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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. 18,006. Apparatus for Desiccating animal Matter. (*Appareil de dessication des matières animales.*)

Caroline H. Breer, (assignee of Henry Breer,) Syracuse, N. Y., U. S., 27th October, 1883; 5 years.

Claim.—1st. In combination with the rotary cylinder, the combustion chamber B provided with the recess R in the upper part of its rear end, and fitted close to the end of the cylinder below said recess and close to the periphery of the opposite end of the cylinder, and flue F communicating with the interior of the cylinder at the upper part of its front end, substantially as described and shown. 2nd. In combination with the rotary open ended cylinder C, the combustion chamber B provided at the upper part of its rear end with the recess R, and having its opposite end fitted closely to the periphery of the cylinder, the segmental plates *a a* secured to the ends of the combustion chamber, and the flue F communicating with the upper part of the front end of the cylinder, substantially as shown and set forth. 3rd. In combination with the rotary cylinder C, the combustion chamber B provided with the chute D and discharge opening respectively at opposite ends, substantially as set forth. 4th. In combination with the combustion chamber B provided respectively at opposite ends with the chute D and discharge opening E, the spiders S formed with the rim *r*, the cylinder C mounted on said rim and the segmental plates *a a* secured to the ends of the combustion chamber and fitted closely to the rim *r*, all constructed and combined substantially in the manner described and shown.

No. 18,007. Nut Lock. (*Ecrou de sureté.*)

Charles L. Couvrette, Francis X. Barret and Joseph Mills, Montreal, Que., 1st November, 1883; 5 years.

Claim.—1st. The combination, with the plates C C, having slots *c c* and D D, of the bolts *d d* provided with split pins *f*, the fish-plate B and nuts b^1 b^1, substantially as and for the purposes described.

No. 18,008. Process for Purifying Lead.

(*Procédé d'affinage du plomb.*)

Francis J. Clamer, Philadelphia, Penn., U. S., 1st November, 1883; 5 years.

Claim.—The process of purifying lead, tin, zinc and similar metals, and preparing them for metal coating and amalgamating with other metals, which consists in providing a molten bath of the metal and subjecting it to the action of salamonica, arsenic and phosphorus, substantially as described.

No. 18,009. Can Filling Machine.

(*Machine pour emplir les boîtes métalliques.*)

Mathias Jensen, Astoria, Oregon, U. S., 1st November, 1883; 5 years.

Claim.—1st. The receiving hopper H with the semi-cylindrical rotary back E, in combination with the forks *f* attached to an arm in the rear, so as to be projected forward into the contents of the hopper, and a mechanism by which the part E may be moved downwards while the forks are projected through it, substantially as described. 2nd. The hopper H with its semi-cylindrical back E mounted upon a shaft, as shown, in combination with the cam N, lever O and connecting rod *d*, substantially as described. 3rd. The hopper H with its curved rotary back E and operating mechanism, in combination with the forks *f* projecting through the part E, the arm D, lever V and the actuating cam J, and lever K with the intervening connecting devices, substantially as described. 4th. The hopper H having the rotary back E, with mechanism by which it is caused to oscillate about its bearing shaft, in combination with the forks *f* and a mechanism by which they are projected into the hopper, when the part E is at the top of the stroke, and withdrawn when it is at the bottom, substantially as described. 5th. The rotary back E of the hopper and the forks *f*, with a mechanism for projecting them forward into the hopper and withdrawing them from it, in combination with the roller *g* through which the forks pass and by which they are guarded, substantially as described. 6th. The rotary back E of the hopper H, with the reciprocating forks *f*, and the cam N and lever O by which the part E is caused to oscillate, in combination with lever P to which the lever O is fulcrumed, and the suspended weight P^1, substantially as described. 7th. The rotary back E of the hopper H, with the cam N and rock shaft or lever O, in combination with the connecting rod *d*, with the screw and adjusting nuts d^1, or equivalent extension device, substantially as described. 8th. The hopper H with the rotary oscillating back E, the forks *f* operating as shown, in combination with a measuring chamber below the hopper, and the horizontally moving knives *j* and *k*, to sever the material and form a top to the chamber, substantially as described. 9th. The hopper H with a means for forcing the material into a measuring chamber below, and the knives *j* and *k* to sever the surplus material, in combination with the moving wall C by which the material is compressed within the chamber, substantially as described. 10th. The hopper H, with a device for forcing material into a measuring chamber below, and the knives *j k*, as shown, in combination with the moving wall C, and the cam R, lever S and the connecting rod *l*, substantially as described. 11th. The moving wall C of the measuring chamber, the cam R and the lever S, in combination with the connecting rod *l*, having screw threads upon its end, and the adjusting nuts, substantially as described. 12th. The hopper H with its movable forks or forcing devices, the measuring chamber with its movable wall C and the knives *j k*, in combination with the sliding end gate *n* and its operating lever M, substantially as described. 13th. The hopper H with the forks *f*, the measuring chamber with its movable wall C, knives *j k* and the gate *n*, in combination with the reciprocating plunger B for discharging the material from the chamber, substantially as described. 14th. The reciprocating plunger B with the extension *v* and the link *y*, in combination with the lever U having the adjustable extension *x*, and the cam T, substantially as described. 15th. The plunger B and the cam T, with the extension lever U *x* and connecting link *y* as shown, in combination with the adjusting screw *w* by which the outward movement of the plunger is limited or regulated, substantially as described. 16th, The hopper H with the measuring chamber below, and the plunger B, in combination with the spout A to receive the cans, said spout having its end inclined or bevelled, substantially as described. 17th. The spout A upon which the cans are placed to be filled, said spout having its end inclined, and the top or longest side flattened to form an air passage, substantially as described. 18th. The spout A projecting from the measuring chamber to receive the cans to be filled, in combination with the plate or slide G upon which the cans are supported, and a mechanism by which the plate is moved beneath the spout or retracted from it, substantially as described. 19th. The plate or slide G with a mechanism by which it is moved towards the spout A and retracted therefrom, in combination with the arm or bar *t* and the rocker arm *u* by which it is caused to move beneath and raise the can to guide it upon the spout A, substantially as described. 20th, The reciprocating plate G with its standards *s* at its outer ends, and the annular standard s^1, at the inner end, so formed as to slide upon A, in advance of the can, and remove it when the slide is retracted, substantially as described. 21st. The inclined chute I with the concave curved portion I^1 and the reciprocating slide or plate G, in combination with the rotary feeder or carrier F journalled above the plate G and having open spaces to receive the cans and carry them from the chute to the plate and thence to the discharge, substantially as described. 22nd. The rotary carrier or feeder F journalled above the plate G and having the pins *o* projecting from its ends, in combination with the notched stationary and reciprocating arms *p p*, substantially as and for the purpose described. 23rd. The rotary carrier or feeder F journalled above the plate G and having the pins *o* projecting from its ends, in combination with the stationary notched arm p^1 and the arm p, with the lever K, cam J and connecting rod *q*, substantially as described.

No. 18,010. Improvements in Grain Binders. (*Perfectionnements aux lieuses à grain.*)

William B. Burson, Chicago, Ill., U. S., 1st November, 1883; 15 years.

Claim.—1st. The knotter constructed with its working extension substantially segmental, and its recessed hook or barb as described, the whole operating to lay the loop of the knot around it and to receive the part of the twine that is to form the bow by a forward rotary movement, combined with means for shedding the loop thus formed over the twine thus engaged by the barb, and the barb itself, as set forth. 2nd. In a knotter, the combination of the working extension provided with the barb, with the latch a_1, substantially as described. 3rd. The combination of the barb and the concave flange g_1 operating as a resistant to the escape of the twine during the stress incident to tying the knot, substantially as set forth. 4th. The curved knotting hook a provided with the concentric groove, combined with the stationary stripping hook h which enters said groove, for the purpose set forth. 5th. The holder blade e having a rotary reciprocation upon an axis coincident with a knotter, and a stationary flange e_1, substantially as described. 6th. The rotary knotting hook a combined with the holder e, and the flange e_1 provided with the notch e_3 arranged to pay out so much cord or twine as may be required to form the knot, as set forth. 7th. In a grain binder, the knotter, the slotted breastplate for guiding the twine thereto, the holding notch e_3, the slotted knotter frame for guiding the needle twine therein, in combination with the needle, the whole operating substantially as described. 8th. The knotter, the slotted breastplate for guiding the twine thereto, the holding notch e_3, the slotted frame for guiding the needle twine therein, and the holder d_1 as means for retaining the twine at intervals in said notch, the whole in combination with the needle, substantially as described. 9th. The arrangement of the knotter frame and the actuating gear of the knotter, substantially as shown and described, so that both the knotter and pinion may overhang the bearings of the shaft and they may be so close to each other as to permit casting them integral, as set forth. 10th. In a grain binder, a pinion overhanging its bearings, a delay surface on the said pinion, and a knotting device also thereon, provided with a sloping base forming a cast off, and an operating point around which the knot is laid, substantially as described. 11th. In a knotting device, a pinion provided with a delay surface, a base forming a cast-off, the said base extending to support and carry the operating point of the said knotter axially forward in relation to the pinion, substantially as described. 12th. The combination, with the knotter having the barb, when operated to form the bow of the knot and give a second forward rotation to return it to its position of rest, of the concave so located, as shown and described, that the bow if still clinging to the barb will be carried against the termination of the said concave and brushed thereof, substantially as described. 13th. The combination of the knotter a, shaft c, pinions b and b_2, delay surface b_1, with a wheel having segments 1 and 2, and guide rim 4, the whole constructed, substantially as described. 14th. The combination of the knotter operating to tie the knot by a forward and reverse rotation, and discharge the bow from the barb by a second forward rotation, with a wheel having the segments 1, 2 and 3, constructed and operating substantially as described. 15th. The combination of the knotter provided with a barb for engaging the ends of the cord, with the rest g_1, for receiving and retaining them in proper position to be engaged by said barb, substantially as set forth 16th. The combination, with the knotter operating to complete the knot by a reverse movement on its axis, and having the concentric groove, the fixed unyielding stripping hook, its point directed into the said groove and adapted to permit the cord to pass it when the knotter is revolving forward to form the loop by yielding into the said groove, but to engage and operate to strip the loop when the knotter is reversed to complete the knot, substantially as set forth. 17th. The combination, with a knotter having a barb and operating to complete the knot by a reverse rotation, a stripper operating to retain the loop while the ends of the cord are drawn through it, and a concave provided with the recess g_2, substantially as described. 18th. The oscillating cord holder, constructed substantially as described, combined with operating means to engage the cord and carry its end along the concentric flange of the holder in its forward oscillation, and to draw the end of the twine with it in its return movement to pay out, substantially as set forth. 19th. In a grain binder, the holder shaft d provided with the arm d_1 and the teeth 8, 9, and 6, 7 cast integrally thereon, for the purposes set forth. 20th. In a grain binder the holder shaft d, constructed so as to form a bearing for the knotter shaft and provided with the arm d_1, and teeth 8, 9 and 6, 7, for the purposes set forth. 21st. In a grain binder, the combination of the knotter and holder frame constructed so as to form a bearing for the holder shaft, and having the flange e_1 cast integrally thereon, substantially as and for the purpose set forth. 22nd. In a knotting mechanism, the combination, with a holder, of the concentric groove f_1, and corresponding shaped knife f, constructed and operating to form a resistance between the cutter and holder and the knotter, substantially as described. 23rd. The combination, with the needle, of the holder arm d_1, constructed as described, and operating in the paying out movement of the holder to pass between the needle and cord, and retain the latter in position to be grasped by the holder proper, without regard to the position of the needle, substantially as set forth. 24th. The combination of the cord-holder and knife mounted upon arm d_1, shaft d provided with teeth 6, 7 and 8, 9, with their operating gears on the driving wheel, substantially as described. 25th. The combination of the intermittently moving cord holder, the shaft provided with the teeth 6, 7 and 8, 9 and the driving wheel provided with the teeth 6_1, 7_1 and 8_1 9_1, and guide tracks 7_2 and 8_2, the whole constructed and operating, substantially as described. 26th. The combination of the cord-holder shaft provided with the teeth 6, 7 and 8, 9, with the wheel F provided with the teeth 6_1, 7_1 and 8_1, 9_1 and the delay or guide tracks 7_2, 8_2 and 6_2, the whole constructed and operating, substantialty as set forth. 27th. The combination of the intermittently oscillating cord holder shaft provided with its operating teeth, and the knotter shaft provided with its pinions, with means for producing the various movements upon them, for the purpose set forth. 28th. The combination of the intermittently oscillating cord holder shaft d, provided with the arm d_1 and driving teeth 6, 7 and 8, 9, and the knotter a with its shaft c, and pinion b provided with the delay b_1 and pinion b_2, with the wheel F having teeth 6_1, 7_1 and 8_1, 9_1 and delay tracks 6_2, 7_2 and 8_2, and segments 1, 2 and 3, the whole constructed and operating, substantially as described, 29th. In knotting mechanism, the combination of the oscillating cord holder shaft d provided with the arm d_1 and holding blade e, with the notch or recess e_3 operating to retain the twine in position while the cord-holder passes over it, preparatory to securing a new hold upon the said twine, substantially as set forth.

