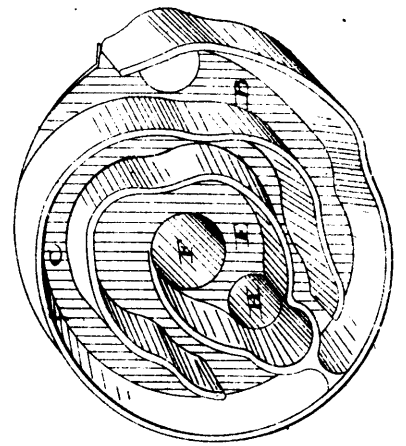
19921 Sturgeon's Creamer.



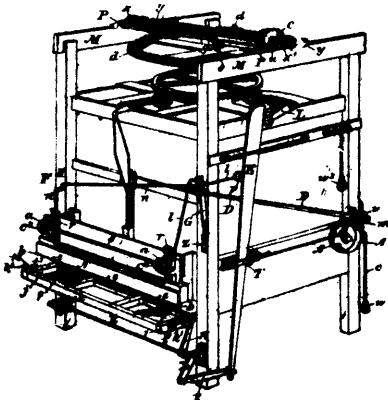
18922 Newell's Machine for Unloading Hay.



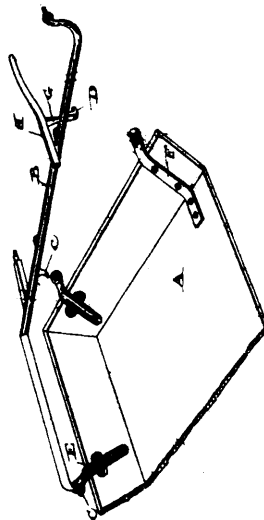
19923 Pegg's Hay Rack Elevator.



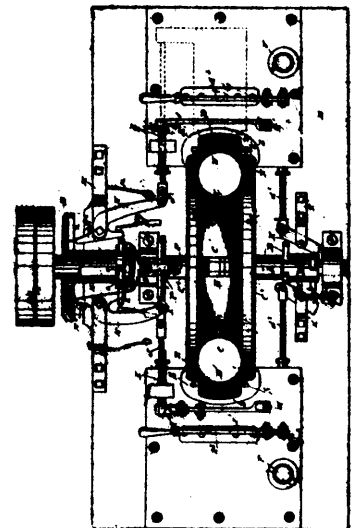
48924 Dennis' Washing Machine.



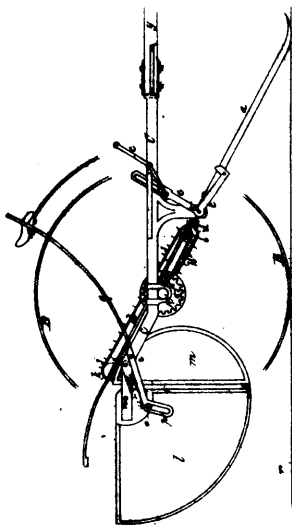
18925 Martin's Brick Machine.



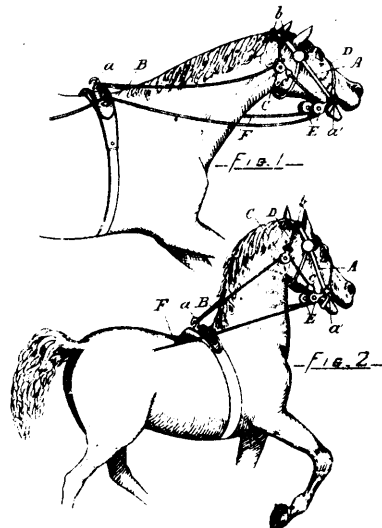
19926 Champion & Metcalfe's Buggy Top Attachment.



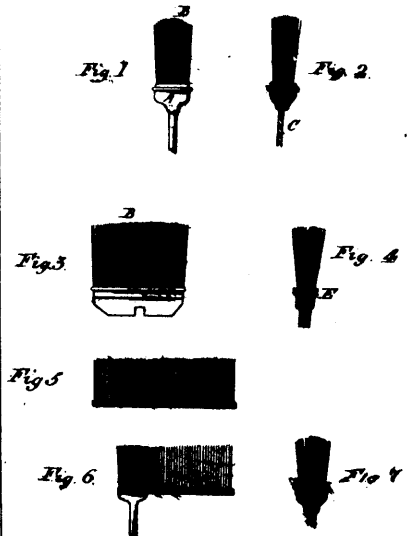
19927 McColgan's Rotary Engine.



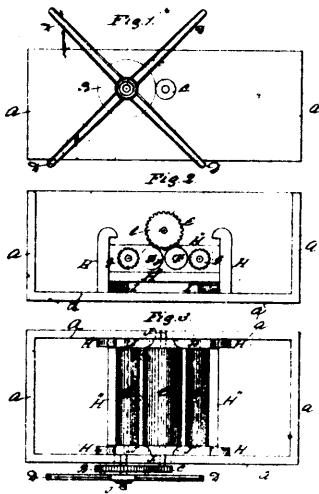
18928 Ramsden's Horse Rake.



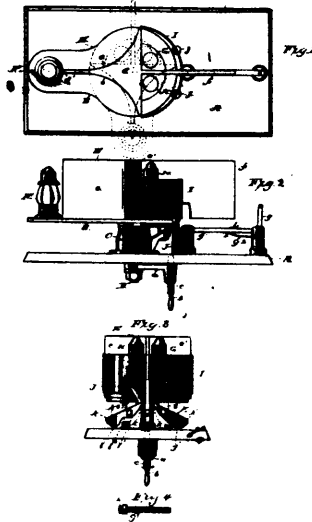
19929 Mace's Check Line for Horse Bridle.



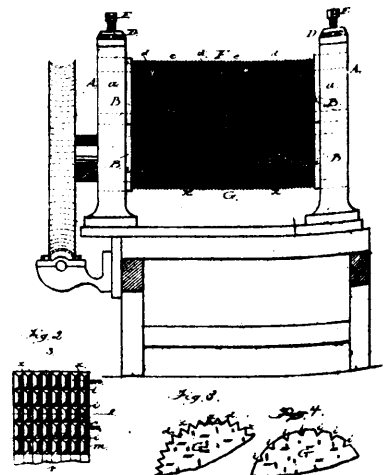
18930 Read's Brush.



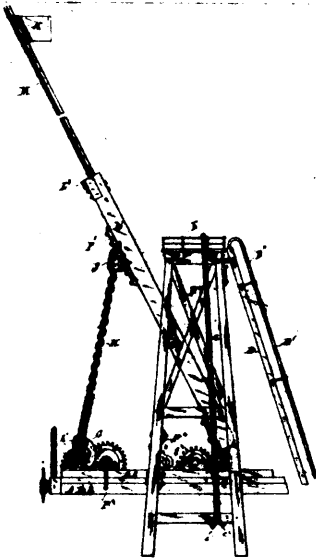
19931 Jacob's Washing Machine.



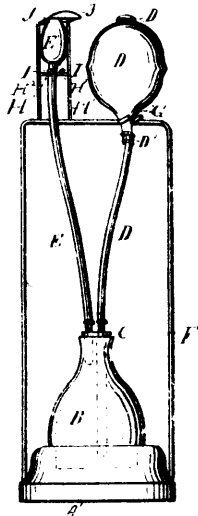
19932 White's Nautical Signal.



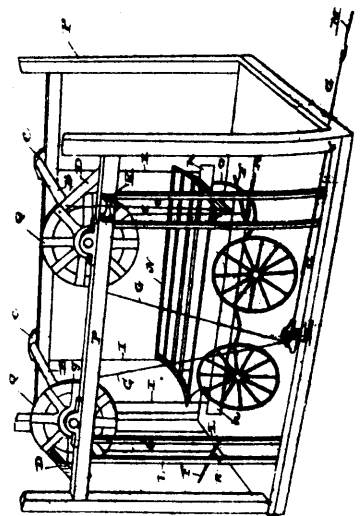
19933 Hyatt's Machines for Perforating Sheet Metal.



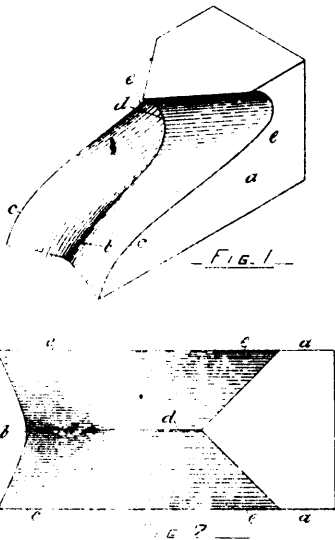
19934 Kim's Combined Fire-Escape and Hook and Ladder.



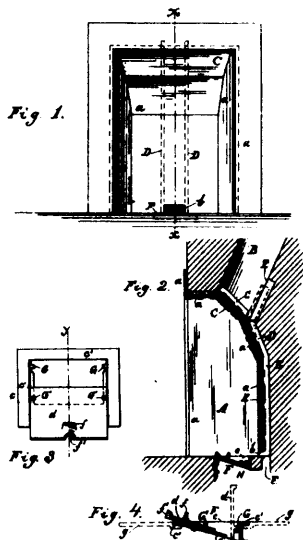
19935 McGregor's Air Medicator and Injector.



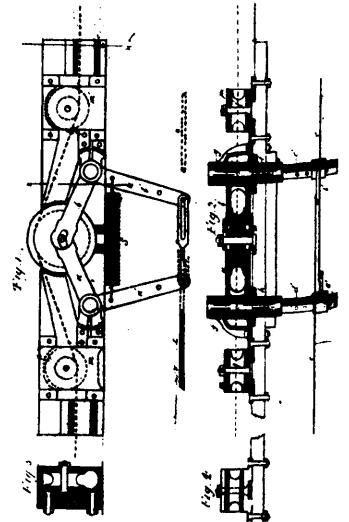
19936 Williamson's Hay or Grain Rack Lifter.



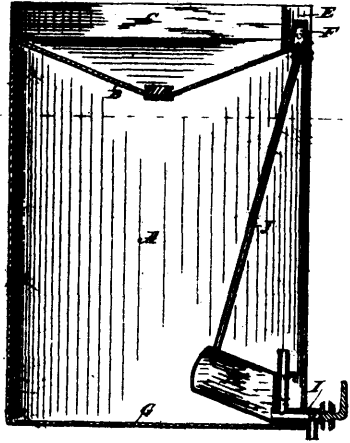
19937 Buists' Railway Snow Plough.



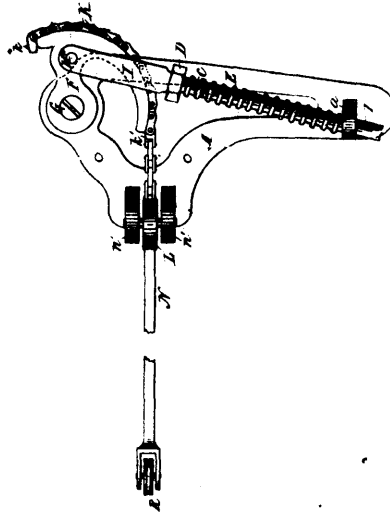
19938 Page's Fire-place.



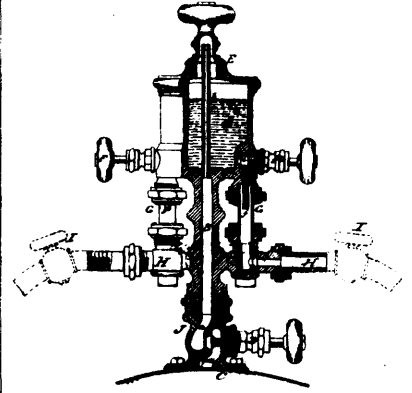
19939 Gill's Brake for Railway Cars.



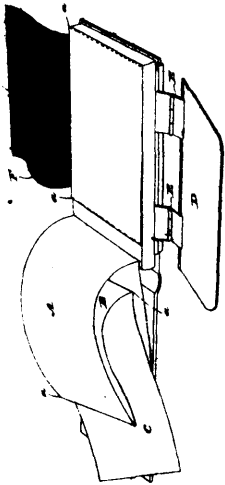
18940 Prax's Automatic Liquid Measure.