No. 18,011. Rocking and Reclining Chairs. (*Sièges à bascule et pliant.*)

Alexander G. Fuller, Grand Rapids, Mich., U. S., 1st November, 1883: 5 years.

Claim.—The combination of the base frame, rocker frame and springs for connecting them together, the back frame pivotally connected to the rocker frame as shown, the seat pivotally connected at its rear end to the lower end of the back frame, and the locking device attached to the rocker frame and adapted to engage with the base frame to prevent rocking, and with the seat or back frame to prevent reclining, substantially as specified.

No. 18,012. Pulverizing Machine. (*Machine à pulvériser.*)

Ryerson D. Gates, Chicago, Ill., U. S., 1st November, 1883; 15 years.

Claim.—1st. The pulverizing roller case A having the separately constructed sections a and a_1, and the side portion a^x which are provided with the oblique flanges and the fastening bolts, the upper section a being of cap-form and separately united to the side section a^1 and portion a^x by said bolts and oblique flanges, whereby the upper section of said case is removable in an upward direction, substantially as and for the purpose described. 2nd. The pulverizing roller case A having the separately constructed section a a^1 a^2 and the portion a^x, which are provided with flanges and fastening bolts, the side sections a^1 a^x being provided with journal bearing supports, whereby a side section a^1 and the journal bearings on a side of the outer case or frame are removable laterally after said section a has been upwardly removed, substantially as and for the purposes described. 3rd. The pulverizer case A having separate sections a^2 and a^3 united by a lapping flange and bolts, the section a^3 being removable downwardly, substantially as and for the purpose described. 4th. The pulverizer roller case A formed of the top section a, side or middle sections a^1 a^x and lower sections a^2 and a^3, in combination with the pulverizing rollers, the driving friction rollers and the journals or shafts and boxes of said rollers, substantially as and for the purpose described. 5th. The combination of inner shell plates B B_1, supporting rods m, uniting bolts n, the sectional case A, revolving elevating-screen H H^1 and pulverizing rollers, substantially as and for the purpose described. 6th. The combination of the interior hopper G^2 and supporting rods m, with the outer case A provided with outside feed hoppers O, the rollers G G^1 and revolving screen H, substantially as and for the purpose described. 7th. The revolving screen provided with ring plates h^2, clamping rods l, elevator buckets H^1 having short journals and being adjustable between the clamping plates, substantially as and for the purpose described. 8th. The revolving screen provided with ring-plates h^2, clamping rods l and separately constructed bars of metal h which are filled with wood as g^1 and are clamped between the said ring-plates, substantially as and for the purposes described. 9th. The revolving screen provided with the ring-grooved plates h^2 and wood g^3, substantially as and for the purpose described. 10th. The revolving screen provided with ring-plates h^2, bars h and the wood fillings g^1 and g^3, substantially as and for the purpose described. 11th. The combination of the pulverizing rollers, a casing therefore, a revolving elevating screen inclosing said rollers, the gearing for the pulverizing rollers, the gearing m^7 c c^1 c^4 c^5 c^6, shafts b^1 b^3, and friction rollers b^2 b^4, for driving the revolving elevating screen, substantially as and for the purpose described. 12th. The combination of the pulverizing rollers G G^1, the revolving elevating screen H H^1, the inclosing roller case A and the friction rollers b^2 b^4 for frictionally driving said screen, substantially as and for the purpose described. 13th. The combination, with the rollers and inclosing case A, of the central shaft M^5, gears M M^1 M^2 M^3, journals g^5 g^6, spider M^6, gears N N^1 and pulley shaft N^2, substantially as and for the purpose described.

No. 18,013. Improvement on Neck Yokes. (*Perfectionnement des jougs.*)

Sidney Conant, Ole O. Peterson, Arcadia, Wis., and William B. Reed, (assignees of James Hollister,) St. Paul, Minn., U. S., 1st November, 1883; 5 years.

Claim.—1st. A three- horse equalizing neck-yoke consisting of the single-tree A provided with means for pivoting it to a tongue B, in combination with whiffle-trees C and D provided with means for attachment to harness, and pivoted to said single-tree, substantially as set forth, so as to give each horse an equal leverage in backing and turning, for the purpose specified. 2nd. A three-horse equalizing neck-yoke consisting of the single-tree A, provided with means for pivoting it to a tongue B, in combination with whiffle-trees C and D having a longitudinally-adjustable connection with said single-tree, and provided with means for attachment to harness and pivoted to said single-tree, substantially as set forth, so as to give each horse an equal leverage in backing and turning, for the purpose specified.

No. 18,014. Door Hanger. (*Penture de porte.*)

I. Besse, (assignee of Henry T. Moody), Newburyport, Mass., U. S., 1st November, 1883; 5 years.

Claim.—1st. In combination, the plates A A having projections d d connected by the rider bar B, the track-rail D and wheels C, all shaped, combined and operated in the manner and for the purposes specified. 2nd. The rider-bar D shaped and adapted to be operated in connection with the wheel C, substantially as and for the purposes described. 3rd. The track-rail D having a raised central portion with inclined

sides and flanges, for the purpose of supporting the wheel in each side of the central portion, substantially as and for the purpose described. 4th. The combination of the track D, shaped and adapted to operate, substantially as described, with a bracket or angle iron for supporting the same, adapted to be fastened to a beam or other support above the door, all substantially as and for the purposes described. 5th. The combination of the track D having a raised portion, the sides of which are inclined with the projections *d* extended to very nearly the flange of the rail and inclined upon their inner surface to correspond in substance with the inclination of the central portion of the rail, where they serve to clear the rail from any substance that may lodge thereon, all substantially as and for the purposes described. 6th. The combination of the rail D having a raised portion, with inclined sides and flanges for the support of the wheel C, with said wheel C having two webs or extensions which straddle the raised portion of the rail and bear upon the flanges thereof, all constructed and arranged so that the wheel shall be caused to take a straight path with as little friction upon the rail as possible, and the liability of its riding the rail prevented, all substantially as and for the purpose described.

No. 18,015. Reverberatory Gas Furnace.

(*Fourneau à gaz à réverbère.*)

William L. McNair, Golden, Colorado, U. S., 2nd November, 1883; 5 years.

Claim.—1st. In a furnace, the combination of a series of muffles A, with the plane B and a grate C, whereby coke can be banked up in front of the inner ends of the muffles for the purpose of causing the volatile matter in the fuel to pass through the heated coke, substantially as shown. 2nd. In a furnace, the combination of a series of muffles, the plane B, grate C and the air ports or flues A1, through which air or steam may be passed through the coke as it lays upon the grate, substantially as described. 3rd. In a furnace, the combination of a series of muffles, the plane B and the grate C, with the hopper L having openings N1 through them, through which steam or air can be passed into the muffles, substantially as set forth. 4th. In a furnace, a muffle or series of muffles formed of brick and then covered over with a glazing compound, substantially as specified. 5th. The combination, in a furnace, of the walls J1 placed in the flue E, for the purpose of causing eddies in the escaping products of combustion, substantially as shown. 6th. In a furnace, a series of pits Q arranged in the flues in a line with the escaping products of combustion, substantially as described. 7th. In a furnace, the combination of the walls J1 with the pits Q, arranged at different points in the line of the moving products of combustion, substantially as set forth. 8th. The hearth D having a water chamber placed under or formed in it, substantially as specified. 9th. In a furnace, the combination of the flues C1 D1 E1 H1 and valve M, the valve M and the flue G being adapted to be closed so as to prevent air from mingling with the products of combustion, as they pass over the bridge wall, for the purpose of producing a low temperature in the hearth, substantially as described.

No. 18,016. Adjustable Table and Desk.

(*Table et pupitre mobiles.*)

John White, Goderich, Ont., 2nd November, 1883; 5 years.

Claim.—1st. The combination of the top C and the sliding pillar or post F, with the lower hollow pillar H, for the purpose set forth. 2nd. The combination of the supports K K, with the top C and the sliding pillar F, with the lower hollow pillar H, for the purpose set forth.

No. 18,017. Artificial Stone Grave Vault.

(*Caveau de cimetière en pierre artificielle.*)

James Logan, Waterloo, N. Y., U. S., 2nd November, 1883; 5 years.

Claim.—1st. A grave vault or receptacle for coffins made of artificial stone, in the manner described, and provided with grooves or channels in the sides, for the reception of coffin supports, substantially as set forth. 2nd. A grave vault made of artificial stone and provided with one more interior coffin supports, whereby the coffin is raised above the bottom of said vault, as set forth. 3rd. A grave vault, as described, in combination with the coffin supports and detachable cover resting upon said supports and adapted to receive and support the artificial stone cover and the superincumbent earth, substantially as set forth. 4th. The combination, with a grave vault, of a detachable cover provided with hooks or catches, whereby the cap can be lowered on the vaults, and the lowering means removed, substantially as set forth. 5th. The coffin supports C having recesses in their top for the reception of cross-bars *d*, and adapted to enter grooves in the sides of the vault and support the coffin above the bottom of the vaults, as and for the purpose set forth. 6th. The combination, with a grave-vault of artificial stone, of the coffin supports, a detachable cover or cap provided with a covering of artificial stone which, when set, becomes integral with the vault and thus renders it air and water-tight, substantially as and for the purpose set forth.

No. 18,018. Grinding Attachment for Valves. (*Appareil de remoulage des soupapes.*)

Alfred W. Case, South Manchester, Conn., U. S., 2nd November, 1883; 5 years.

Claim.—The combination, with the valve stock A and the valve head D, having square recess H in its face, of the sliding rod I having square inner end, the stuffing box J and the screw plug K, substantially as shown and described, whereby the said valve-head can be ground to its seat without being removed from its valve stock, as set forth.

No. 18,019. Devices for Shifting Thills.

(*Moyens de déplacer les limonières.*)

George H. Doane (assignee of George H. Lusk,) Pittsford, N. Y., U. S., 3rd November, 1883; 5 years.

Claim.—In a sleigh or cutter, the combination, with the thills C C, of the tube D, the wood filling *a a* at the ends of the tube, the interior rod E extending through the tube, and the fillings projecting at the ends and forming the bearings for the eyes of the thills, the thread *e* and nut *e*1 on the ends of the rod clamping the eyes against the ends of the tube, as shown and described.

No. 18,020. Dynamo-Electric Machine.

(*Machine électro-dynamique.*)

Charles E. Ball, Philadelphia, Penn., U. S., 3rd November, 1883; 5 years.

Claim.—1st. In combination with the pole pieces C C1 on opposite sides of the machine, the brace or stay D forming a central bearing for the armature shaft, substantially as shown and described. 2nd. The combination, in a dynamo-electric machine, of two armatures on one shaft, each connected with its own commutator and located and arranged to be rotated within the inductive influence of only one pole of an electro-magnet, the two poles being on opposite sides, substantially as shown and described. 3rd. The combination, in a dynamo-electric machine, of an electro-magnet having unlike poles on opposite sides, i.e., one pole on each side with two armatures on a single shaft, each of said armatures having a commutator and being arranged and adapted to be rotated in the inductive field of only one of said poles, substantially as shown and described.

No. 18,021. Carpet Stretcher.

(*Appareil à poser les tapis.*)

Randolph O. Robinson, Glidden, Iowa, U. S., 3rd November, 1883; 5 years.

Claim.—1st. The combination, in a carpet-stretcher, of the box A B, head D constructed with a series of fingers F having hooks G and provided with the shank C having notches J, extensible arm or bar H shouldered at I, jointed lever L K hinged at one end upon box A B and adapted to be stepped with its free end into any one of the series of notches J, and rack-bar O hinged at one end upon the top of box A B and adapted to be engaged with its free end, a stud P upon the sliding head, substantially as and for the purpose shown and set forth. 2nd. The combination, in a carpet-stretcher, of the box A B, head D constructed with a series of fingers F having hooks G and provided with the shank C forming a rack-bar, extensible arm or bat H shouldered at I, toothed wheel Q provided with the removable lever R and rack-bar O hinged at one end upon the top of box A B and adapted to engage, with its free end, a stud P upon the sliding head, substantially as and for the purpose shown and set forth.

No. 18,022. Tag Fastener. (*Attache-étiquette.*)

Moses Alshuler, Maltoon, Ill., U.S., 3rd November, 1883; 5 years.

Claim.—1st. In combination with the apertured tag, the metal fastener constructed with a central loop in which the tag is freely suspended, and two arms, one of which is laterally bent in a plane at right angles with that of said loop, and the other of which is bent in the same plane with said loop, substantially as described and for the purposes set forth. 2nd. The tag fastener described consisting of the wire F bent to form the central eye F1 for the tag, and two branching arms, one terminating in a ring *f* occupying a plane at right angles with that of the central eye F1, and the other arm terminating in a projecting point *f*1 adapted, when inserted through a central fold of fabric, to pass through the ring *f* and to be bent over on a plane with such arms, all substantially as shown and described.