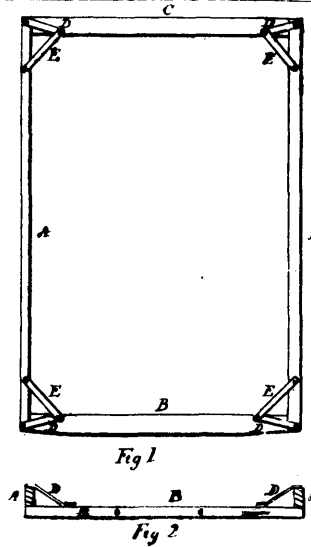
18941 McAleer's Door Spring.



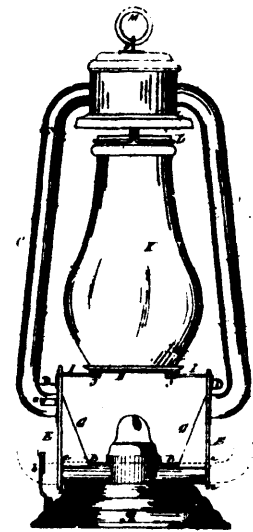
18942 Boyden's Lubricator.



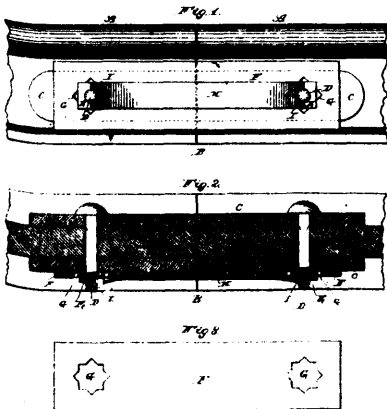
18943 Cooper's Black Leaf Check Book.



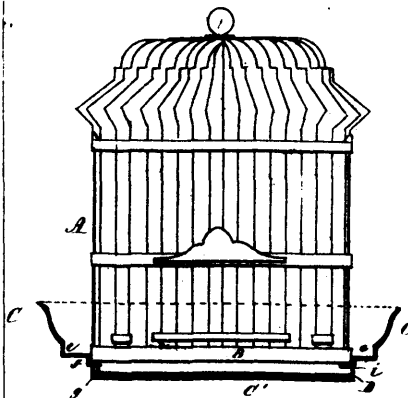
18944 Knowlton's Frame for Bed Bottoms.



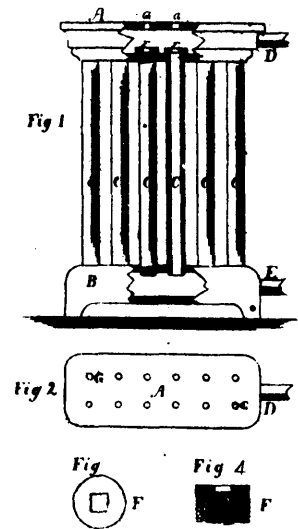
18945 Stone's Tubular Lantern.



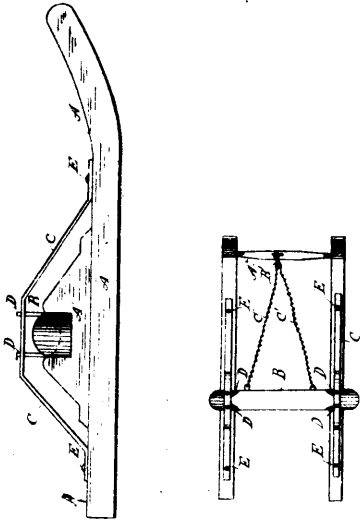
18946 Ladd's Nut Lock.



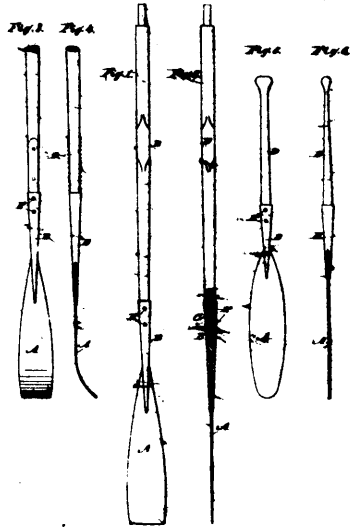
18947 Schultz's Bird Cage.



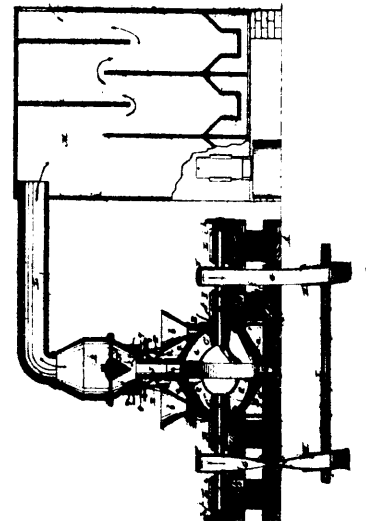
18948 Longard's Heat Radiator.



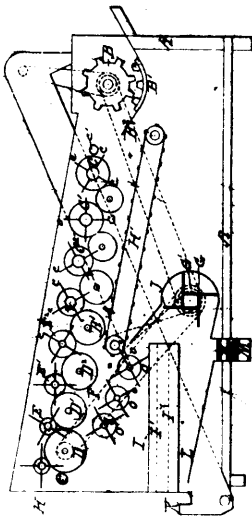
19949 Harding's Bob Sleigh.



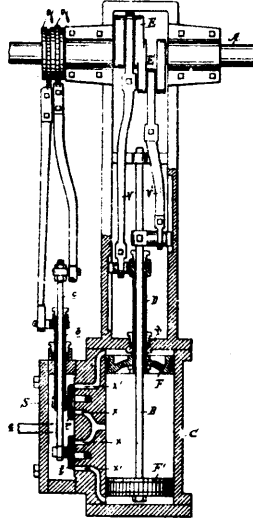
19950. Stanton's Oar.



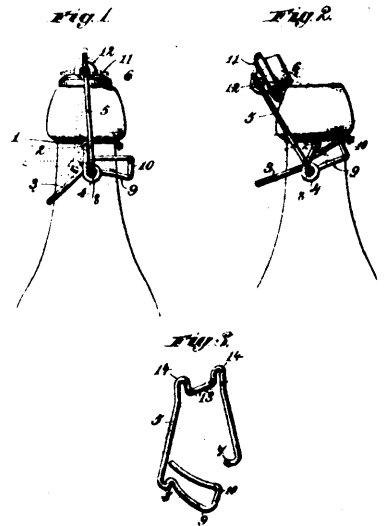
19951 Raymond's Machine for Reducing Ores, &c.



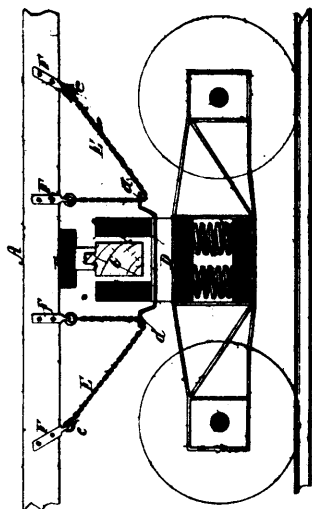
19952 Bonnett's Threshing Machine.



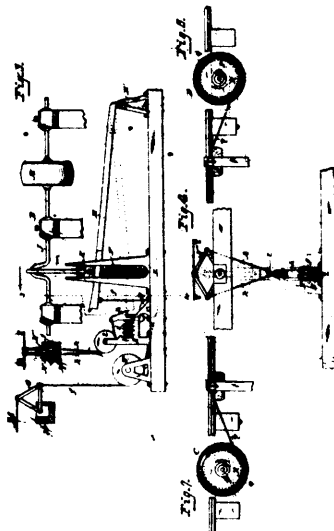
19953 Field's Balanced Steam Engine.



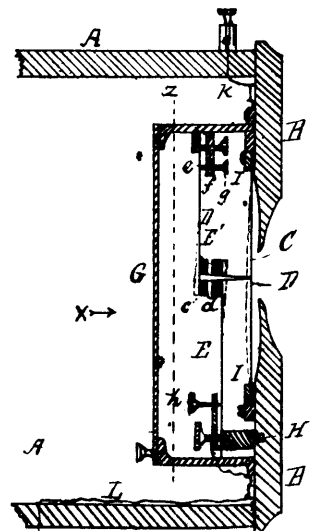
19954 Joe's Bottle Stopper.



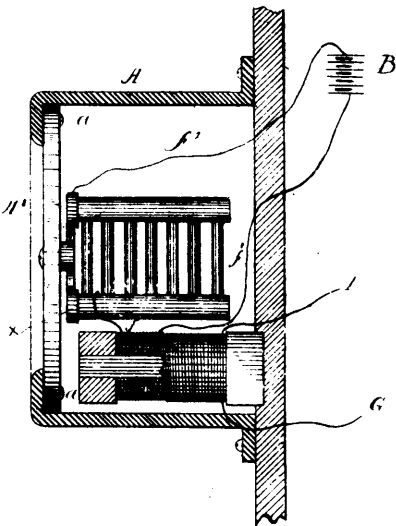
19955 Conway's Railway Car.



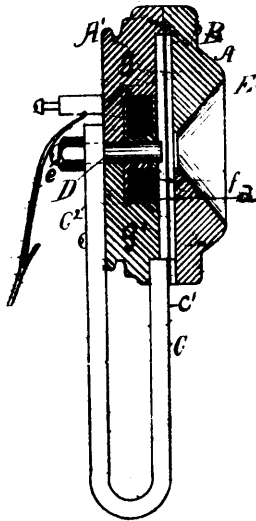
19956 Tregear's Automatic Railway Signal.



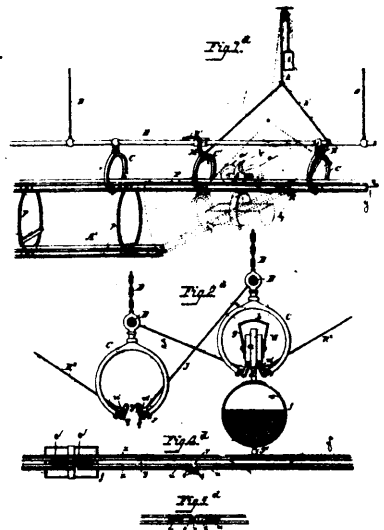
19957 Kingsbury's Electrophone Transmitter.



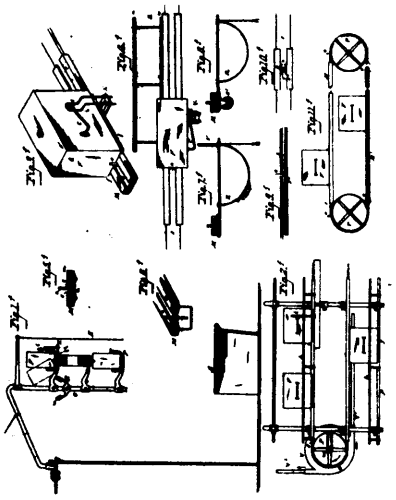
19958 Wright's Telephone Transmitter.



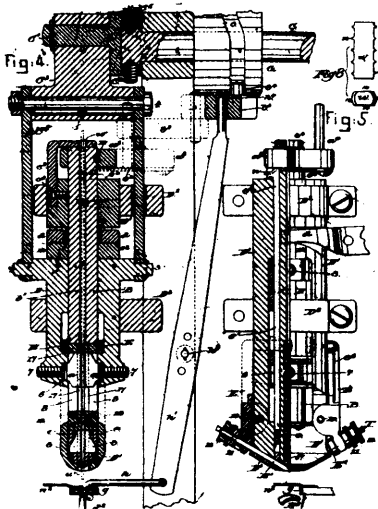
19959 Wright's Telephone Receiver.