No. 18,023. Machine for Attaching Buttons.

(*Machine pour assujétir les boutons.*)

Albert W. Ham, Troy, N.Y., U.S., 3rd November, 1883; 5 years.

Claim.—1st. In a button-attaching machine, a fulcrumed upper jaw constructed to hold a button and staple, in combination with a lower jaw provided with a yielding wedge shaped die, and a regulating spring to act upon the die to spread the forks of the staple, substantially as described. 2nd. In a button attaching machine, the combination of two fulcrumed jaws, one of which is provided with a fork or slot for holding a button and staple and the other with a yielding slotted die adapted to spread the forks of the staple and guide them in their course, the latter jaw acting, independently of the die, to set the staple firmly upon the fabric, substantially as described. 3rd. In a button-attaching machine, a slotted jaw adapted to receive the eye of a button, in combination with a slotted wedge adapted to swing on said jaw, to and from the slotted end of the jaw, and grasp the button eye, substantially as and for the purposes mentioned.

No. 18,024. Improvements in Paper Boxes.

(*Perfectionnements dans les boîtes en papier.*)

Richard R. Colburn, Ansonia, Conn., U. S., 3rd November, 1883; 5 years.

Claim.—1st. The described folding box consisting of the two parts, each composed of four sides with extensions at one edge of the blank from said sides, whereby, when the sides at the opposite end of the blanks are united, said extensions may be turned inward and interlocked to close that end, leaving the other end of the part open, the internal dimensions of one part corresponding, substantially, to the external dimensions of the other part, whereby the one part may be set over the other part and inclose that other part, the closed end of one part closing the open end of the other part, substantially as described. 2nd. The described telescopic box consisting of the two parts, each constructed from a blank having the sides A B C D in a continuous piece, the two sides A C constructed respectively with extensions *a c* at one end and the said extensions having a V-shaped notch *e* cut in the corresponding edge, the dimensions of one part with relation to the other part being such that, when the said parts are set up, the internal dimensions of one part will correspond to the external dimensions of the other part, and whereby the one part may be telescopically passed on over the open end of the other part and serve to inclose the other part, substantially as described.

No. 18,025. Weather Strip. (*Bourrelet de porte.*)

Henry Carter, Gold Hill, Col., U.S., 3rd November, 1883; 5 years.

Claim.—As an improvement in weather-strips, the combination, with the weather strip K having the trunnions J J at its ends, which have their bearing, in the eyes I I, of the raised portions or flanges H H at each end of the threshold, and provided with the upwardly-projecting nib L at one end of the strip M secured to the door by the flange N, and having the downwardly-projecting main portion O provided on its underside with a recess, in which is embedded the elastic strip P and formed with the recess R, to accommodate the nib L at the end of the weather-strip, as and for the purpose set forth.

No. 18,026. Pessary. (*Pessaire.*)

William W. Turver, Parkdale, Ont., 3rd November, 1883; 5 years.

Claim.—1st. A pessary composed of side branches C and a curved top portion A having a depending front portion *a* adapted to support the bladder, and a rear portion E depending between the side branches and adapted to support the womb, substantially as set forth. 2nd. A pessary composed of side branches C, a top portion A adapted to support the bladder and a depending flexible apron E adapted to support the womb, substantially as set forth. 3rd. A pessary composed of a pliable wire frame and a covering of soft rubber constructed with a convex top A and a depending apron E, substantially as set forth.

No. 18,027. Hop Dryer. (*Séchoir à houblon.*)

James L. Filkins, Sangerfield, N. Y., U. S., 3rd November, 1883; 5 years.

Claim.—1st. In a dryer, an upward tapering air flue or chamber covered upon each side with slats or other foraminous substance, so that an intervening space may be formed into and through which heated air may pass into the substance being dried, substantially as described. 2nd. In a dryer, the combination of a foraminous tapering air flue resting upon a foraminous floor over a heated chamber, substantially as described. 3rd. In a dryer, an imperforate wall, an incline rack forming in connection with such wall an air flue, substantially as described. 4th. In a dryer, two incline racks connected at the top, open at the bottom forming an air space between, substantially as described. 5th. In a dryer space A, between the walls, formed by the outer surface of the two incline racks through which heated air is brought in contact with the drying substance, all as substantially described.

No 18,028. Hub for Vehicle Wheel.

(*Moyeu de roue de voiture.*)

Thomas Brown and Samuel N. Brown, Dayton, Ohio, U. S., 3rd November, 1883; 5 years.

Claim.—1st. As a new manufacture, a compressed wrought-iron band, ring or ferrule void of all joints and seams, produced from a previously coiled strip of metal, and having a plain outer surface and a triangular or concaved inner surface, substantially as specified. 2nd. The method of banding hubs, substantially as described, which consists in making an annular peripheral groove in the hub, and compressing therein a solid metallic band by pressure exerted upon its surface in radial or concentering lines, without producing unequal end pressure upon the grain of the wood. 3rd. A wooden hub strengthened by one or more seamless metallic bands pressed in annular peripheral grooves in the hub, by pressure exerted upon the surface of the band in radial or concentering lines, at right angles to the axis of the hub, without any longitudinal movement being imparted to either the band or bands, or to the hub, during the act of compressing. 4th. The combination, with a wooden hub provided with one or more annular grooves formed in its periphery, of the continuous annular metallic strengthening band, which is triangular or plano-convex in cross-section, and which is pressed in the said groove by pressure exerted upon the surface of the band acting in radial or concentering lines at right angles to the axis of the hub, without any longitudinal movement of the band or bands, or the hub, while compressing the band or bands, substantially as described.

No. 18,029. Steam Boiler Furnace.

(*Foyer de chaudière à vapeur.*)

Byron Sloper, New York, N.Y., U.S., 3rd November, 1883; 5 years.

Claim.—The described process of promoting the surface combustion of fuel and bringing the same to an intense incandescent heat, by the decomposition of steam in connection with highly heated air, both the steam and air being delivered each separately and in a broad thin horizontal, or nearly horizontal, stratum in close proximity to the whole surface of the fuel, so that all the atoms of steam come into instant contact with the fuel, substantially as and for the purpose specified.

No. 18,030. Horse Power Speed Regulator. (*Régulateur de la vitesse des manèges.*)

Jasper A. Rouse, East Berkshire, Vt., U. S., 3rd November, 1883; 5 years.

Claim.—1st. In a speed-regulator, the combination of the shaft B, the wheel A having the clutch C with the loose pulley L, provided with the split-hub M, substantially as shown. 2nd. In a speed regulator, the loose pulley L, having a split-hub M, the block D, weighted arms F F, springs J, levers G, pads *g* and rope S, which operates the pad T through the levers P R, combined together and with the drive-wheel, substantially as shown and for the purpose set forth. 3rd. In speed-regulators, the foundation block D and leaf-piece E, by which it may be readily attached to the clutch C, substantially as described. 4th. The combination, in speed-regulators, of the weighted arms F, adjustable spring J, swinging ear H, and brake-levers G G, with the foundation-block D and leaf-piece E, substantially as set forth.

No. 18,031. Device for Clearing Railway Tracks. (*Appareil pour déblayer les voies de fer.*)

William C. Rice, Oakland Valley, Iowa, U. S., 3rd November, 1883; 5 years.

Claim.—1st. A device for preventing the accumulation of snow and sand or tracks, or in railway cuts and switches, consisting in a fence or gate of one or more panels placed at the top of the cut, each gate or fence panel being provided with means for causing it to be automatically tilted or adjusted to the direction of the wind by the wind itself, and cause the wind to pass underneath said panel and down the side of the cut, substantially as and for the purpose set forth. 2nd. A series of adjustable gates or fence panels arranged at the top in the sides of a railway cut, the top panels being provided with means for automatically tilting or adjusting them to the direction of the wind, the panels or sections in the side of the cut being tilted or adjusted by the wind and by the top panels, through the intervention of suitable mechanism connecting the said panels at the top and side, substantially as and for the purpose set forth. 3rd. In a device for clearing snow from railway cuts by the direct action of the wind, one or more pivoted panels A journalled in posts D, said panels being provided with a rigid wind gauge and a pivoted deflecting gauge, the wind gauge acting to turn the panel, the deflecting gauge acting through the intervention of suitable mechanism to release the panel from one locked position and allow it to turn and be locked in a new position, substantially as shown and described. 4th. In a device for clearing snow from railway cuts, the combination, with one or more movable faucets A, arranged as described, of wind deflectors pivotally secured to posts placed in rear of the panels and adapted to turn by the action of the wind, substantially in the manner and for the purpose described. 5th. In a device for clearing snow from railway cuts, the wind deflectors P secured to posts placed at a suitable distance in rear of the movable panels A, the movement of said deflectors being limited by posts P_1, said deflectors acting to turn the current from an oblique to a direct course to said panels A, substantially as set forth. 6th. In a device for clearing snow from railway cuts by the action of the wind, one or more panels or gates A pivotally mounted on posts D, said panels being provided with a wind gauge and deflecting gauge, and a curved plate having recesses *e e*^{1}, adapted to receive locking device levers I I_1, as and for the purpose set forth. 7th. The combination, with a gate or panel, provided with a wind gauge and a locking plate E, of the deflecting gauge G and locking levers I I_1, actuated by said deflecting gauge through the intervention of chains *l* l_1 or other suitable means, as and for the purpose set forth. 8th. The combination, with an upper gate or panel A, actuated as described, of one or more intermediate lower panels A_1 automatically operated by the movement of the upper panel, substantially as described. 9th. The combination, in a snow-clearing device for railway cuts, of one or more pivoted or turning panels or gates at the top of the cut, a series of wind deflectors in rear of each, a series of one or more panels in the sides of the cut, the upper panels being provided with wind gauges and deflecting gauges, said deflecting gauges acting to lock or unlock the upper panels from any fixed position and acting through the intervention of a chain, drum and suitable levers to lock or unlock the lower panels, in the manner and for the purpose described.

No. 18,032. Knitting Machinery.

(*Machine à tricoter.*)

William H. McNary, Brooklyn, N, Y., U, S., 3rd November, 1883; 5 years.

Claim.—1st. In circular knitting machines, the arrangement of mechanism for working the thread-guide slides and the presser, as described, with reference to sheets I, II and III, consisting in addition to the old rock levers $N5^x$ and $N6^x$, which operate the upper yarn guide-slide of the rock-levers N_5 and N^6, which actuate the lower yarn guide-slide, and the additional sliding bar N^2 for setting the rock-lever N_5 into acting position, and the coupling arrangement N_3, which couples automatically the new sliding bar N^2 to the old sliding bar N_1, whereby, through the continued action of the switch wheel, one or other of the fabrics illustrated by the diagrams, in sheets VII and VIII, is produced at pleasure. 2nd. In circular knitting machines, the adaptation to the forked switch lever *e*, of the slide *f* with its attachments (*viz*: the square stem f^3 with the rock lever f^5 pivoted on it, and the vertically sliding tappets f^4 f^5) whereby, through the action of the pattern plate furnished with the system of long and short pins 1 2 3 4, and double inclines f^x and f^{1x}, the switch of the switch-wheel is reversed, also the double incline k^1 for coupling and uncoupling the sliding bars N^1 N^2. 3rd. In circular knitting machines, the yarn guide m^8 formed of round wire and fitted with pinions m^7 which gear into a stationary rack m^3 on the fixed bridge-piece B^x, such guides being mounted so as to turn axially in the segment-shaped slide M, provided with cam slots to receive pins projecting from a reciprocating slide or driver m^{12} actuated through a rock lever and link from the cam m^{10} on the cam shaft, whereby the thread guides receive a half turn at every reverse of the traverse motion of the threat guide bar and a motion towards and from the needles during the working of every course, as described with reference to sheet XI. 4th. In straight knitting machines, the arrangement of mechanism for working the thread guide slides and the presser, as described, with reference to sheets IX and X, consisting of (*a*) the two yarn guide slides M M^1 worked independently by notched disks $F4^x$ $N5^x$, carried by sliding bars N^2 N_3, and fitted with pinions N^4 N_5, which receive continuous rotary motion through spur gear n^3 n^5 from the pinion D^2 on the cam shaft, the sliding bars moving in guides in the rib A^1 and receiving a traverse motion respectively from the worm wheel 63 and the toothed sector of the rock lever Z_1, both of which are actuated independently from the switch wheel, (*b*); the adjustable tappets m^2 m^3 carried by the yarn guide slides, which enable the rock lever M^2 to reset both the yarn guide slides when changing the direction of motion; (*c*) the presser N mounted in guides on the longitudinal rib A^1 and furnished with inclined slots to receive pins *n* from a sliding bar N^1, which is reciprocated from a rotary cam n^{3x} for the purpose of imparting a backward and forward motion to the presser, such combination of mechanism

providing for the manufacture of one or other of the fabrics illustrated by the diagrams in sheets VII and VIII, as described. 6th. In combination with the yarn-delivery apparatus, of circular and straight knitting machines of the classes described, the roughened roller R^2 and guide rollers 1 and 2, whereby an equal bite is obtained on all the yarns. Lastly. In combination with the yarn-delivery apparatus, the swing frame Q through which pendant wires (provided with eyes for carrying the yarn), hang freely a reciprocating bar Q^1, operated by an eccentric Q^2 on the cam shaft, a sliding bolt Q^3 bearing on the back of the swinging frame Q and carrying on its underside a retaining catch *q*, which hold the belt-shifter until the fall of a wire releases it, and thereby arrests the action of the machine on the severance or the undue slackening of a thread.

No. 18,033. Mechanism for Forming Tubular Wire. (*Machine pour former les fils métalliques tubulaires.*)

Thomas S. Bacon, Milford, and Andrew Eppler, jr., Boston, Mass., U. S., 4th November, 1883; 5 years.

Claim.—1st. That organized mechanism for forming tubular wire composed of the following elements: first, two series of rotary cutters adapted to sever a sheet of metal into strips; secondly, a positively rotated arbor, and a reel detachably secured thereto and adapted to wind said strips into a series of independent coils; thirdly, a laterally movable support for said reel and, fourthly, a series of positively rotated tube forming rolls adapted to take a strip from the reel and convert it into a tube, as set forth. 2nd. The combination, with the strip forming rotary cutters, of the fingers, projecting into the spaces between said cutters, as set forth. 3rd. The combination, with the strip-forming cutters, of the edge guides for the sheet to be connected into strips, one of said guides being fixed, and the other having a yielding pressure against the edge of the sheet, as set forth. 4th. The reel having the adjustable strip-holder adapted to release each coiled strip in succession, as set forth. 5th. The combination, with the reel and its motor, of the series of fingers, whereby the coils wound on the reel are kept separate, as set forth. 6th. The reel, having the adjustable follower, as set forth. 7th. The combination, with the tube-forming rolls journalled in fixed bearings, of the corresponding rolls journalled in movable bearings, and means for adjusting said movable bearings, and positively holding them in any position to which they may be adjusted, as set forth. 8th. The combination, with the tube forming rolls, of the reel 47, a positive motor therefor, and a friction device connecting said reel with its motor, whereby the reel is enabled to slip and rotate more slowly than its motor, as set forth.

No. 18,034. Deoxidising Furnace.

(*Fourneau de déoxydation.*)

Joel Wilson, Dover, N. J., and George W. Thompson, New York, N. Y., U. S., 4th November, 1883; 10 years.

Claim.—1st. A deoxidizing furnace constructed, substantially as described, directly over the balling furnace. 2nd. A deoxidizing furnace constructed with an internal flue D having a lining E, and placed directly over the rear of the balling furnace, and communicating therewith by a conically arched chamber B and surrounded by an annular space divided alternately into return flues F communicating with the main flue at the top and joined together at the base by a circular flue F^1, and in retorts R chargeable from above and communicating by curved pipes I with the chamber B, through which the deoxidized ore is discharged directly into the latter. 3rd. The combination of the balling furnace A with a deoxidizing furnace placed over and at the rear of said balling furnace, carried upon a platform P supported by columns C, and consisting of an internal flue D surrounded annularly by return flues F and retorts R alternately with one another. 4th. A deoxidizing furnace constructed substantially as described, in combination with a conical chamber B communicating with the balling furnace A. 5th. A deoxidizing furnace constructed over the rear portion of a balling furnace, consisting of an internal flue D provided with a lining E, said flue being covered at the top and communicating by openings *f f* with the surrounding return flues. 6th. A deoxidizing furnace consisting of a central flue D surrounded by return flue F joined at the base by a circular flue F^1, said flue F alternating with retorts placed upon the arches of the circular flue F^1, all substantially as described and for the purpose described.

No. 18,035. Sectional Boiler.

(*Chaudière en sections.*)

Warden King, (assignee of Archibald Spence), Montreal, Que., 4th November, 1883; 5 years.

Claim.—1st. The combination of the water-connecting jacket K having bridge pieces T, with the sections L having divisions M, substantially as described. 2nd. The combination of the section A, pipes B and section C, substantially as described. 3rd. The combination of the sections A C and pipes B, with connecting jacket K and sections L constructed as described, the whole substantially as set forth and shown.

No. 18,036. Gate Valve. (*Robinet à valve.*)

Thomas Galvin and John Galvin, Detroit, Mich., U.S., 4th November, 1883; 5 years.

Claim.—1st. In a valve, substantially such as shown, the combination of a shell or case, a sliding gate, a stem for moving said gate and two swinging wedges arranged to swing laterally toward each other in a plane parallel with the face of the gate and behind the same, and to crowd the gate to its seat, substantially as explained. 2nd. In a valve, substantially such as shown, the combination of a shell or case, a disk or gate, means, substantially such as described, for moving the gate wedges tapered both in the direction of their length and in cross section, and arranged to be moved behind the gate in a direction at right angles to the movement of the disk or gate, whereby the benefits of their taper in both directions is utilized for crowding the gate to its seat. 3rd. The described valve consisting of shell or case A, a rotating screw-stem C, a yoke or nut E fitting upon said stem and carrying a disk F, and wedges G arranged in rear of said disk adapted to move in a plane parallel therewith, but at right angles to the line of movement of the gates, and arranged to bear against the rear face of the disk as the yoke or nut E descends, substantially as explained. 4th. The described valve consisting of shell A, cap B, threaded stem C, yoke E provided with lugs *d* and arms *g*, disks F and wedges G, all arranged and operating, substantially as shown and described. 5th. In a valve, the combination of a shell or case A provided with guides *h* and inclines *j*, cap B, stem C, nut or yoke E provided with lugs *d* and arms *g*, disks F and wedges G carried by the nut or yoke E, all substantially as shown. 6th. In a valve, substantially such as shown and described, the combination, with a shell A, of a movable block or yoke E provided with lugs *d*, disks F having elongated eyes to receive said lugs and formed with lugs *m*, wedges G and spring H interposed between the block and the lugs *m*, substantially as shown and for the purpose explained. 7th. In a valve, substantially such as described, the combination of a shell or case and a vertically-moving nut or yoke E provided with lateral studs or lugs *d* and arms *g*, disks F having perforated ears *e* and suspended from the lugs *d*, and wedges G suspended from the arms *g*, all substantially as shown. 8th. In a valve, the combination of a shell or case, a vertically moving yoke E provided with arms *g* and hooks *i*, wedges G suspended from said hooks and a disk or disks F, arranged substantially as shown, to receive the pressure of the wedges G. 9th. In combination with shell or case A and disks F F having bevelled faces *k*, swinging wedges located between the disks and having a wedge-form, both in the direction of their length and at right angles thereto, substantially as and for the purpose set forth. 10th. The valve shell or case A provided with escape valve *r* and yoke or lever *v*, and with a reciprocating gate arranged to bear upon said lever, substantially as and for the purpose explained.

No. 18,037. Ladies Work Stand.

(*Table à ouvrage.*)

Joseph A. Fournier, Ottawa, Ont., 4th November, 1883; 5 years.

Claim.—1st. The upright stalk *a* serving as a pivotal support to a revolving bracket, and also being made hollow and of suitable length as a receptacle for darning and other large sized needles. 2nd. The removable spindles *c* chambered and provided with number marks and the stoppers *d*, substantially as shown and described. 3rd. The openings *f* formed in the shelf *b* for the purpose of receiving scissors, etc., as specified. 4th. The combination of the base A, chambered stalk *a*, body B, shelves *b*, removable hollow spindles *c* and the box C provided with the lid D, having the handle *g* and the pin cushion *h*, substantially as shown and described and for the purpose set forth.

No. 18,038. Wrench. (*Clé à écrou.*)

Peter Rotermund, Eureka, Cal., U.S., 4th November. 1883; 5 years.

Claim.—1st. In a wrench, the combination, with the bar A having a stationary jaw and provided on one edge with the teeth C extending entirely across said edge, of the sliding jaw having the pivoted clutch D provided with teeth arranged to enter endwise between the teeth of the bar when the clutch is closed, substantially as and for the purpose set forth. 2nd. A wrench consisting of bar A having beveled teeth C, hammer-head *a*, sliding jaw *d* having adjustable serrated clutch D and flat spring *g*, substantially as shown and described.

No. 18,039. Electric Current Meter.

(*Compteur de courant électrique.*)

Joseph S. Beeman, W. Taylor and F. King, London, Eng., 10th November, 1883: 5 years.

Claim.—1st. The combination, in apparatus for measuring electrical force and currents, of the solenoid A, sucking magnets B, coils C, spring D and indicating mechanism G H I J, arranged so as to operate, substantially in the manner described. 2nd. The combination, in apparatus for measuring and indicating electric force and currents, of the mechanism marked T U V in Figure 1 of our drawings, or its equivalent, for starting (when a current is transmitted) the clock-work which imparts motion to the paper on which the force is indicated, substantially as described. 3rd. The modified construction of indicating apparatus illustrated by Figure 4 of the drawings.

No 18,040. Spring Vehicle. (*Voiture à ressorts.*)

Christopher Huffsteter, Benton Harbor, Mich., U.S., 10th November, 1883; 5 years.

Claim.—1st. The described method of securing spring supports to axles by means of one or more studs *b* formed upon the axle, and corresponding recesses *a* formed in the support B, substantially as set forth. 2nd. In combination with the axle A provided with one or more studs *b*, the spring supports B provided with corresponding recesses *a* and clip *c*, all arranged to operate substantially as shown and described.

No. 18,041. Knitting Machine.

(*Machine à tricoter.*)

William W. Clay, Paris, Ont., 10th November, 1883; 5 years.

Claim.—1st. A presser-wheel having tuck-presser notches or recesses formed around its periphery, in combination with devices constructed to fit into such notches and capable of adjustment therein, and mechanism for operating said devices to throw them in or out of line with the periphery of the presser-wheel, whereby said wheel may be converted into a plain or tuck-presser as desired without stopping the machine, substantially as set forth. 2nd. A disk having tuck-presser notches in its periphery, in combination with a series of blocks constructed to fit in said notches, and mechanism whereby the said blocks may be thrown out or on a line with, or with drawn from the periphery of the presser-wheel at predetermined periods, substan-

tially as and for the purpose specified. 3rd. The presser wheel A provided with the flange *f* and tuck-presser notches *h*, levers *d* provided with notches *e* and adapted to rest and rock upon the flanges *f*, blocks *b* hinged to the outer ends of the levers, sleeve B provided with a groove on its periphery adapted to engage the inner ends of said levers, spindle C, sleeve E and bolts D, in combination with the post G, lever F pivoted to said post and connected at its inner end with the sleeve E, and mechanism connected with the outer end of the lever F adapted to rock said lever on its pivot at predetermined periods, whereby a vertical movement may be imparted to the sleeve E, and devices connected therewith, and the blocks *b* be thrown out on a line with or be withdrawn from the periphery of the presser-wheel, substantially as described. 4th. The combination of the blocks *b* and sleeve E and mechanism substantially, as described, connecting said blocks with the sleeve E, with the post G, lever F pivotally secured thereto, one end of which lever is connected to said sleeve, and the other end slotted as described, the pin H arranged in said slotted end and adapted to be moved nearer to, or farther from the fulcrum thereof, and devices, substantially as described, for operating said lever, as set forth. 5th. The combination, with the blocks *b*, sliding bar J, lever I and mechanism, substantially as described, connecting said lever with the blocks *b*, of the pivoted arm L, the pawl M and pattern mechanism for operating said pawl, whereby the lever is raised or lowered at predetermined intervals, substantially as described. 6th. The combination of the pawl M, the pivoted arm L and sliding bar J, with the sprocket-wheel O, chain N, stud or studs P and mechanism for rotating said sprocket-wheel, the combination being and operating, substantially as and for the purpose set forth. 7th. A presser-wheel having formed, on its upper inner surface, annular flange *f*, as and for the purpose set forth.

No. 18,042. Watchman's Detector.

(*Délateur d'homme de garde.*)

Thomas Ahearn, Ottawa, Ont., 10th November, 1883; 5 years.