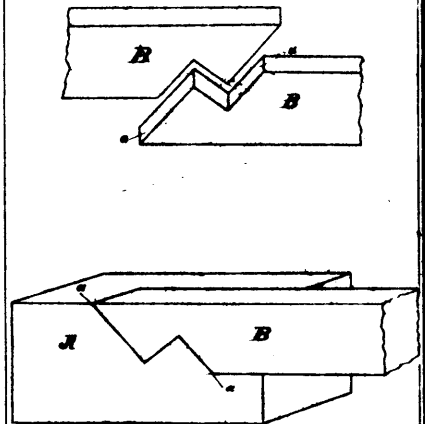
19960 Hayden's Store Service Apparatus.



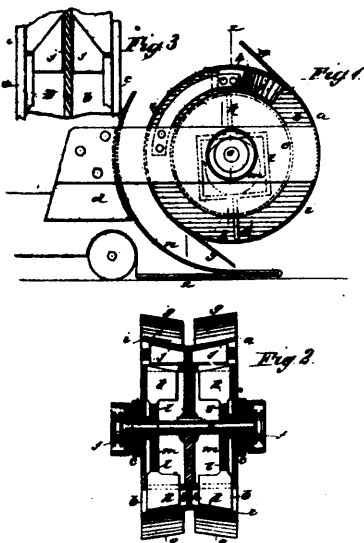
19961 Hayden's Store Service Apparatus.



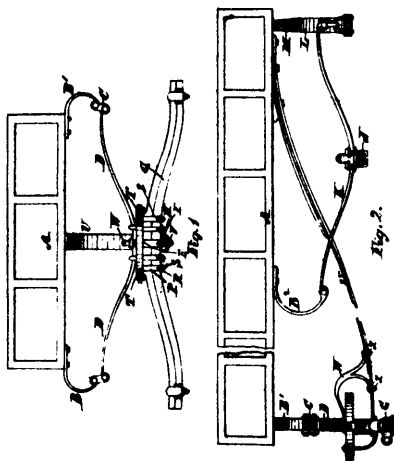
19962 Robinson's Machine for Uniting the Uppers and Soles of Boots, &c.



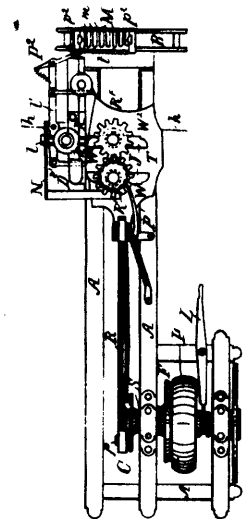
19963 Vernon's Method and Process of Welding Steel and Iron.



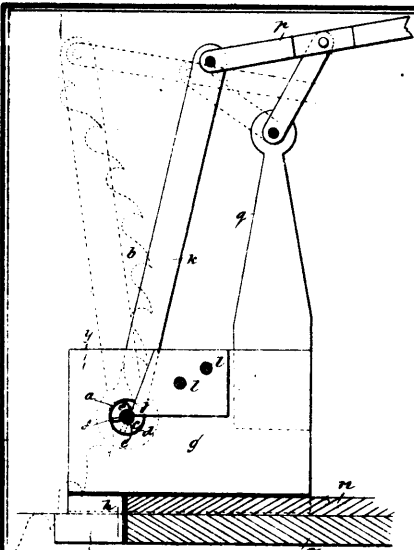
19964 Day's Snow Plough.



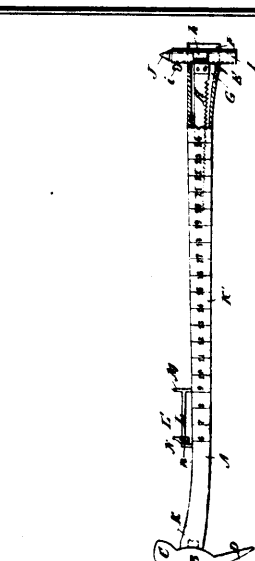
19965 Ackland's Carriage Running gear.



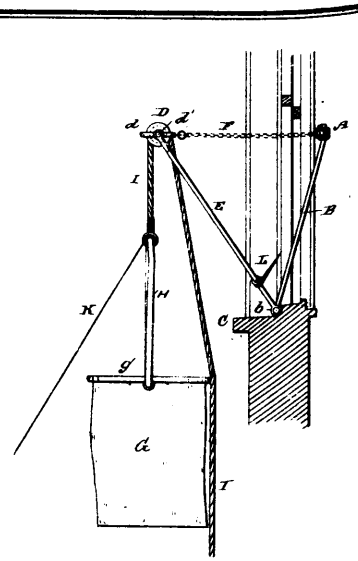
19966 Cook & Labell's Match Slicing and Racking Machine.



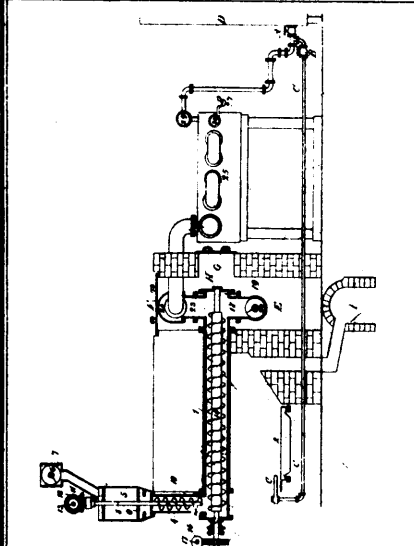
19967 Gano's Saw Tooth Swage.



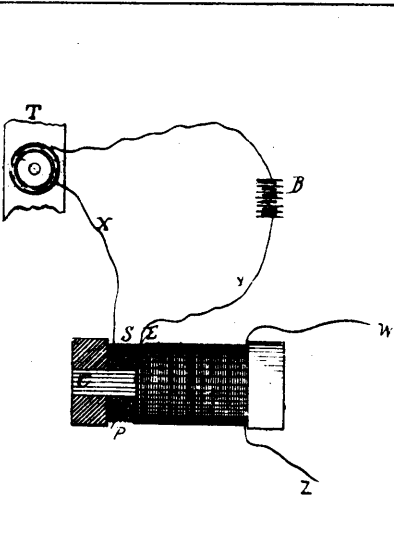
19968 Call's Combination Tool.



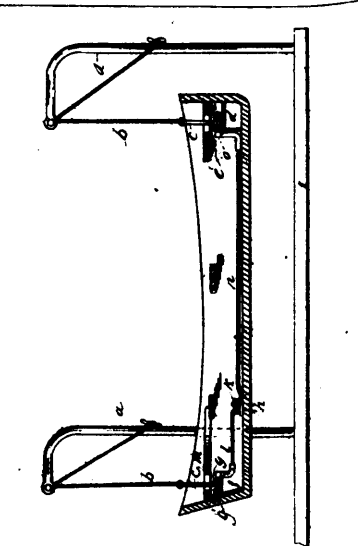
19969 Hale's Domestic Fire Escape.



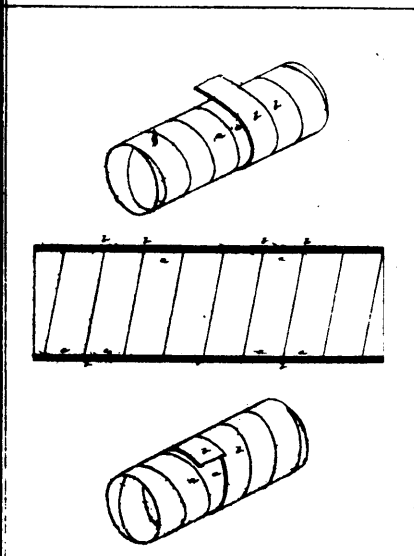
19970 Walker's Apparatus for Producing Gas from Saw Dust.



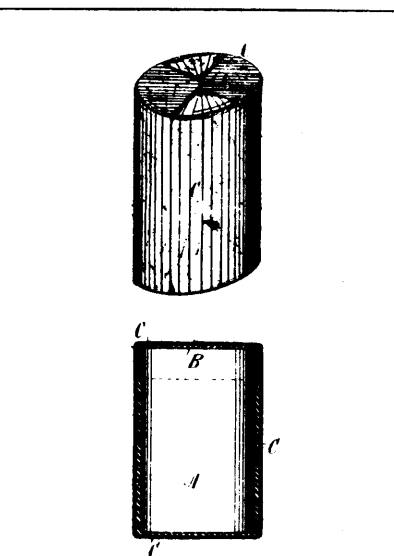
19971 Wright's Induction Coil.



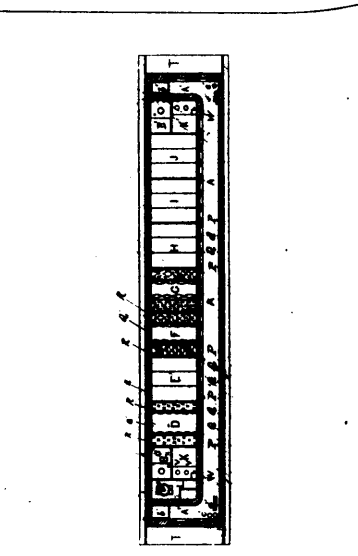
19972 Post's Boat Detacher.



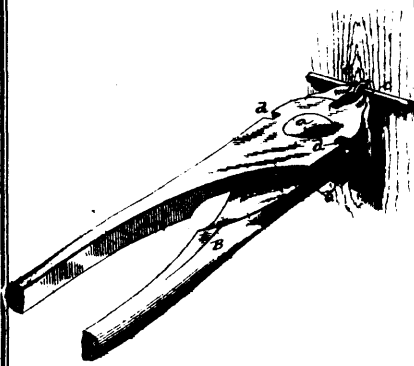
19973 Cox's Sheet Metal Tube or Cylinders.



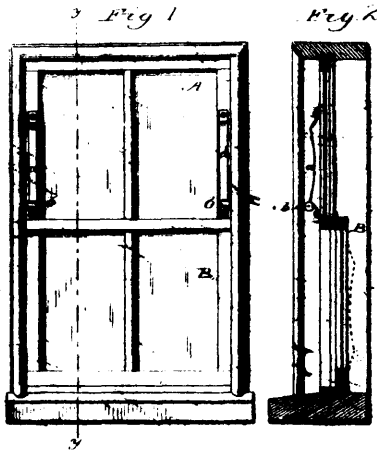
19974 Mayo's Tobacco Package.



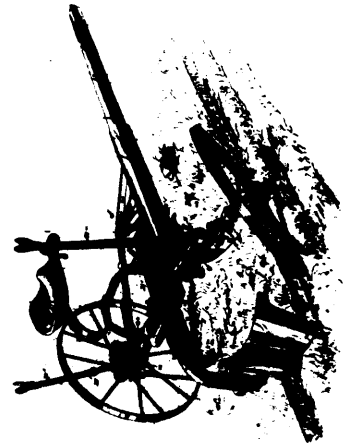
19975 Holmes' Railway Car.



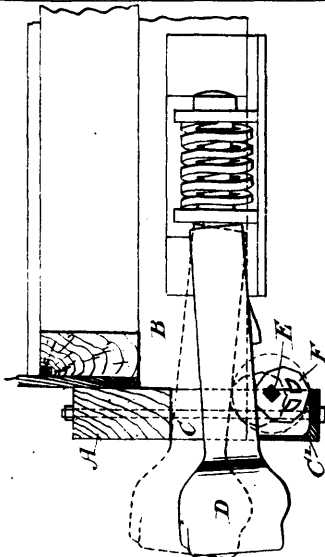
19976 Beazley's Combination Tool.



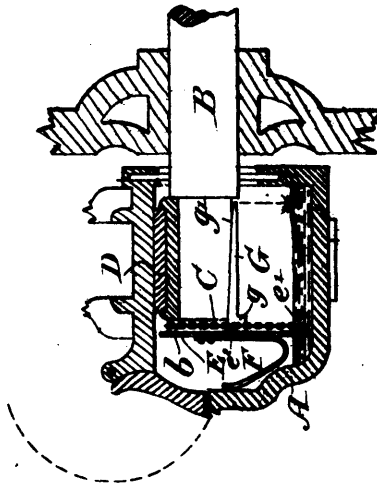
19977 Gorham's Sash Holder.