Claim—1st. In a time detector, the combination of a time movement, a gravitating segment meshing with a wheel thereof and arranged to complete an electric alarm circuit when moved a given distance by the wheel, an armature connected with the segment, an electro-magnet in a second electric circuit, and a pull or like device adapted and arranged to complete said second circuit, substantially as and for the purpose set forth. 2nd. In combination with the time movement and a circuit-closer moved thereby, an armature connected with the circuit-closer, an electro-magnet in a main electric circuit, a single stroke electric bell in a local circuit arranged to be closed by the armature, and one or more signal buttons or wheels, each arranged to close and open the main electric circuit and to attract and release the armature, substantially as set forth, whereby the circuit-closer of the local line is caused to fall away from its closing position, and a signal is sounded on the bell to show from what point the operation is effected. 3rd. In a time detector, substantially such as described, the combination, with a wheel of the time movement, of a circuit-closer consisting of a toothed rack in electrical connection with one pole of a battery, and a contact plate in the path of travel of said rack connected with the opposite pole of the battery. 4th. In a time detector, a circuit-closer consisting of a toothed rack meshing with a wheel of a time movement, a contact point in the path of movement of said rack, an armature connected with the rack, an electro magnet in an open main circuit, and a circuit closer also in said main circuit, all combined to operate substantially as set forth, whereby the closing of the main circuit is caused to attract the armature, and to withdraw the rack from mesh with the wheel of the time movement. 5th. In combination with a time movement and with a toothed rack operated thereby, and arranged to close an electric circuit, means, substantially such as described and shown, for withdrawing the rack from the wheel and preventing a completion of the circuit. 6th. In a time detector, substantially such as described and shown, a combination of a time movement, a gravitating segmental circuit-closer arranged to be moved by a wheel of the time movement and to close a local alarm circuit within a given period of time, an armature connected with the segment, an electro-magnet in an open main circuit arranged to attract the armature, and a circuit closer in the main circuit, whereby the segment can be withdrawn from the time movement as desired. 7th. In combination with the local alarm circuit and with wheel B of a time movement, a segmental gravitating circuit-closer meshing with said wheel, a pivoted armature carrying said circuit closer and provided with a counterpoise *c*, an electro-magnet in a main circuit arranged to attract the armature, and a circuit closer in the main circuit adapted to close the circuit and cause the magnet to attract the armature. 8th. In a time detector, substantially such as described and shown, the combination of a time movement, an armature, a toothed segment pivoted to the armature arranged to mesh with a wheel of the time movement and to close a local electric circuit containing a bell or alarm, and electro-magnet in an open main circuit arranged to attract the armature aforesaid, and a moveable device arranged to complete the main circuit, substantially as and for the purpose set forth. 9th. The described watchman's time check consisting of time movement A provided with wheel B, segment C pivoted to the swinging armature D, local battery E, conductors *d e* and the bell included in the circuit of said local battery, contact piece F, main battery Q, electro-magnet R and one or more circuit closers T S, all substantially as shown and described. 10th. The described watchman's time check consisting of the time movement A provided with wheel B, segment C pivoted to moving armature D, local battery E, conductors *d* and *e*, vibrating bell H, branch wire *f*, single stroke bell J, recorder K and top block L, all combined and arranged to operate, substantially as described and shown. 11th. In a watchman's time detector, substantially such as described and shown, the combination, with the separated ends of the local battery line, of a spring jack arranged to extend within a drawer or like place to break and perfect said line, and to extend across the path of the locked bolt of the drawer, when the circuit is broken, substantially as and for the purpose explained. 12th. In a time detector, a dial plate having circumferentially segment pieces, each connected to a wire leading to a station to be visited having a ground wire, a clock pointer having frictional contact with the dial segments and connected to an electric alarm circuit having a time mechanism operating a circuit-closer C, carried pivotally on an armature D operating as set forth, so that, unless the circuit is closed at a station at a stated time, to re-set the circuit-closer actuated by the time mechanism, an alarm will be sounded from a bell in a secondary circuit, as set forth.

No. 18,043 Gas Generator. (*Générateur à gaz.*)

Peter English, London, Ont., 10th November, 1883; 5 years.

Claim.—1st. A water packet N_2 surrounding the metallic casing N of the furnace G, substantially as shown and described and for the purpose specified. 2nd. A cupola provided with a dividing partition L separating the superheating chamber H from the generating furnace G, for the purpose of thoroughly intermingling the water gas or steam and vapour of the oil, before being introduced into the superheater H. 3rd. A generating furnace G provided with a metallic casing N, substantially as shown and described and for the purpose specified. 4th. The generating furnace G provided with a bevelled conductor G_1, substantially as shown and described and for the purpose specified. 5th. The cupola C provided with furnace generator G, bevelled conductor G_1 and metallic casing N, water jacket N_2, superheating chamber H provided with brick-work H_1, conducting tube I and central partition L, substantially as shown and described and for the purpose specified.

No. 18,044. Grain Cleaner. (*Nettoyeur des grains.*)

John Burkholder, Centreburg, Ohio, U. S., 10th November, 1883; 5 years.

Claim.—1st. In a grain-scouring machine, the combination of the fixed case or shell having numerous perforations in its bottom and provided, at the top, with a stationary brush, and a rotating inner cylinder having spiral ribs and pins secured to such ribs, projecting horizontally across the path between them, the said outer cylinder being provided with proper inlet and outlet devices, substantially as described.

No. 18,045. Single-Tree Clip.

(*Crochet de palonnier.*)

Alfred F. Spooler, Grand Island, N. Y., U. S., 10th November, 1883; 5 years.

Claim.—A single-tree clip consisting of the parts *a* a_3 provided with the hook-shaped or interlocking portion a_1 a_2, the bolt-holes c_1 *e*, corresponding depression a_4 c_5, a bolt e_1, the parts c_3 c_4 and a ring or hook, as and for the purposes described.

No. 18,046. Wrench. (*Clé à écrou.*)

Henry W. Atwater, Orange, N. J., U. S., 10th. November, 1883; 5 years.

Claim.—1st. The bar *b* with teeth on one side, the fixed jaw *a* and sliding jaw *f*, in combination with the eccentric *h* with teeth upon its periphery, a spring to keep said eccentric in contact with the bar *b*, and a lever to swing the eccentric away from said bar, substantially as and for the purposes specified. 2nd. The toothed bar *b*, fixed jaw *a* and sliding jaw *f*, in combination with the toothed and notched eccentric *h*, the lever *i* with its short end in a notch in said eccentric, and the spring *k* pressing upon the lever, substantially as and for the purposes specified.

No. 18,047. Saw Filing Machine.

(*Machine à limer les scies.*)

Elias Roth, New Oxford, Penn., U.S., 10th November, 1883; 5 years.

Claim.—1st. In a saw filing machine, the combination, with the clamping-head B provided with the legs *c*, of the adjustable file frame holding piece *d*, substantially as shown and described. 2nd. In a saw filing machine, the combination, with the clamping-head B having its under surface grooved and provided with the legs *c*, of the ribbed file holding piece *d* adjustably secured to said head, substantially as shown and described. 3rd. In saw filing machines, the combination of the curved piece *d*, the head or plate *b* and clamping screw *e*, substantially as shown and described. 4th. In a saw filing machine, the gage C consisting of the straight edged and graduated plate *i*, and the pointer K having the straight edge *l* and pivoted to said plate i_1, substantially as shown and described.

No. 18,048. Fence Post. (*Pieu de clôture*)

Norman A. Haven, Lime Springs, Iowa, U. S., 10th November, 1883; 5 years.

Claim.—1st. A fence post slotted from the upper end through the middle, down to a point at the desired height of the bottom rail above the ground, and having metallic filling pieces *b* with bars b_1 turned in opposite directions, as shown and described. 2nd. The combination, with a fence post slotted at *a* as specified, and the fence wires *o*, of the eye staples *g*, substantially as shown and described.

No. 18,049. Combined Envelope and Letter Sheet. (*Enveloppe et feuille à lettre combinées.*)

Arthur Cox, Toronto, Ont., 10th November, 1883; 5 years.

Claim.—1st. A combined envelope and letter sheet having an addressing space arranged on the same side of the sheet upon which the communication is written, and in such a position that, when the sheet is folded, the address shall appear on the outside, while the communication is entirely hidden from view. 2nd. A combined envelope and letter sheet having an addressing space arranged on the same side of the sheet upon which the communication is written, and a mark printed or otherwise made on the surface of the sheet at such a point as will indicate the proper width of the fold required to hide the communication from view while leaving the address exposed. 3rd. In a combined envelope and letter sheet arranged to

fold so as to hide the communication from view while leaving the address exposed, the combination of a label or its equivalent, gummed or otherwise fixed to the end or ends of the paper so folded, for the purpose of preventing the sheet being unfolded until the label or its equivalent has been removed. 4th. A combined envelope and letter sheet arranged to fold so as to hide the communication from view and having its end or ends fastened to prevent its unfolding, with perforations made in the paper at such a point in the paper that the fastened end or ends may be torn off, without injuring any portion of the sheet upon which the communication or address is written.

No. 18,050. Horse Hay Rake. (*Râteau à cheval.*)

Louis H. Hébert, St. Johns, Que., 10th November, 1883; 5 years.

Claim.—In a horse hay rake, the working lever E fulcrumed on the frame of the implement, connected with the lifting lever D by the link c, and with the hand lever F by the links *e*, and having the stop *i*, substantially as shown and described.

No. 18,051. Electric Arc Light.

(*Lumière à arc électrique.*)

Elihu Thomson, New Britain, Conn., U. S., 10th November, 1883; 5 years.

Claim—1st. In an electric lamp, a coil traversed by the direct current surrounding a movable magnetizable bar pivoted as described to an iron frame, in combination with a coil traversed by the derived circuit surrounding a separate fixed core, the pole of which is placed in juxtaposition with the movable bar aforesaid, said movable bar having a transverse play inside the direct coil aforesaid, substantially as described. 2nd. In an electric lamp, the combination of a fixed shunt magnet with a movable bar inclosed by the direct coils leaving sufficient space in the interior thereof for the transverse movement of said movable bar, and the adjoining poles of which shunt magnet and movable bar magnet are of the same polarity in action. 3rd. In an electric lamp, a friction shoe T bearing upon the carbon rod, in combination with the lifting bars Q and M, releasing bar L and spring S^1, or their equivalents, substantially as described.

No. 18,052. Electric Current Regulator.

(*Régulateur de courant électrique.*)

Elihu Thomson, New Britain, Conn., U. S., 10th November, 1883; 5 years.

Claim.—1st. The combination, with a field-of-force magnet in a dynamo-electric machine, of a direct circuit and a derived circuit magnetizing coil or helix, bearing to one another the definite magnetizing relation described, such that the magnetizing influence of one shall develop in a closed circuit connected to the armature an electro-motive force or current strength as the case may be, the same as that produced in the main or working circuit, when the field magnet is under the influence of both coils. 2nd. The combination, with a dynamo-electric machine operating a series of lights or working resistances, of two field magnet coils, one in a direct and the other in a derived circuit to the working resistances, the magnetizing influence of the former being related to that of the latter when all the lights are in circuit, as the resistance of the circuit, when the lamps or resistances are all shunted out, is to the resistance of the circuit, when all the lamps or working resistance are in circuit. 3rd. The combination, with a dynamo-electric machine supplying current to a number of lights or working resistances in series, of two field magnetizing coils or helices bearing to one another the definite magnetizing relation specified, such that, under the magnetizing influence of the direct-circuit helix only, carrying the standard current, the current flowing in a short circuit connected to the armature shall be the same as that flowing in the main circuit, containing all the working resistances when the armature is under the influence of both coils or helices, and the main circuit helix is in circuit with said armature. 4th. The combination, with the field magnet in a dynamo-electric machine, of a main and a derived circuit helix separate from one another, and applied one to magnetize one pole, and the other the other pole of the field magnet. 5th. The combination, in a dynamo-electric machine, of two magnetizing helices, one in the direct and the other in a derived circuit around the work, each provided with an adjustable resistance connected thereto, for the purpose of modifying and adjusting their relative magnetizing effects.

No. 18,053. Trimming Attachment for Sewing Machines. (*Appareil de machines à coudre faisant les garnitures.*)

John W. Dewees, Philadelphia, Penn., U. S., 12th November, 1883; 5 years.

Claim.—1st. A trimmer or device for removing parts of hosiery or other fabric, comprising two jaws or cams having blunt edges which are opposed to each other and which operate by a rocking motion, to produce a severance or rupture of the fabric by pressure or abrasion, substantially as set forth. 2nd. A fabric trimmer comprising two levers arranged to form a toggle and having segmental opposing, severing or rupturing edges adapted and designed to be rocked on each other, substantially as shown and described. 3rd. In a fabric trimmer, the combination of the pivoted levers *g h*, one having a flat and the other a round severing or rending edge, substantially as shown and described. 4th. In a fabric trimmer operated by, or in connection with the working parts of a sewing machine, the combination with the bracket F, of severing or rupturing toggle levers *g h* having gear teeth $g^2 h^2$, substantially as set forth and shown. 5th. The combination, with a sewing machine, of means for rupturing or severing by pressure or abrasion, hosiery or other fabric while being stitched, such means comprising two blunt jaws between which such fabric is passed while being fed to the needle, and mechanism for rocking the abrading edges of said jaws against each other, substantially as set forth. 6th. The combination, with the severing or rupturing inter-locking cam or toggle levers *g h*, of the feed bar K and screw or pivot *k*, substantially as shown. 7th. In a fabric trimmer designed and adapted to be operated by, or in connection with the working parts of a sewing machine, the combination, with the severing or rupturing cam or toggle levers *g h* and shaft D, of intermediate mechanism, substantially as shown and described, for communicating a rocking motion to said levers, as set forth. 8th. In a fabric trimmer designed and adapted to be operated by or in connection with the working parts of a sewing machine, the combination, with the severing or rupturing cam or toggle levers *g h*, of means substantially as set forth and shown, for adjusting one of said levers toward the other, for the purpose described. 9th. In a fabric trimmer designed and adapted to be operated by, or in connection with the working parts of a sewing machine, the combination, with the severing or rupturing cam or toggle levers *g h*, of slide L and adjusting screw O, substantially as shown and set forth. 10th. The combination of bracket F, the severing or rupturing cam or toggle levers *g h*, feed bar K, cross head L, guides *l* l^1, lever or bar M and adjusting screw O, the several parts being constructed for operation, substantially as shown and described.

No. 18,054. Insulator for Telegraph Wire.

(*Isoloir télégraphique.*)

Joseph S. Lewis, Birkenhead, Eng., 12th November, 1883; 5 years.

Claim.—1st. The method of attaching line wires to insulators by placing thereon a shackle or clip forming, with the line wire, a complete though irregular ring, and screwing the insulator into the ring. 2nd. In combination with an insulator capable of being screwed or wedged tight into it, a shackle grasping the wire in such manner as to form a complete though irregular ring with the said line wire, into which ring the insulator is wedged or secured. 3rd. As a new article of manufacture, the insulator for telegraphic and other line wires with the end or part upon which the line wire is attached, formed in the shape of an expanding or conical screw. 4th. As a new article of manufacture, the shackle of stout wire or metallic rod in shape resembling a horse shoe with its two ends turned up into hooks, for the purposes described. 5th. The insulating apparatus for line and other wires consisting of a device B forming, with the line wire, a complete loop or ring, and an insulator A fitting into that ring and capable of being screwed or wedged tight in the same. 6th. The described tool for turning the expanding screw in the original clay composed of a hollow loop or hook of metallic plate, through which loop or hook the turnings pass away, as the tool cuts into the clay.

No. 18,055. Improvements in Clothes Wringers. (*Perfectionnements aux essoreuses à linge.*)

Milo J. Althouse, Waupun, Wis., U. S., 12th November, 1883; 5 years.

Claim.—1st. As an improvement in clothes wringers, the combination, with the main frame and the roll carrying lever D, of the eye bolt H, constructed and applied as described and shown. 2nd. In a clothes wringer, the combination of the wooden frame piece *a*, the eyebolt G having its end perforated and flattened to serve as a bearing, the elastic lever D, connected with the roll and clamp and seated against the end of the bolt G, and the stirrup belt H inverted through the eye bolt and lever and secured to the latter, as described and shown. 3rd. The improved joint for connecting the elastic lever with the main frame of a wringer consisting of a bolt having its end perforated transversely and provided with a straight rounded edge, and a stirrup-bolt inverted through said end, as described and shown.

No. 18,056, Improvements in Buttons.

(*Perfectionnements aux boutons.*)

Richard Roschman, Waterloo, Ont., 12th November, 1883; 5 years

Claim.—1st. In a button having a projecting hollow shank, the combination or a rounded wire pin inserted through the shank at, or about right angles to the longitudinal centre of its hole, substantially as and for the purpose specified. 2nd. In a button having a rounded wire pin inserted in its back parallel, or nearly so, with its front surface, the combination of a slotted passage-way cut in the back of the button and extending below the wire pin, substantially as and for the purpose specified. 3rd. In a button having a hole pierced through its centre, the combination of a rounded wire pin inserted in the button so as to project through the hole at, or about, right angles to its longitudinal centre.

No. 18,057. Improvements in Rotary Fans.

(*Perfectionnements aux éventails rotatoires.*)

Darwin S. Wright, Macon, Ga., U. S., 12th November, 1883; 5 years.

Claim.—The combination of the tubular crane, the extension rod arranged in the tubular crane and having a sleeve provided with a thumb-screw, the vertical rod arranged in said sleeve and having a bracket for supporting a spindle and pulley, and the hub having radial arms for receiving the fans, substantially as shown and described, whereby the fans may be adapted to rotate either in a horizontal or a vertical plane, as set forth.

No. 18,058. Bed Spring Connections.

(*Liaisons des ressorts de sommiers.*)

Samuel K. Butterfield, Swanten, Vt., U. S., 12th November, 1883; 5 years.

Claim.—In a bed bottom, the combination of the spiral springs A with the spring wire loops B having the extended ends *a*, with the connecting link C, as shown and for the purpose set forth.

No. 18,059. Improvements in Electro-Magnetic Belts. (*Perfectionnements aux ceintures électro-magnétiques.*)

Edgerton O. Paddock, Montreal, Que., 12th November, 1883; 5 years.

Claim.—1st. A belt or other similar appliance having between its linings, copper and zinc strips B and C, and two or more magnetized plates or strips, arranged and combined, substantially in the manner and for the purpose set forth. 2nd. In a belt and similar appliances, the combination of copper and zinc strips B and C, divided into sections and arranged alternately in two or more rows and two or more plates or strips, arranged and combined, substantially in the manner and for the purpose set forth.

No. 18,060. Improvements in Railway Scrapers and Levellers. (*Perfectionnements aux grattoirs-niveleurs des railroutes.*)

Daniel L. Harris, Greencastle, and Eleazer D. Carter, Terre Haute, Ind., U. S., 12th November, 1883; 5 years.

Claim.—1st. The combination of a car-scraper C hinged at c_3 and c_4 to the frame-work beneath the car to swing upward, as shown, a winch mounted on said car, and chains or ropes connecting said scrapers and said winch, substantially as set forth. 2nd The combination, with a car having its sides cut away to receive the scrapers when raised up, of said scrapers and mechanism for raising and lowering them, substantially as set forth. 3rd. The combination of the car, the framework B_1 B^2 B_3 B_4 B_5, the scraper C, the winch D and the chains E, substantially as specified.

No. 18,061. Improvements in Telephone Conductors. (*Perfectionnements aux conducteurs téléphoniques.*)

Franz C. Guilleaume, Cologne, Germany, 13th November, 1883; 5 years.

Claim.—The combination of insulated wires with a non-insulated straining-wire serving for earth connection in each strand, each insulated wire or the finished strand of insulated wires being taped with tin-foil or other suitable material, and such strand of tin-foil, taped insulated wires or tin-foil taped strands of insulated wires being laid round a tin-foil taped non-insulated strand of straining wires serving also for earth connection.

No. 18,062. Implement for making Heel Stiffeners. (*Appareil pour confectionner les contreforts des chaussures.*)

Joseph Germain, Montreal, Que., 13th November, 1883; 5 years.

Claim.—1st. A moulding implement for making heel stiffeners composed mainly of the core block B, moulding block C, guiding strips D, lever E and flanging plate F, substantially as and for the purpose set forth. 2nd. The core block B mounted on a bed plate *a* secured to the table A, the moulding block C mounted on the bed plate *e* which is held in place and guided by the guiding strips D, and the lever E fulcrumed on the table A, connected with the bed plate *e* by the link *d*, and provided with the stirrup *e*, all substantially as described and for the purpose set forth.

No. 18,063. Machine for Packing Staves.

(*Machine pour empaqueter les douves.*)

Peter Parker, Marine City, Mich., U. S., 13th November, 1883; 5 years.

Claim.—1st. The combination of the pressing arms A A, and the lever C in connection with the platform G and the helicon spring D, substantially as and for the purpose set forth. 2nd. The combination of the notched ratchet F and the trip H, with the helicon spring I and the plate Q, substantially as and for the purpose set forth.

No. 18,064. Sawing Machine.

(*Scierie mécanique.*)

John T. H. Drake, Emporia, Mo., U. S., 13th November, 1883; 10 years.

Claim.—A sawing machine consisting of a track frame supported on crossed standards and legs, and having a treadle P, the saw G, connected to an upper arm of one of the standards by an arched spring E, the adjustable connecting rod *r* and the carriage V having a downward extension between the track bars, substantially as specified.

No. 18,065. Ditching Shovel. (*Bèche.*)

Peter F. Chambard, Fayette, Ohio, U. S., 13th November, 1883; 5 years.

Claim.—1st.. The combination, with the handle, of the arms C and C_1, the upper portions of said arms shaped into suitable clamping plates, said handle secured between said plates and in connection therewith, a suitable blade or scoop A pivotally secured to the lower ends of said arms, substantially as described. 2nd. The combination, with the blade A, of arms pivotally connected therewith, said arms shaped at their upper ends into suitable clamping plates, a handle secured between said plates by suitable bolts and in connection therewith, braces E and E_1, said braces adjustably connected with the handle, substantially as described. 3rd. The combination, with the blade A, of arms pivotally secured thereto, said arms shaped into clamping plates at their under ends, a handle secured between said plates by suitable bolts and in connection therewith, braces secured at their lower ends to said blade, the upper ends of said braces serrated on their inner faces and adapted to be adjustably secured upon one of the bolts by which the handle is secured in place, the adjacent faces of the clamp being suitably ribbed to engage with said serrated faces, substantially as described. 4th. The method described of securing the handle in place, consisting of shaping the upper ends of the arms D and D_1 into suitable clamping plates, the handle being held firmly between said plates by suitable bolts, substantially as described.

No. 18,066. Coupling for Vehicle Springs.

(*Joint pour les ressorts des voitures.*)

Thomas D. Lines, Syracuse, N.Y., U.S., 13th November, 1883; 5 years.

Claim.—1st. The spring S provided with the screw-threaded stud *a*, in combination with the coupling C, provided with the screw-threaded socket *b*, as shown and set forth. 2nd. The combination of the coupling C C, provided with sockets *b* having their threads running respectively in opposite directions, and the spring S^1 provided with right and left-threaded studs *a a* respectively at opposite ends, substantially as described and shown. 3rd. The side springs S and cross spring S^1, provided each with a screw-threaded stud *a*, in combination with the coupling C having screw-threaded sockets *b b* at right angles to and integral with each other. 4th. In combination with the spring S S_1 provided respectively with a screw-threaded stud *a*, the coupling C consisting of screw-threaded thimbles closed at one end and disposed at right angles one over the other, and cast in one piece, substantially as described and shown.

No. 18,067. Improvements in Fire-Lighters.

(*Perfectionnements aux allumoirs.*)

John M. Russell, Garrison, Ks., U. S., 13th November, 1883; 5 years.

Claim.—1st. In a fire-lighter, the combination of the pivoted match-arm, the operating spring, the alarm mechanism and the releasing-rod having one end arranged to engage and release the match-carrying arm, and its other end connected eccentrically with the main shaft of the alarm mechanism, substantially as and for the purpose set forth. 2nd. In a fire-lighter, the combination, with the match-arm pivoted on a suitable support and means for holding, releasing and operating the same, of a scratch-block pivoted in the path of the match-end of said arm, the upper end of said scratch-block being extended above its pivotal point, and a retracting-spring connecting the rear side of said upward extension to the framing, whereby the said scratch-block is made yielding to conform to the curved line of motion of the pivoted match-arm, substantially as set forth. 3rd. The combination of the fire-box, the scratch-block arranged therein, the match-arm, the standard arranged alongside the outer end of said arm, a spring having one end made fast to the standard and its other end connected to the outer end of the match-arm, the alarm mechanism and the releasing rod connected with and operated by the alarm menhanism, and engaging and automatically releasing the match-arm, as set forth. 4th. In a fire-lighter, substantially as described and shown, the combination, with the pivoted match-arm C and the alarm mechanism shaft e_3, of the Z-shaped rod E having one end connected eccentrically to the shaft e_3, and its opposite end passed through a suitable support in position to hold and automatically release the pivoted match-arm, substantially as described and shown.

No. 18,068. Cross-Cut Saw Frame.

(*Manche de scie de travers.*)

Andrew Schooley, Litchfield, N. Y., U. S., 13th November, 1883; 5 years.

Claim.—The combination, with a cross-cut saw, of rising and falling supports at one end, wheels and axle at the other, guide-rails above and below the wheels, and a vertical slide carrying the guide-rails, as shown and described.

No. 18,069. Improvements in Wheel Hubs.

(*Perfectionnements aux moyeux des roues.*)

The Lansing Wheel Company, (assignee of E. P. Newman,) Lansing, Mich., U. S., 14th November, 1883; 5 years.

Claim.—1st. In a vehicle hub, the described band or collar having an inwardly-projecting internally-threaded ring provided with sockets or mortises, to receive the inner ends of the spokes, substantially as set forth. 2nd. In a vehicle-hub, the combination of the axle-box having an externally-threaded section and an annular flange near its inner end, the inner band or collar having radial flanges, the outer band or collar having radial flanges and provided with an internally-threaded ring having sockets or mortises, to receive the inner ends of the spokes and the fastening bolts or rivets, substantially as set forth.