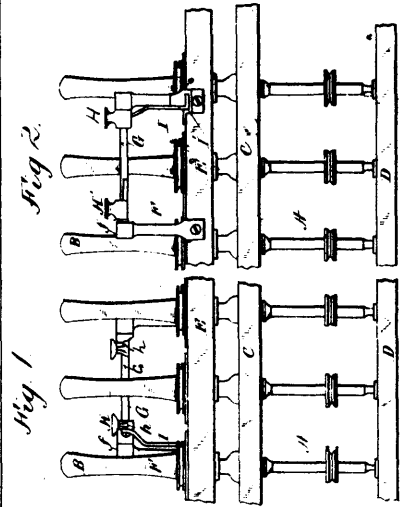
19979 Casaday's Sulky Plough.



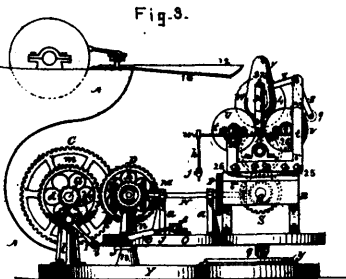
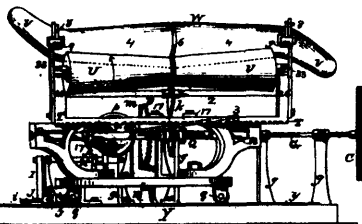
19980 Conway's Device for the Adjustment of Draw Bars of Railway Cars.



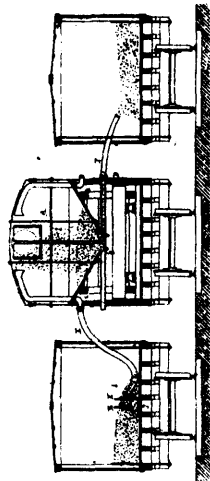
19981 Page & Goulliond's Car Axle Lubricator.



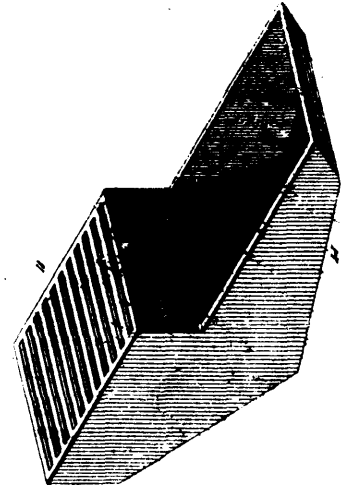
19982 Prest's Thread Guard for Ring Spinning Frames.



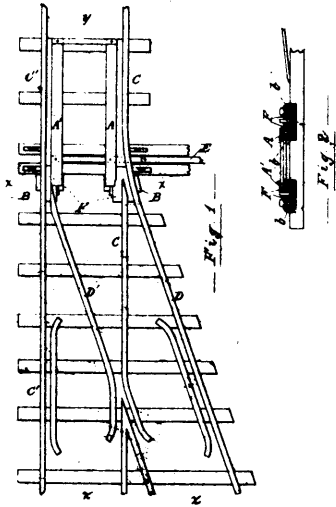
19983 Brandy's Machine for Making Felt Boots, &c.



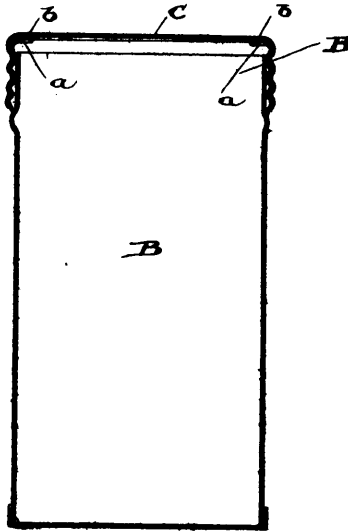
19984 Smith's Pneumatic and Automatic Grain Transfer Apparatus.



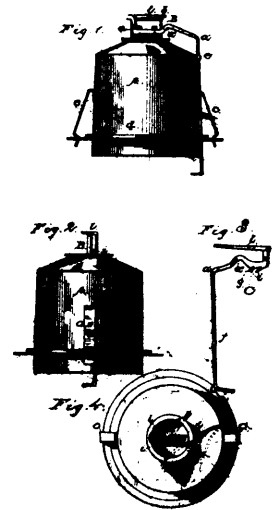
19985 Kane's Feed Box for Horses.



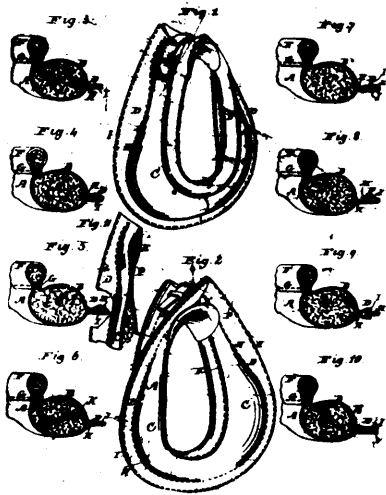
19986 Roy's Railway Switch.



19987 Jones' Sheet Metal Can.



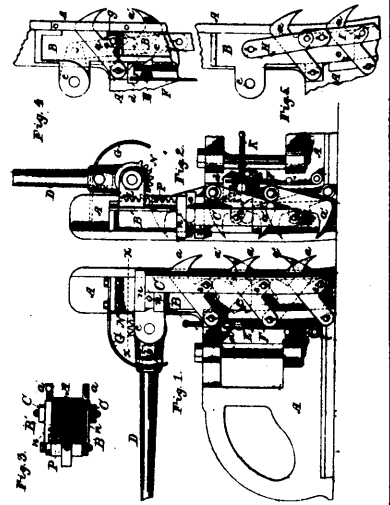
19991 Mack's Wick Adjuster and Trimmer.



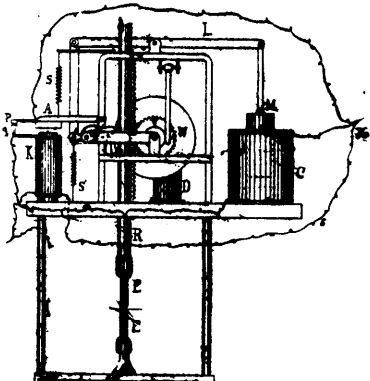
19992 Porter's Horse Collar.



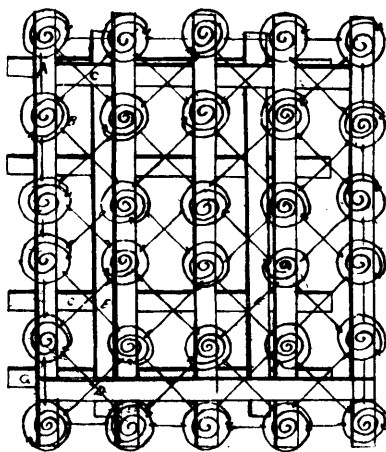
19993 Mann's Window for Railway Cars.



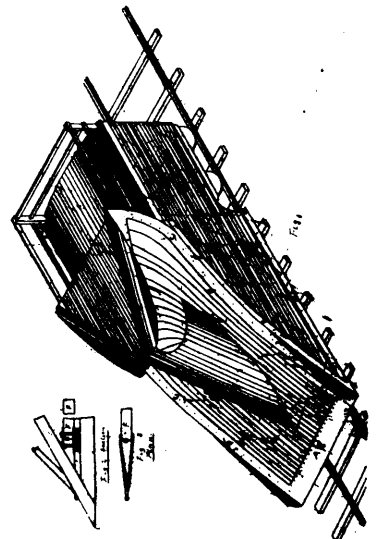
19994 Gowen's Saw Mill Dog.



19995 Thomson's Electric Lamp.

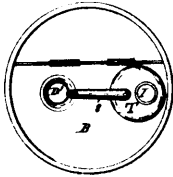


19996 Fuller's Spring Bed Bottom.

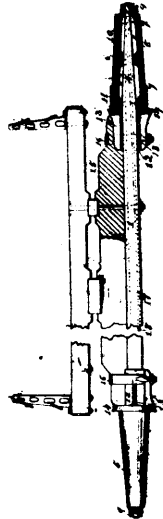


19997 Russell's Snow Plough.

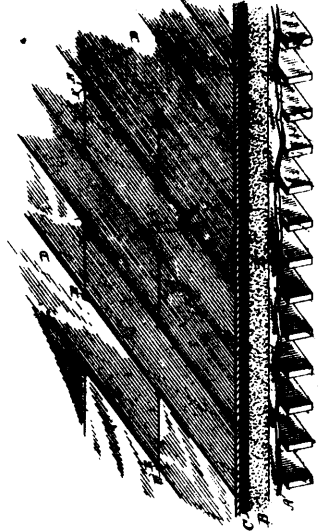
Fig. 1.



19998 Turner's Bottling Apparatus.



19999 Klopp & Therien's Vehicle Axle.



20000 Ham's Flooring for Buildings, &c.

Fig. 1.

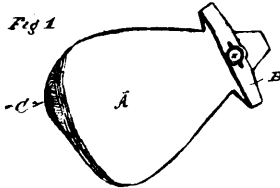
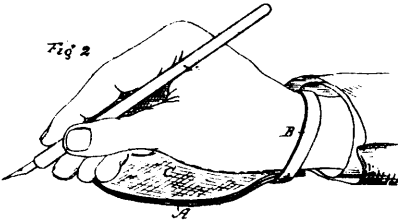
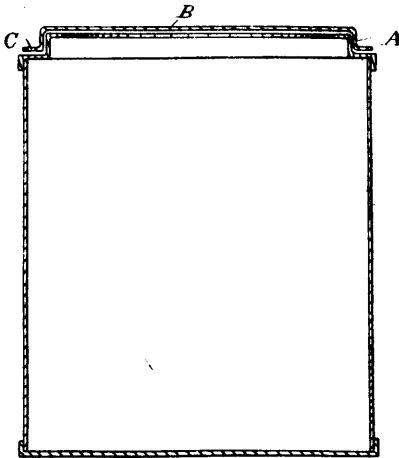


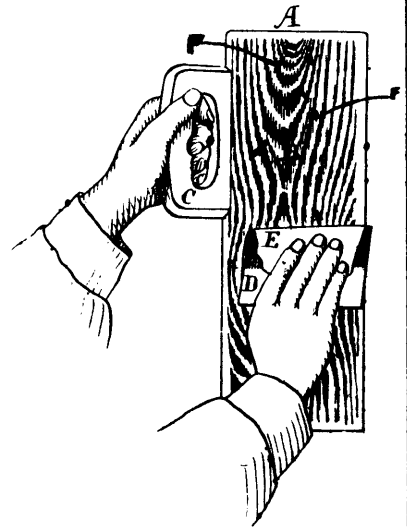
Fig. 2.



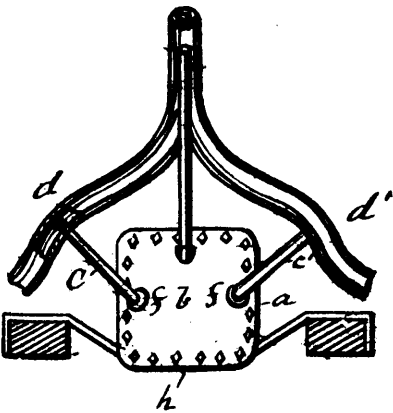
20001 Cowan's Shield and Blotting Pad.



20002 Ross' Sheet Metal Plug for Metal Vessels.



20003 Callow's Stencil Plate for Graining and Imitating Wood, &c.



20004 Magoon's Feed Water Heater.

Fig. 1.