No. 18,070. Improvement in Hand Rakes.

(*Perfectionnement des râteaux à bras.*)

Walter F. Drew, Sacramento, Cal., U. S., 14th November, 1883; 5 years.

Claim.—A rake-head having holes through it, and a vertical groove in the upper side of said head joining the holes, in combination with teeth in said holes, bent sidewise to rest in said groove, and bent forward below the head, as shown and described.

No. 18,071. Improvement in Bolt Locks.

(*Perfectionnement des arrête-boulons,*)

D. Franklin Blighton, Tonawanda, N. Y., U. S., 14th November, 1883; 5 years.

Claim.—A track bolt, or other bolt, provided with a lug *c* having the tapering portions c_1 c_2, in combination with a fish plate, or its equivalent, having a tapering hole adapted to receive the lug, substantially as and for the purposes described.

No. 18,072. Improvement in Sand Bands.

(*Perfectionnement aux colliers des moyeux.*)

Delos M. White, Hudson, Wis., and Jonathan Hitchcock, St. Paul, Minn., U. S., 14th November, 1883; 5 years.

Claim.—A journal and bearing protector constructed substantially as shown and described, and consisting of the collar C made in two parts, with interior-grooved ribs *c* and dust chambers J, and provided with an outwardly-projecting flange D and rearwardly-projecting lugs E, the collar G having inwardly-projecting flange H, and the double collar K L M, as set forth.

No. 18,073. Eave-Gutter Forming Machine.

(*Machine à former les gouttières.*)

Alexander M. Rusland, Little Britain, Ont., 14th November, 1883; 5 years.

Claim.—1st. A bed plate having ends carrying adjustable journal blocks in which are centred a jaw plate resting at the front edge upon springs placed near the ends of the bed, a lever plate journalled to hang vertically at the front edge of the bed and provided with a roll at the upper edge, eccentric clamping being pivoted to the frame ends over the jaw plate and the latter provided with a seat for a matrix. 2nd. The combination of the bed A, the ends C provided with seats *c* c^1, and journal blocks C^2 and set screws C^1, a jaw plate D journalled in the rear blocks, and a lever plate G journalled in the front blocks free to swing down. 3rd. The combination of the ends C having pivoted thereto the eccentric ends of the clamping lever F, to work upon the upper surface of the jaw plate D or upon facings d^1 provided thereon. 4th. The combination of the jaw plate D, springs E seated in the bed plate A, and the clamping levers F pivoted to the ends. 5th. The combination of the lever plate G journalled in adjustable journal boxes at the ends of the bed plate to swing down, and having a roll or round *g*. 6th. The combination of the jaw plate D recessed to receive the matrix I, all substantially as and for the purpose set forth.

No. 18,074. Spinning Spindle and Bearing.

(*Fuseau et coussinet de rouet*)

Albert R. Sherman, Pawtucket, R. I., U. S., 14th November, 1883; 5 years.

Claim.—1st. The combination, with the bolster case having a closed bottom, of the bolster having a step for the spindle and fitted loosely in the bolster case peripherally throughout its whole length, whereby an oil cushion is formed between the interior of the bolster case and the interior of the bolster throughout its length, and the bolster is left free to vibrate as a whole against said oil cushion laterally in all directions, substantially as described and for the purpose set forth. 2nd. The combination of a bolster case having a closed bottom, a bolster having a step for the spindle and fitted loosely within the bolster case throughout its length for free lateral motion as a whole, and means for positively restraining the bolster from turning, substantially as and for the purpose described. 3rd. The combination of a sleeve whirl spindle, a bolster case having a closed bottom, a bolster fitted loosely within the bolster case throughout its entire length, whereby it is made capable of motion in a lateral direction as a whole, and means for positively restraining the bolster from turning, substantially as and for the purpose described. 4th. The combination, with the bolster case having a closed bottom, of the bolster having a lip or flange *a*, Fig. 1, at its top, for suspending it in the bolster and fitting loosely throughout its length in the case, to form an oil cushion, substantially as and for the purpose set forth. 5th. The combination, with the bolster case B^1, Figs. 3 and 4, having annular shoulder *c*, and oil chamber *f*, and the spindle with its whirl of the bolster A^1 having holes a^1, rigid collar b^1, step bearing d^1 and grooved passage way g^1, substantially as shown and described. 6th. A spinning spindle bolster, as shown in Figs. 3 and 4, provided at bottom with a step bearing, and near its upper end with a cylindrical enlargement (whose central point is opposite the pull of the band) and loosely fitting a corresponding recess in the bolster case, whereby the spindle through the medium of its bolster is suspended in the case and allowed a lateral movement, or cushioned on a thin film of oil, substantially as described. 7th. The combination, with the bolster case, the spindle and the bolster having a loose peripheral fitting in the plane of the whirl, of an inflexible supporting pin B^2 or its equivalent, as shown in Figs. 5 and 10, supported at its lower end in the bolster case and abutting loosely against and sustaining the bolster at its upper end, and having at said end a free lateral movement, substantially as and for the purpose described. 8th. The combination of the bolster A^2 having notch a^2, the bolster case and the cap D^2, Figs. 5, 7, 8, having tongue or key *b*, the said cap being fitted with a frictional contact upon the bolster case with its tongue b^2 projecting into the slot a^2, to prevent the bolster from turning, as described. 9th. The combination, with the bolster and bolster case, both made in tubular form, as shown in Fig. 11, of a reenforcing ring upon the exterior upper portion of the case, constructed as described, to lock the bolster and its case together, to prevent the bolster from turning, substantially as described. 10th. The cap C^3, Figs. 14 and 15, having a perforation in its centre and an indentation in its side to form projection b^3, in combination with the bolster case having a slot to give passage to said projection, and the bolster having a recess to receive said projection to lock the bolster against turning, substantially as described. 11th. The combination, with the bolster case having an oil reservoir, and the spindle having a sleeve whirl, with a flange at its lower edge, of an outer covering or shell D^3 extended above the oil reservoir and around the exterior of the flange on said sleeve whirl, as and for the purpose described. 12th. The combination, with the bolster case having an oil reservoir, and the spindle having a sleeve whirl with a flange at the bottom, of the shell extended above the oil reservoir and around the exterior of the flange on said sleeve whirl, and the washer or cover E^3 encircling said shell and resting above the oil reservoir, substantially as shown and described.

No. 18,075. Improvements in Grain Binders.

(*Perfectionnements aux engerbeuses.*)

Robert Brown, Springfield, Ohio, U.S., 14th November, 1883; 5 years.

Claim.—1st. The combination of the crank C^1 and link mechanism *b* b^1 c^1 and *c*, with the packer fingers C suspended upon the frame over the binding table, for pressing the grain into the binding receptacle, substantially as described. 2nd. The combination of the crank C^1 and link mechanism *b* b^1 c^1 and *c*, with the packer fingers C and the series of the revolving racking fingers arranged in front of, and above the packer fingers, substantially as described. 3rd. In a cord knotter, the combination of a slotted stationary knotting bill-shaped jaw upon whose shank the loop is formed, with a reciprocating jaw working in the slot of said bill-shaped jaw and operating to seize the ends and to push the loops from the bill-shaped jaw over the ends, substantially as set forth. 4th. The combination, with the stationary jaw K for receiving the loop, and reciprocating jaw N^1 for seizing the ends and shedding the loop, the hook Q revolving around both the stationary and reciprocating jaws and operating to catch hold and wind the twine, substantially as set forth. 5th. In a grain binder, the twine cutting and holding mechanism composed essentially of the reciprocating bar K^{11} and knife M, the spring jaw l^1 and the guard *m*, substantially as set forth. 6th. In a grain binder, the binder arm journaled loosely upon the shaft which carries the compressor and ejector fingers, combined with and operated by means of a secondary shaft *n* and the crank and link connections, substantially as set forth. 7th. In a grain binder, the compressor fingers F adjustably connected to the ejector F^1 by means of the serrated faces *f* f^1, said parts being united as described and carried by one shaft, substantially as set forth.

No. 18,076. Apparatus for Operating Self-Flushing Closets. (*Appareil pour faire fonctionner les cabinets automatiques.*)

Thomas Prosser, George E. Drummond and James T. McCall, Montreal, Que., 14th November, 1883; 5 years.

Claim.—1st. In an apparatus for operating self-flushing closets, the combination of a cistern or reservoir normally dry, with inlet and outlet valves controlled by a pivoted weighted lever, fulcrumed in bearings above the water level of the cistern, and connected by a rod with the rear of the seat, the whole operated automatically by pressure on such seat to admit water to the closet, all as set forth and for the purposes described. 2nd. The combination, with the normally dry cistern A, of a pivoted weighted lever connected by a rod with the rear of the seat and operated by pressure thereon, and a slotted link pivoted to the lever and carrying a stopper for the outlet and serving to raise a ball cock regulating the supply, whereby the inlet is held closed when the stopper is lifted, and the inlet shall be opened when the outlet is closed and the exact quantity of water to be discharged automatically gauged, all as herein set forth,

No. 18,077. Improvements in Car-Couplings.

(*Perfectionnements aux accouplages des chars.*)

Edwin Ingram, Philadelphia, Penn., (assignee of G. W. Cross, Gardiner, Me.,) U.S., 14th November, 1883; 5 years.

Claim.—1st. In a car-coupling device, the combination, with a draw-bar having a link-retaining lug, of a link pivoted to the draw-bar, and a pivoted bracket or lever in rear of the link adapted to project the link beyond its point of support by the impact of an opposing draw-bar, substantially as set forth. 2nd. The combination, with the link having means of pivoting at one end to the draw-bar, of a pivoted bracket in rear of the link, and a rod connected with the lower end of such bracket and adapted to be struck by an opposing draw-bar to discharge the link, substantially as set forth. 3rd. The pivoted bracket, in rear of the link, having doubly-curved arms of such shape and dimensions as to uphold the link in rear of its point of support, as set forth.

No. 18,078. Improvement in Churns.

(*Perfectionnement dans les barattes.*)

Maurice P. Hays, (assignee of H. Hays,) Bridgeport, Cal., U.S., 14th November, 1883; 5 years.

Claim—1st. The combination, with the cream box A constructed substantially as described, and provided with pintle B, of the threaded pintle F provided with nut J for securing the cover E, journal-shaft L provided with threaded end aperture K adapted to receive the said pintle F, groove L^1, latch M and means for operating the cream-box, substantially as set forth. 2nd. The combination, with the cream-box A, of the cover E, the clips H, the cross-piece G, the threaded pintle F, the winged nut J and the journaled shaft L provided with a threaded end aperture K, substantially as shown and described and for the purpose set forth. 3rd. The combination, with the journaled serrated cream-box A, the standards C C^1 and the base D provided with longitudinal grooves Q having the ends bevelled, of the supporting frame P having bevelled tenons P^1 sliding in the grooves Q, substantially as shown and described and for the purpose set forth.

No. 18,079. Improvements in Knitting Machines. (*Perfectionnements dans les machines à tricoter.*)

Isaac W. Lamb, Parshallville, Mich., U. S., 14th November, 1883; 5 years.