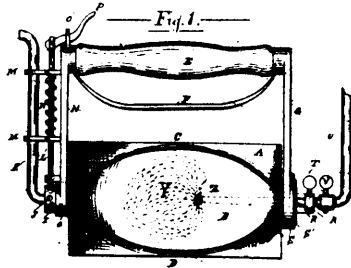
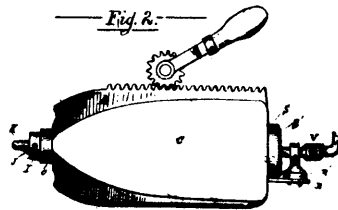
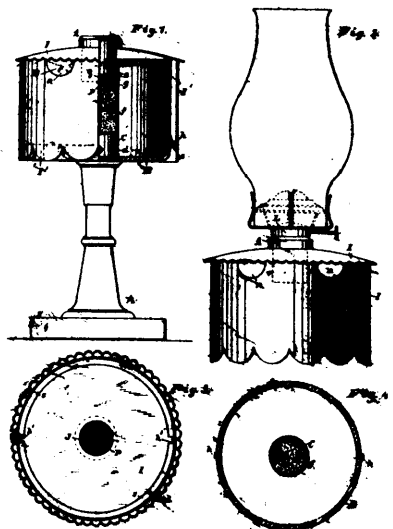


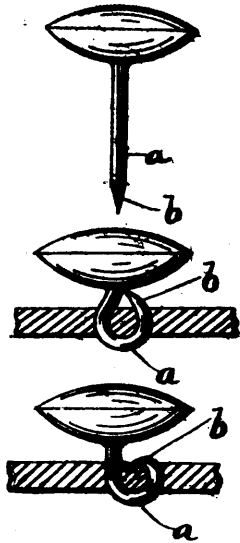
Fig. 2.



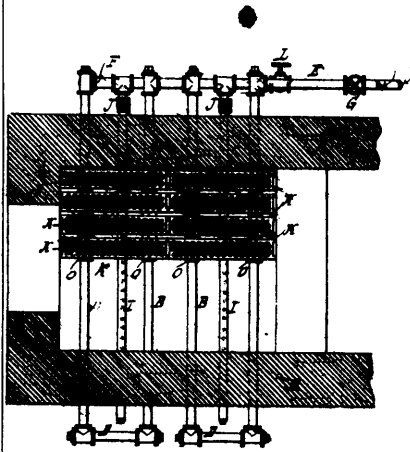
20005 Martel's Revolving Sad Iron.



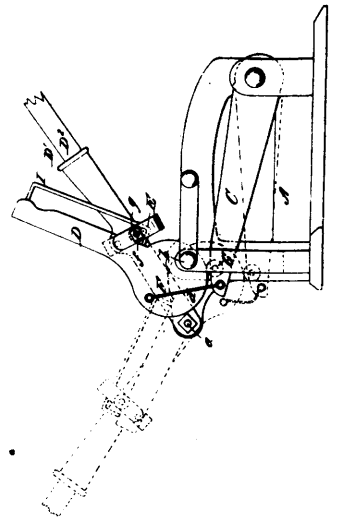
20006 Ramage's Lamp.



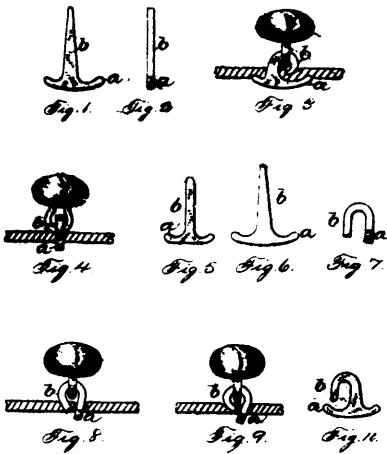
20007 Prentice's Method of Attaching Buttons.



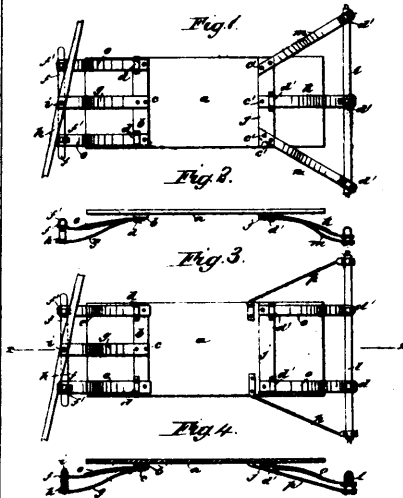
20008 Peaslie's Furnace.



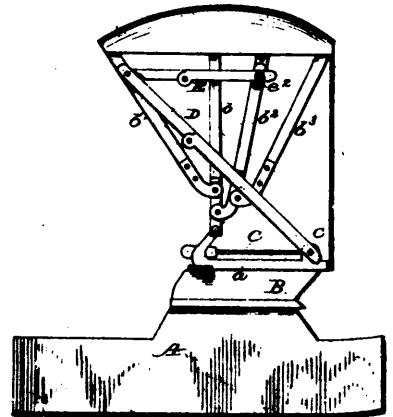
20009 McDonald's Metal Working Machine.



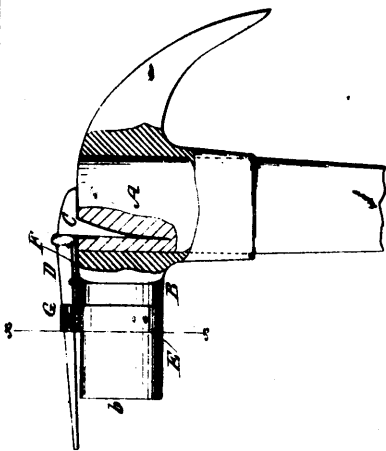
20010 Kempshall's Button Fastener.



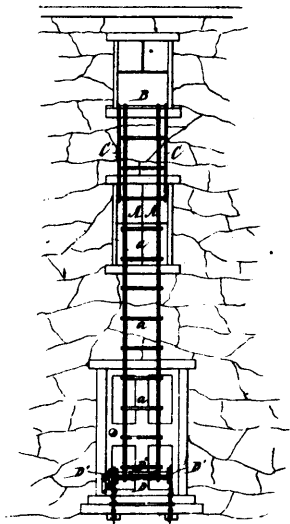
20011 Lockwood's Buckboard Wagon.



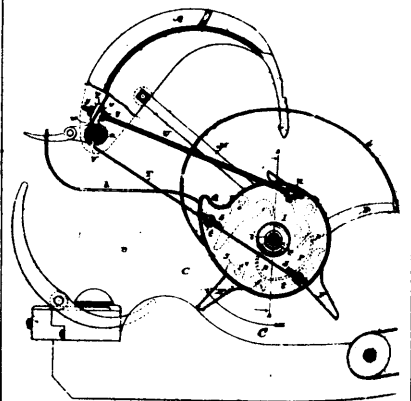
20012 Cochran's Buggy Top.



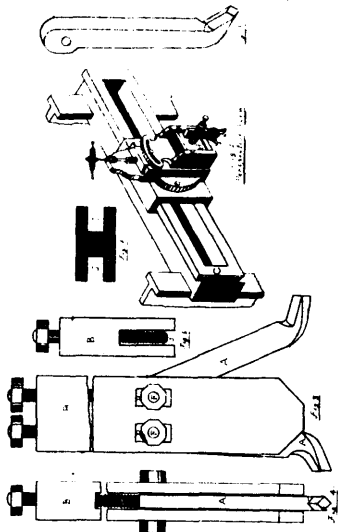
20013 Barber's Nail Holding Attachment for Hammers.



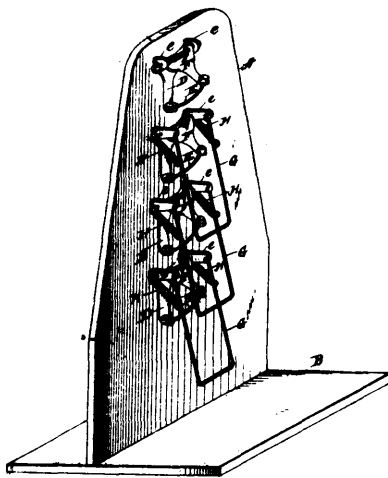
20014 Belt's Fire Escape.



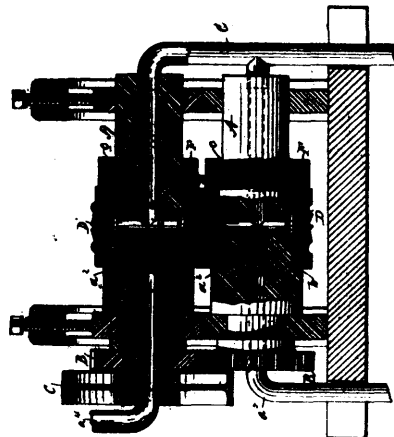
20015 Davis' Gravelling Mechanism for Grain Binders.



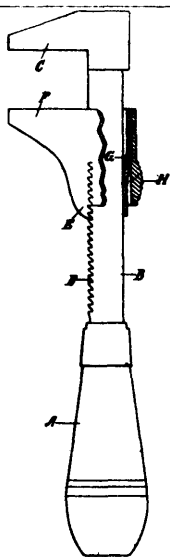
20016 Farmer's Iron Working, Planing and Shaper Machine.



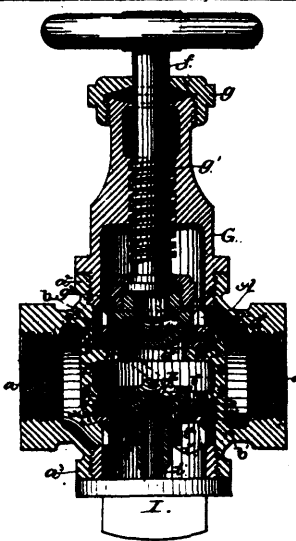
20018 Butland's Paper Bag Holder.



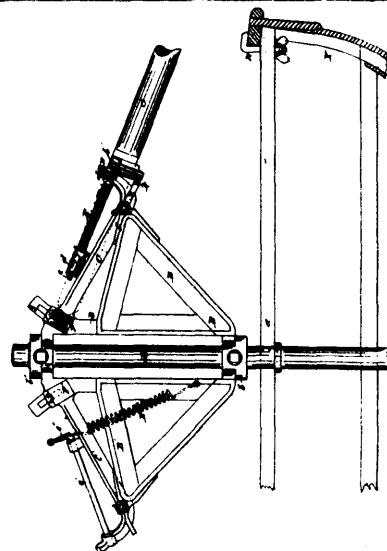
20019 Lynch & Heath's Machine for Pressing Gimp.



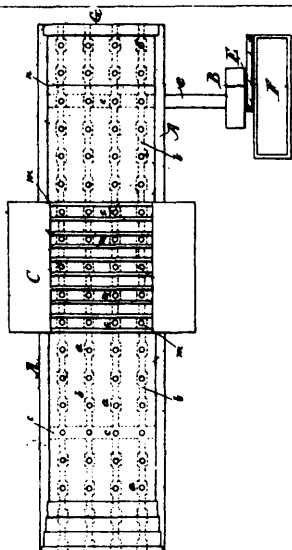
20020 Wilkinson's Monkey Wrench.



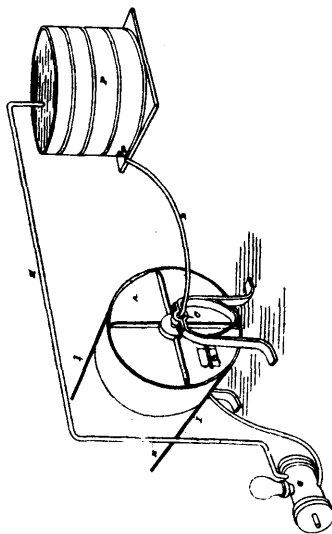
20021 Blessing's Combined Check and Stop Valve.



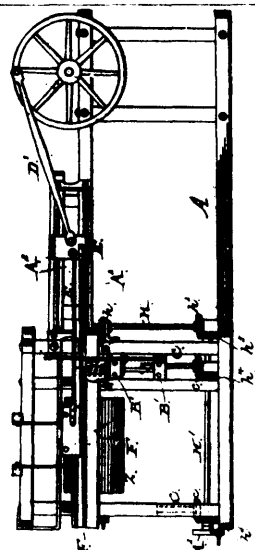
20022 Butter's Rowing Gear.



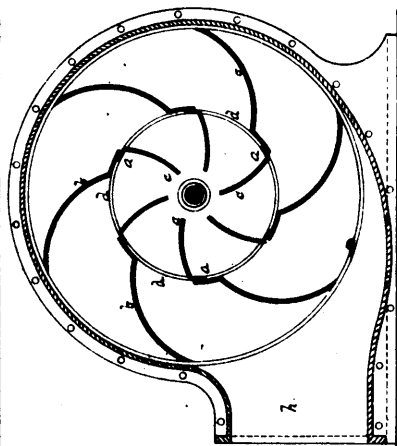
20023 Kandler's Art of Burning Brick.



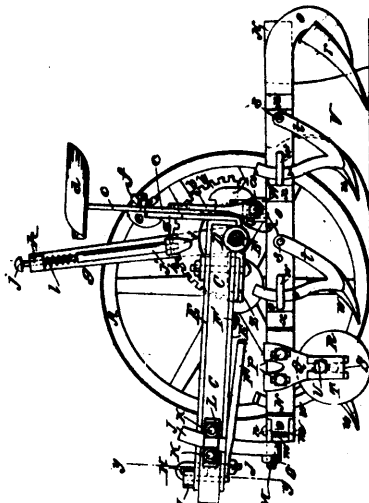
20024 Stroh's Process of Tanning.



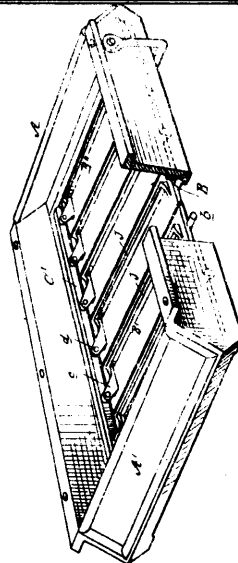
20025 Gage's Machinery for Sawing Lumber.



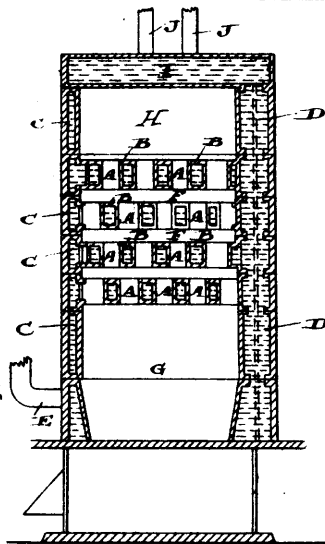
20026 Capell & Macbean's Fan.



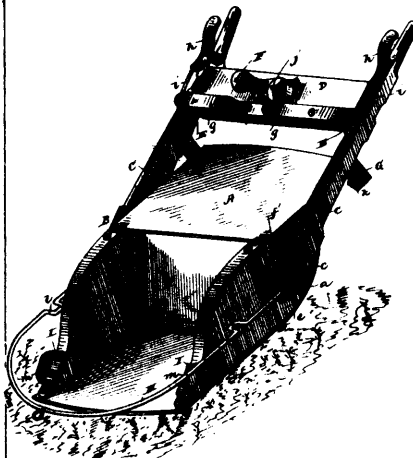
20027 Huddleston's Combined Sulky Plough and Cultivator.



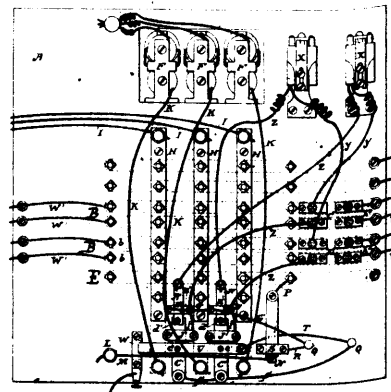
20028 Newth's Locomotive Ash Pan.



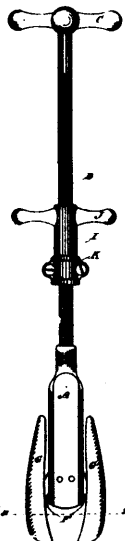
20029 Gurney & Sellers' Steam and Water Boiler for Heating Purposes.



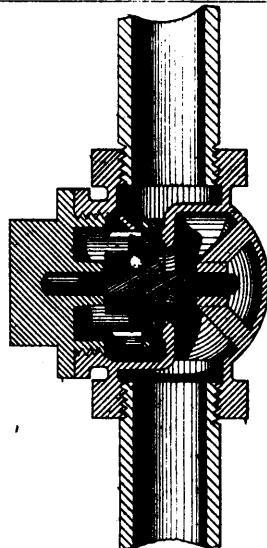
20030 Ellis' Road Scraper.



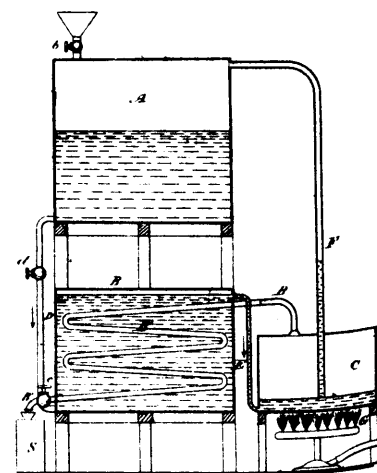
20031 Hamlin's Telephone Switch Board.



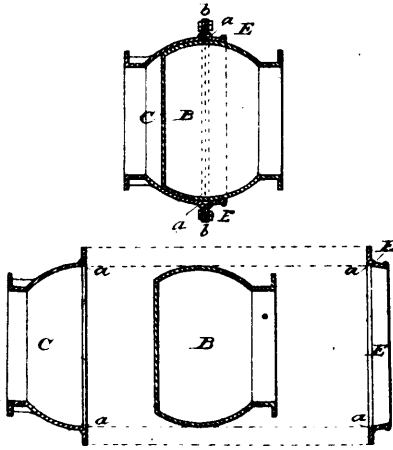
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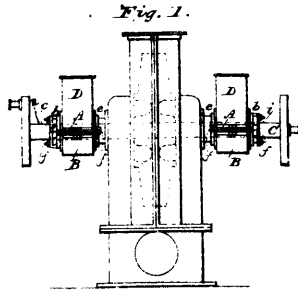
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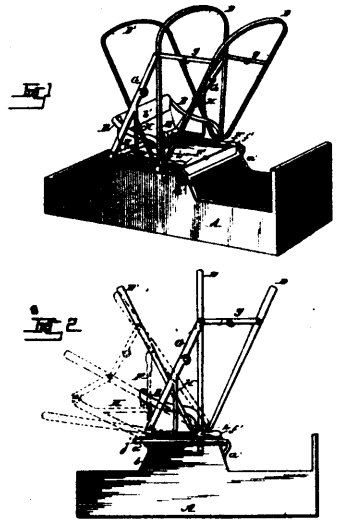
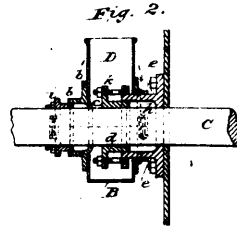
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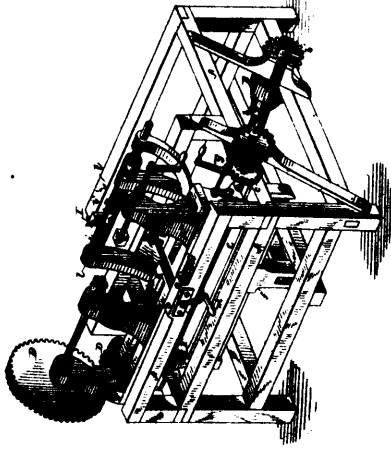
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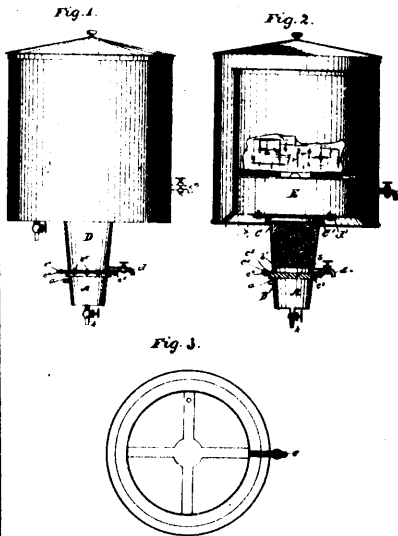
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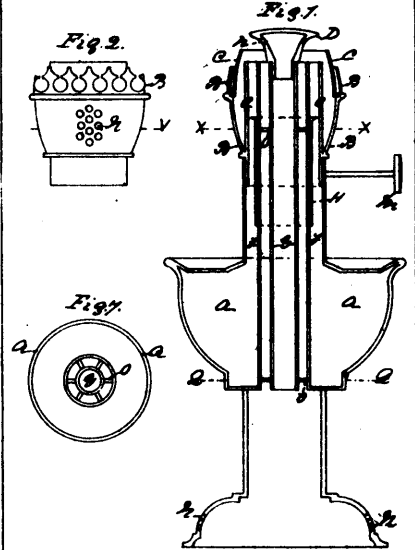
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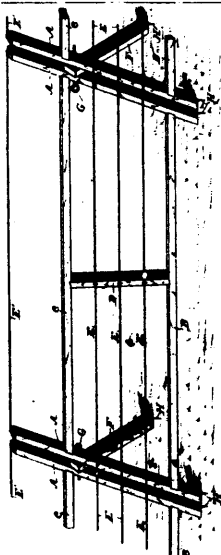
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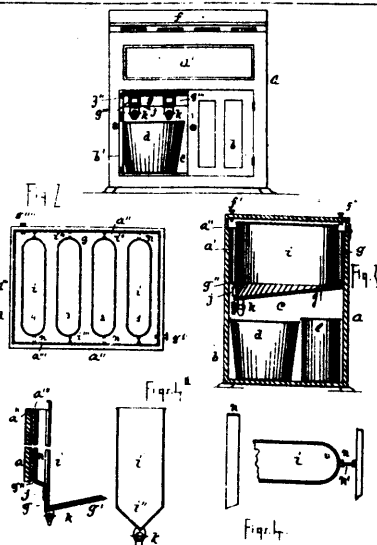
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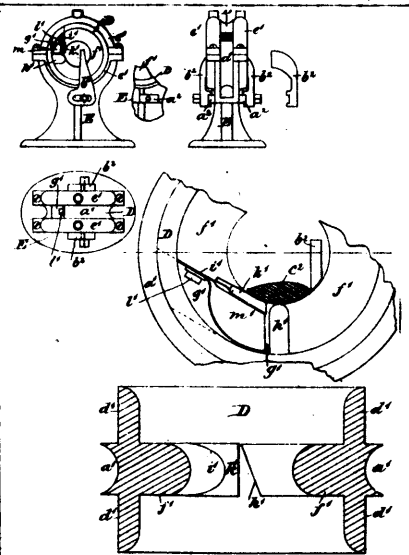
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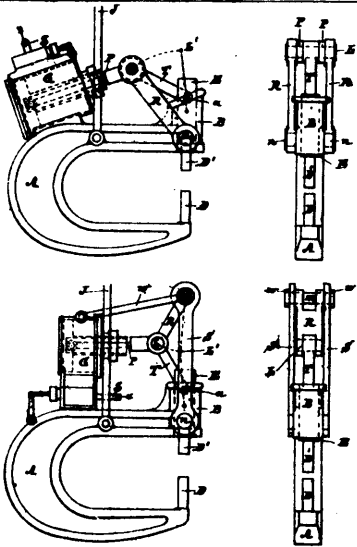
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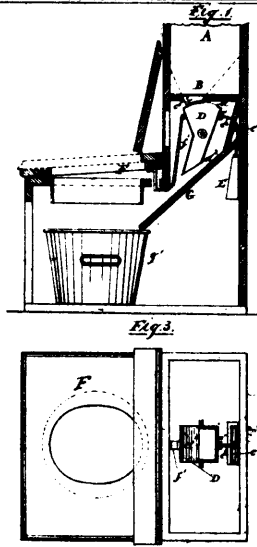
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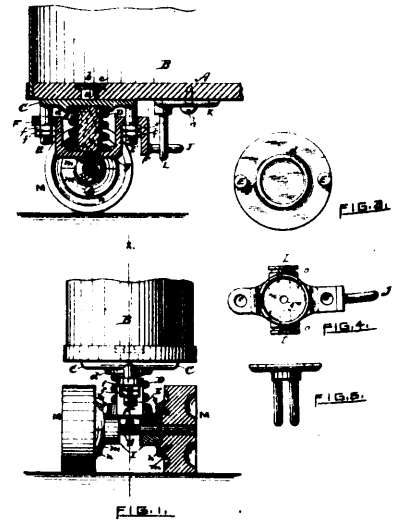
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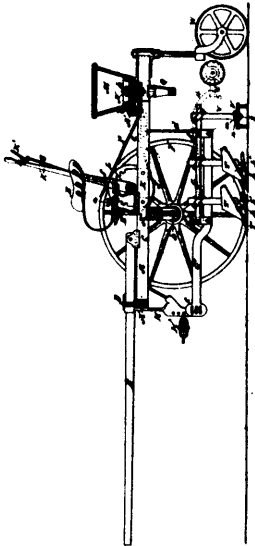
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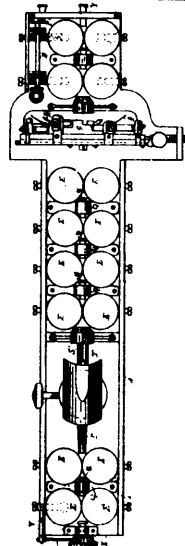
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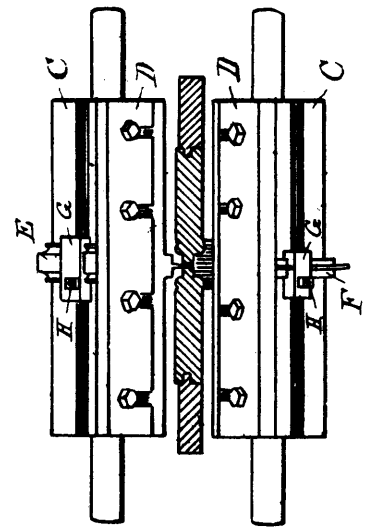
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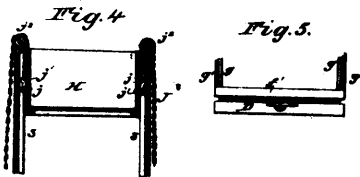
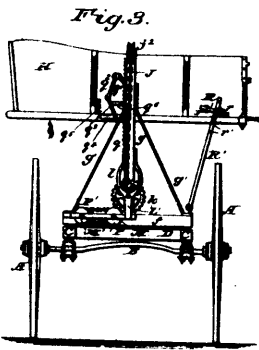
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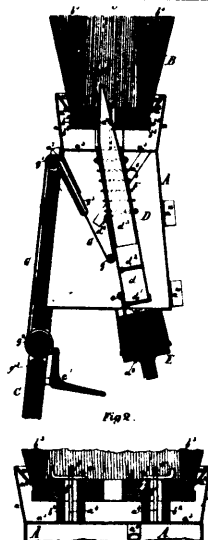
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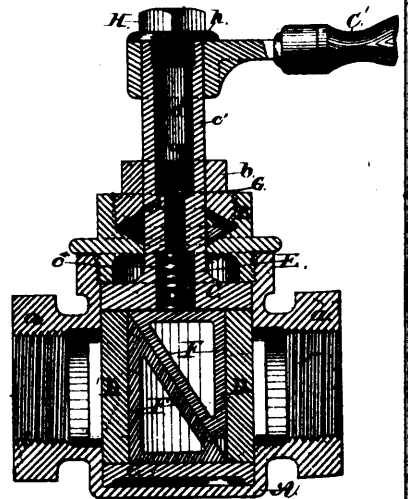
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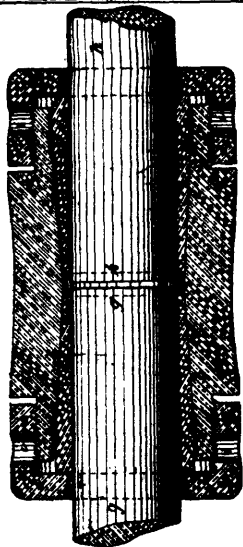
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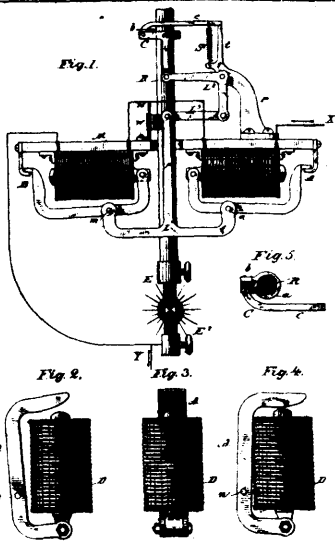
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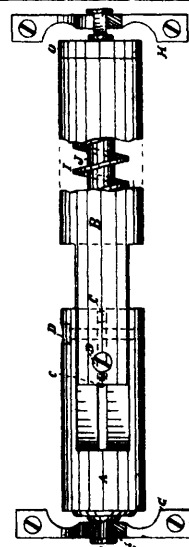
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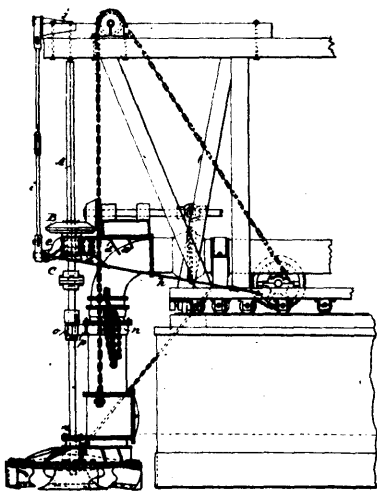
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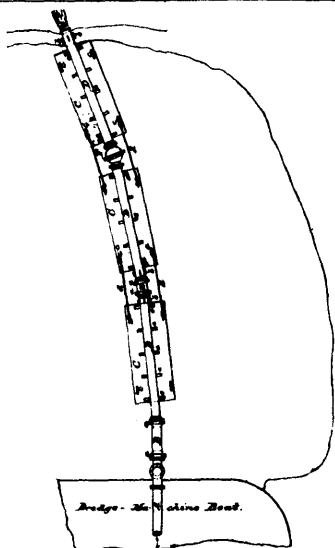
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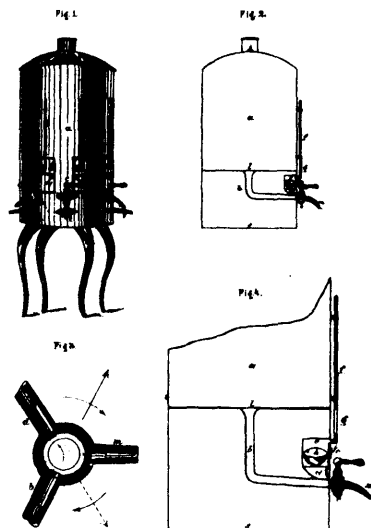
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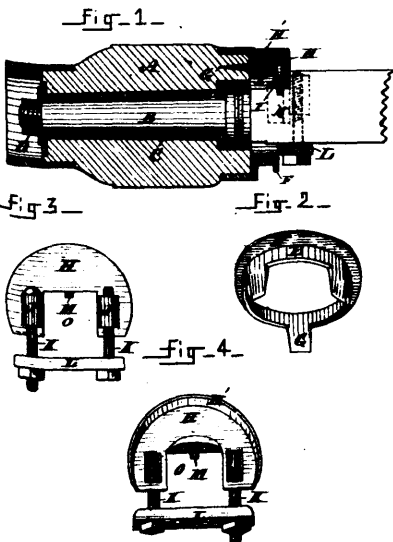
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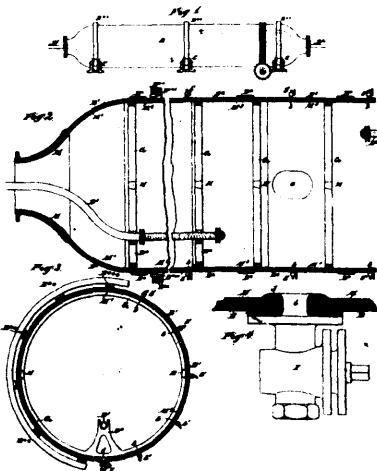
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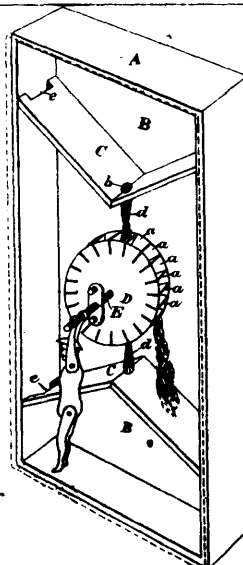
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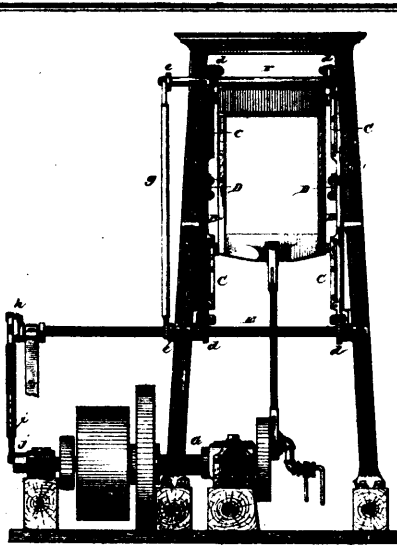
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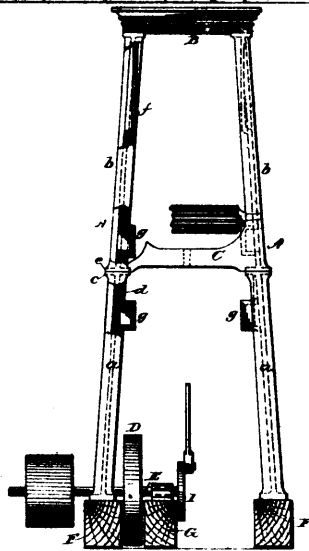
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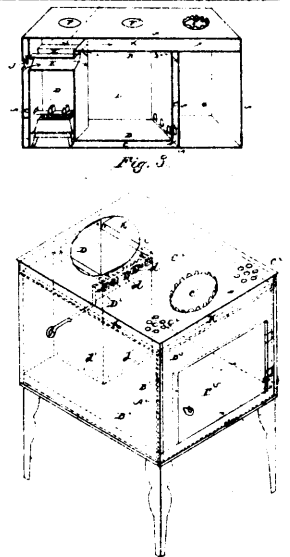
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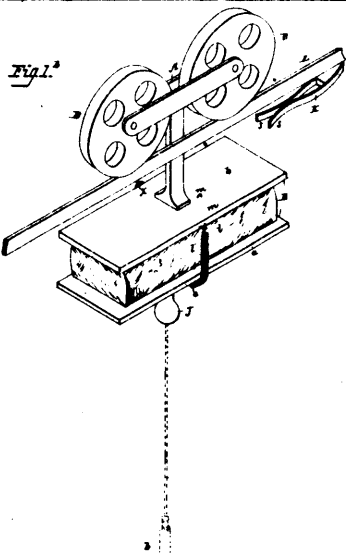
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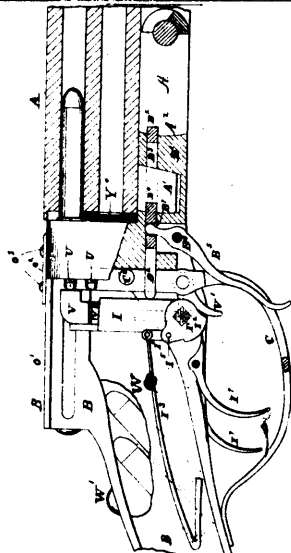
20063 Wilkin's Gang Saw Mill.



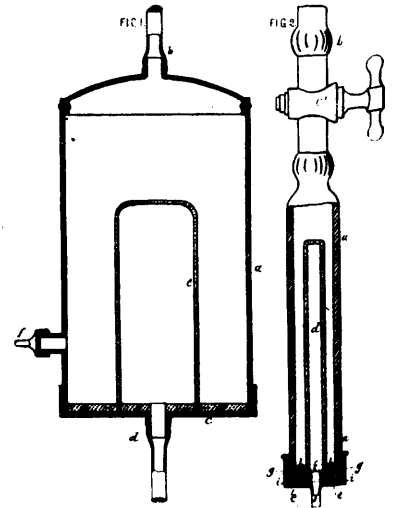
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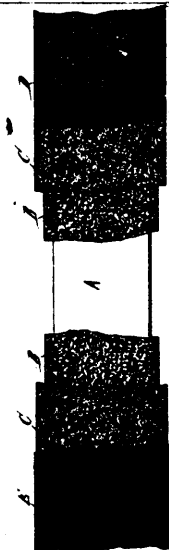
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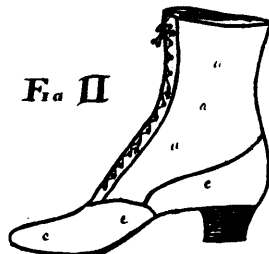
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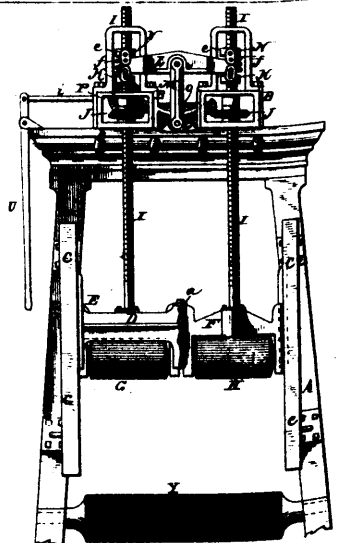
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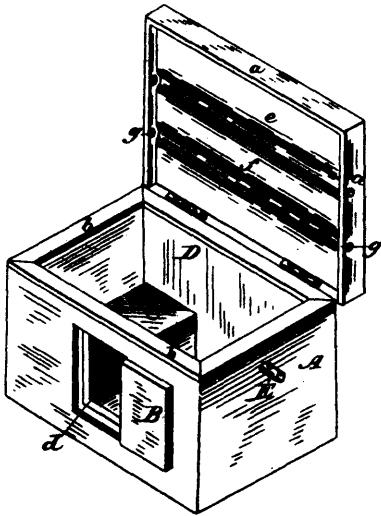
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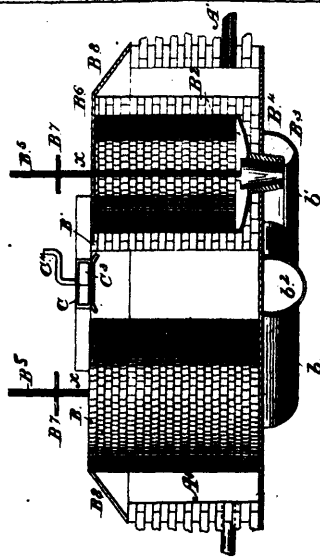
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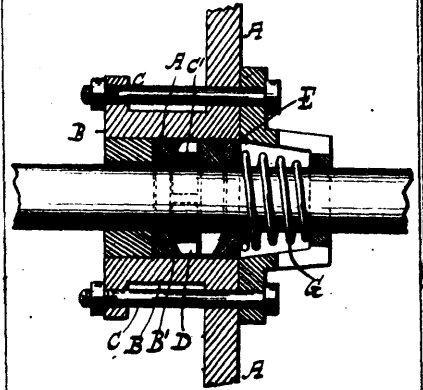
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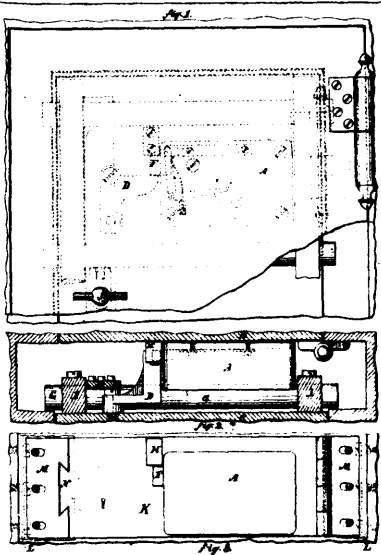
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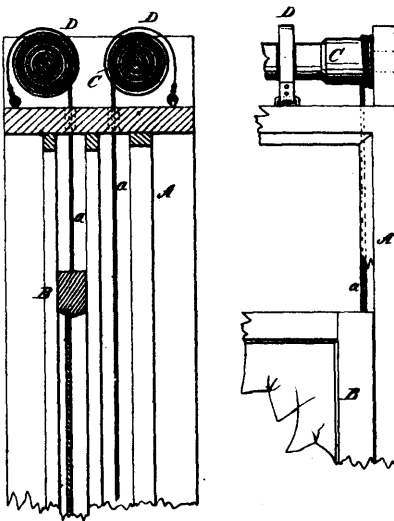
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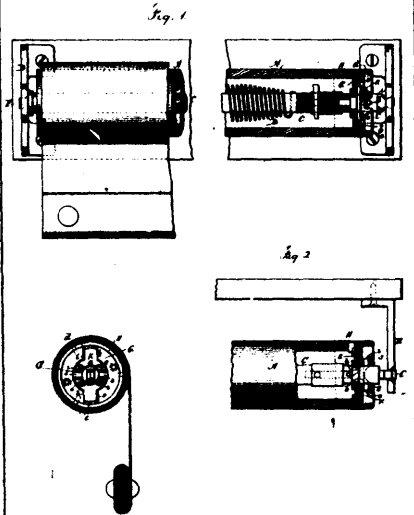
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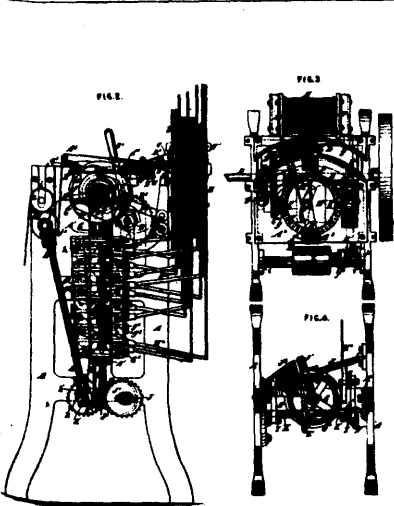
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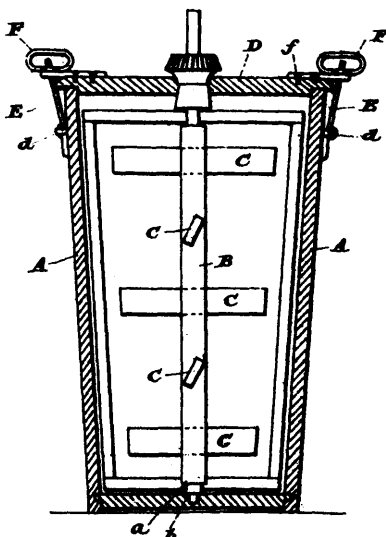
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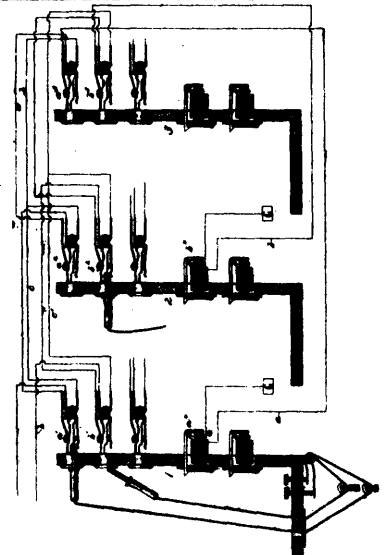
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Fig. 1.

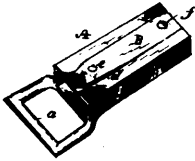


Fig. 2.

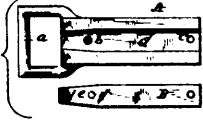
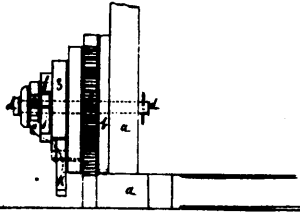
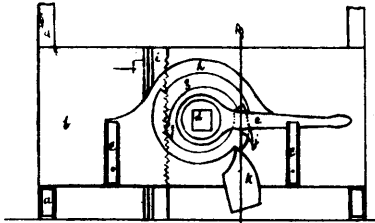


Fig. 3.



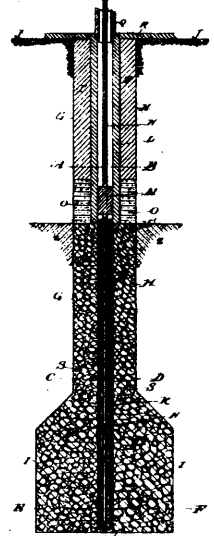
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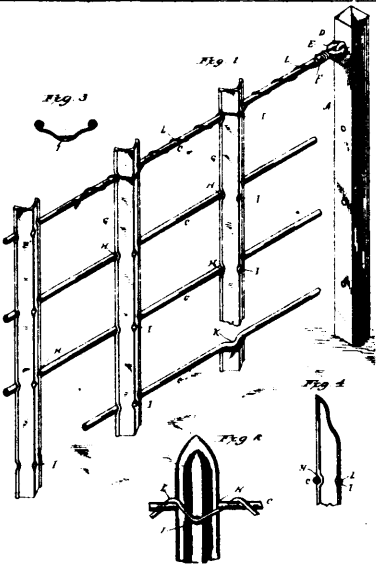
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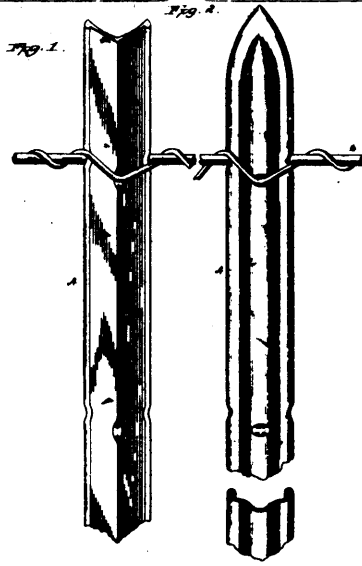
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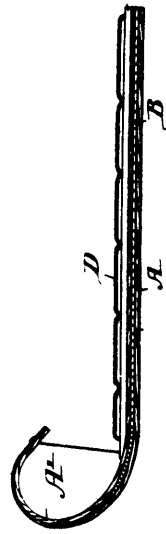
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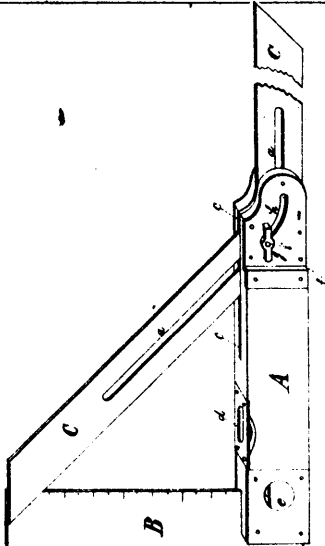
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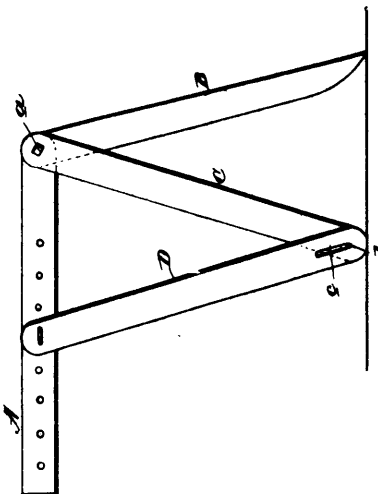
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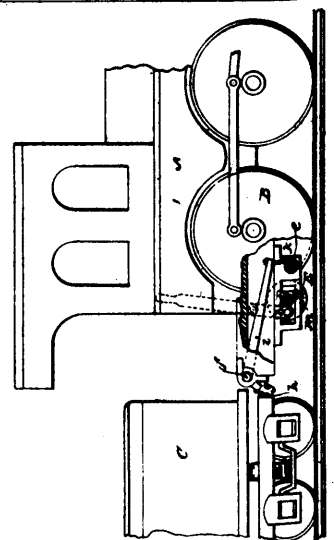
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