Claim.—1st. The combination, with a needle bed having grooves and apertures d^1 in the partitions between the grooves, of the oscillatory shifters *l* and the grooved pieces *g* arranged in said apertures d^1, as and for the purpose specified. 2nd. The combination of the plate *c* provided with the slat c^1 for receiving the jack, and the plates *b* and *d*, one on either side of the plate *c* for retaining the jack within the slot c^1, with the removable jack *f*, substantially as explained. 3rd. A needle bed section consisting of the plates *b c d* and spacing pieces *e h*, said parts arranged with relation to one another, as described. 4th. The combination, with the needle bed sections *a* comprising the pieces *b c d e h*, of the rods *i* passing through said pieces and provided with end nuts, whereby the sections and the parts of each section are detachably held together, as described. 5th. The combination of the bent wire springs *o* with the slotted bed and with the needle shifters, each provided with a lug *h*, whereby the

needle shifters are retained within their grooves when in use and provision is made for their ready removal when desired, substantially as explained. 6th. The combination of the spring *o*, needle shifter *l*, latch *m* and notched bed sections *a*, for securing the automatic locking of the needle shifter, substantially as and for the purpose described. 7th. The links and wires *q* combined with the oscillating needle shifters *l*, pivoted latches *m* and bed sections *a*, substantially as explained. 8th. A needle-bed section consisting of the plates *b* and *c*, the latter having slots c_1, plate *d* provided with aperture d_1, and spacing pieces *e h*, in combination with the jack *f* arranged in slot c_1, and switch *g* arranged in the aperture d_1, as shown and described. 9th. The combination, with the plate *d* provided with the aperture d_1, formed as shown, of the grooved piece *g* having a rounded lug g_1, upon which it is adapted to turn in the said aperture d_1, as and for the purpose specified. 10th. The combination, with the plate *c* provided with the slot c_1, of the jack *f* arranged in said slot, as and for the purpose specified. 11th. The combination of the oscillating shifters *l* and the spaced needle-bed sections *a* having plates *d* provided with apertures d_1, with the flanged pieces *p*, whereby the needles are supported by the shifters and held beneath the flanges of the pieces *g*, for the purpose specified. 12th. The combination of the stationary end pieces A of the bed frame, with the movable needle plates B in such a manner that the needle plates may be moved from or toward each other, for the purpose specified. 13th. The combination of the stationary end pieces A of the bed frame, with the movable needle plates B, such needle plates having attached to them, so as to move with them the jacks *f* in such a manner that the needle plates and their accompanying jacks may be moved together, act from and in toward each other, for the purpose specified. 14th. The combination of the shaft S provided with any convenient device for operating the same, the gears or segments R_1 or their mechanical equivalents, and the racks *x*, one at each end of such needle plate, with one movable needle plate, whereby both ends of such needle plate are simultaneously moved out or in, for the purpose specified. 15th. The combination of the shaft S provided with any convenient device for operating the same, the gears R_1 attached to such shaft, and pivoted gears and the racks *x*, with the two movable needle plates, whereby both needle plates are moved out or in simultaneously, for the purposes specified. 16th. The combination of the lever L, shaft S, gears R_1, or their mechanical equivalents, with the racks *x* and needle plate B on the back side of the machine, for the purpose specified. 17th. The combination of the lever L, the spring lever *v*, the pin v_1 and the end piece A of the bed frame, provided with a suitable hole or projection v_{11}, for engaging the pin v_1, with the shaft S, gear R_1, racks *x* and one needle plate, whereby the said needle may be moved out and in, and secured in its inner position, as and for the purpose specified. 18th. The combination of the levers L and *v*, the pin v_1, the end A of the bed frame provided with a suitable hole or projection v_{11} for engaging the pin v_1, with the shaft S, gears R_1, pivoted gears R, racks *x* and the two needle plates, whereby both needle plates may be simultaneously moved apart from or toward each other and securely locked in their inner positions, as and for the purpose specified. 19th. The combination of the spacing piece *e* provided with projections e_1, with the bed section *a* having an aperture e_{11} adapted to receive the projections e_1 of said spacing piece, as and for the purpose specified. 20th. In combination, with the movable needle plate B and needles *p* on the back side of the machine, the bar Z for arresting the outward movement of the needles when the needle plate is moved outward, as and for the purpose specified. 21st. In combination with the two movable needle plates B B and the needles *p*, the bars Z Z for arresting the outward movement of the needles when the needle plates are moved apart, as and for the purpose specified. 22nd. The combination of the oscillating shaft S and the movable needle plate B connected by any suitable mechanical device that shall cause them to move together with the needles *p* and the bar Z, as and for the purpose specified. 23rd. The combination of the oscillating shaft S, the gears R_1, the racks *x* and needle plate B, with the needles *p* and the bar Z, as and for the purpose specified. 24th. The combination of the bearings *y* formed on the ends A of the bed frame, and the needle plate B sliding on such bearings, with the bars C passing over the needle plate to return the same in place upon their bearings. 25th. A bed section composed of the pieces *b c* and *d* rivetted together and having holes 2 3 in one of the pieces of size to fit the rods *i i*, while the corresponding holes in the other two pieces are made larger than the rods, substantially as and for the purpose specified. 26th. The combination of the plate p_1 with the needles *p*, oscillating shifters *l* and bearings *j*, as and for the purpose specified. 27th. The combination of the sections provided with apertures 6 with the plate p_1 and needles *p*, for retaining the needles in their places. 28th. The combination of the bed sections provided with apertures 6 and the plate p_1, with the needles *p*, oscillating shifters *l* and bearing s *j* as and for the purpose explained. 29th. The manner of providing bearings *j* for the shifters by making holes 1 through the bed sections, and inserting a rod through such holes. 30th. The combination of the springs o_1 and the oscillating shifters *l* provided with lugs l_1 and projections *r*, with the rod r_1, for locking the shifters. 31st. The combination of the springs o_1 and the oscillating shifters *l* provided with lugs l_1 with the rods r_2 as and for the purpose explained.

No. 18,080. Improvements in Gun Cleaners.

(*Perfectionnemente aux nettoyeurs des fusils.*)

James F. Davis, Fall River, Mass., U. S., 16th November, 1883; 5 years.

Claim.—In a gun cleaner, the disks E_1 E_1 and the expansible swabs E F held between said disks, in combination with the perforated cylinder C having at one end a fixed head I, and at the other end a screw-thread *x*, together with the sleeve A engaging with said cylinder C by means of the slot *b* and pin *c*, and having perforations *e e* to discharge the cleansing fluid from the duct *a* between said swabs E E, substantially as and for the purpose specified.

No. 18,081. Platform Waggon Spring.

(*Ressort de char plateforme.*)

James H. Grogan, Rome, N. Y., U. S., 15th November, 1883; 5 years.

Claim.—1st. The combination, with the hounds formed with an elevated central portion, cross-bars *a* a_1 and central stay D, of the cross bar E, mounted on the stay D with a rocker bearing *b*, the fifth wheel attached to the extremities of the bar E, and the rollers C C mounted on the cross-bars *a* a_1, substantially in the manner described and shown. 2nd. The combination of the hounds A arched as shown, the cross-bars *a* a_1 mounted on top of the hounds equidistant from the centre of the fifth wheel, and the straining rod *r* extended straight from end to end of and in range with the hounds, substantially in the manner shown. 3rd. The combination, with the side springs F and the hounds A, of the hanger *e* connected with the hounds by a laterally swinging joint, substantially as described and shown for the purpose set forth.

No. 18,082. Improvements in Piston Packings.

(*Perfectionnements aux garnitures des pistons.*)

Thomas Roberts, Baltimore, Md., (assignee of William W. St. John, St. Louis, Mo.,) U.S., 15th November, 1883; 5 years.

Claim.—1st. In a piston, a packing-ring of angular shape, having the vertical part made of greater depth than the annular flange and having a groove in its side in which a packing piece with tongue fits, substantially as specified. 2nd. In a piston, a packing ring of angular shape having part d_1 of greater depth than flange d_{11}, and a groove *d*, in combination with a packing piece E provided with tongue *e* and projection or pin *f*, as shown and for the purpose set forth. 3rd. In a piston, the combination of a packing ring of angular shape having the vertical parts d_1 made deeper than the annular flange d_{11} and provided with a groove *d*, with a packing piece E having a tongue *e* and projections *f* fitting into the cut *b* b_1, substantially as described. 4th. A piston consisting of the head A, bulb ring B, packing ring C, packing rings D D_1 having groove *d* and part d_1 made deeper than flange d_{11}, and cut *b* b_1, in combination with the packing piece E provided with tongue *e* and projection or pin *f*, substantially as specified.

No. 18,083. Regulator for Engine Governors.

(*Régulateur des gouverneurs de machines.*)

James Williams, High Lane near Stockport, Eng., 15th November, 1883; 15 years.

Claim.—1st. The combination, substantially as specified, of an engine governor, governor-connections transmitting motion to a throttle valve or cut-off, a device for regulating the longitudinal movement of said connections, means, substantially as described, for transmitting rotary motion under the control of said governor to said regulating device, and a device, substantially as described, for varying said rotary motion to suit the requirements of the engine, for the purpose set forth. 2nd. The combination, substantially as specified, of an engine governor, governor-connections transmitting motion to a throttle valve or cut-off, a device for regulating the longitudinal movement of said connections, means, substantially as described, for transmitting rotary motion from the spindle of said governor to said regulating device, and a change-gear device for varying said rotary motion to suit the requirements of the engine, in the manner set forth. for the object stated. 3rd. The combination, substantially as specified, of a main governor-connections transmitting motion therefrom to a throttle-valve or cut-off, a device for regulating the longitudinal movement of said connections, a supplemental governor provided with means, substantially as described, for transmitting automatically-controlled rotary motion to said regulating device, and a change gear device for varying said rotary motion to suit the requirements of the engine, for regulating the speed of an engine, in the manner set forth.

No. 18,084. Machine for Driving Posts.

(*Machine à chasser les pieux.*)

Malcolm Black, Appin, Ont., 15th November, 1883; 5 years.

Claim.—1st. A portable machine for driving posts consisting of standards A A hinged to body of frame C, provided with runners D, and in combination therewith, the weighted driving block E and clutch H operated by rope or chain J, substantially as shown and specified. 2nd. In combination with the standards A A hinged at B to body C, the adjustable side braces N N hinged at C and provided with holes or notches *d*, to receive pins *e* passing into sides of standards, so as to regulate the angle of said standards to the body C, substantially as shown and specified. 3rd. The combination with the body C, the short standards O O having holes or notches *f*, to regulate by pins *g* the elevation at either side of the machine, substantially as specified.

No. 18,085. Improvements in Guage Cocks.

(*Perfectionnements aux robinets-jauges.*)

Donald F. Tousey and Isaac J. Wentworth, Minneapolis, Minn., U.S., 15th November, 1883; 5 years.

Claim.—1st. In a guage cock, a hollow tubular plunger having perforations in its boiler end and a collar thereon, said collar being adapted to work within a chamber in communication with the inner side of the boiler, the diameter of the chamber being larger than the circumference of the collar, whereby an annular space is formed for the admission of steam to the perforations in the plunger, when said plunger is pressed in, the outer end of the plunger being provided with inner threads, in combination with an outside threaded tube and nozzle, the tube engaging the plunger by means of the thread, said tube being provided with a circumferential flange or collar to prevent the nozzle being driven against the outer face of the packing nut, substantially as described and for the purposes specified. 2nd. A nozzle and plunger formed separately and united by screw threads, the plunger having perforations adapted to communicate with the steam in the plug chamber, said plunger nozzle and connecting means being hollow and communicating from the mouth of the nozzle to a point near the inner collar, substantially as described and for the purposes

specified. 3rd. The combination of the hollow plunger E having perforations O and collar G, the chamber plug A, ring C and nut D, the collar G moving freely in the chamber and admitting steam around its sides to the openings O, when said collar is moved forward in the chamber, substantially as set forth and specified.

No. 18,086. Improvements in Roller Mills.

(*Perfectionnements aux laminoirs.*)

Henry J. Gilbert, Racine, Wis., U. S., 15th November, 1883; 5 years.

Claim.—1st. In a roller mill, the combination of fan-blowers D located above the mill and between two series of rolls B, with the said rolls and sieves, and with hoppers E, slotted pipes C and pipes C1, each communicating with the fan-blower D and one of the slotted pipes C1. 2nd. The pipes C slotted, as shown, and terminating in hopper E having deflectors *e* and *c* and projections *d*, substantially as set forth. 3rd. The combination of fan-blower D with the sieves and rolls, the pipes C having gates *b*, and the pipes C, as set forth. 4th. The swinging bearing arms, in combination with shafts K, eccentrics, eyebolts and yielding connections. 5th. The combination of the swinging arms, shaft K, eccentrics, eyebolts, arms M and rods N, as set forth.

No. 18,087. Improvements in Hose-Couplings. (*Perfectionnements aux joints des boyaux.*)

John B. Génin, Worcester, Mass., U. S., 15th November, 1883; 5 years.

Claim.—1st. A hose-coupling consisting of the hose collars C into which are screwed the nozzles N N1, the faces of the nozzles formed respectively male and female by an internal semi-circular dovetail cone *f1*, receiving the male reverse cone F, in combination with a collar nut K screwed upon the male nozzle N1 and provided with an internal conical face *k2* ground upon the external cone face *f*, to form a neater tight joint. 2nd. In hose-couplings, the compound conical face joint consisting of the semi-circular rim *f1* dovetailed internally to receive a reverse dovetail F, held together and tightened by a collar nut K screwed upon the nozzle N1, and provided with internal conical face *k2* ground upon the conical face *f*, all substantially as described and for the purpose set forth.

No. 18,088. Measure for Shoemakers.

(*Mesure pour les cordonniers.*)

Charles Schaefer, Toledo, Ohio, U.S., 15th November, 1883; 5 years.

Claim—1st. In a measure for boots and shoes, the toe gauge consisting of the vertical graduated standard E, rising from the base E1 and provided with the vertical recess *b* and the spring *d*, and the slide F, constructed, combined and operating substantially as and for the purposes set forth. 2nd. In a measure for boots and shoes, the heel-piece D having the metal-lined inner concave face *a*, in combination with the vertical scale H extending to the calf of the person to be measured, and the tape I1 in the slide I provided with the set screw I2, constructed and operating, substantially as and for the purposes set forth. 3rd. In a measure for boots and shoes, the combination of the base C having the slot C1 and the scales of sizes and inches located as described, the toe-gauge consisting of the vertical graduated standard E, spring *d*, recess *b*, sliding plate F and set screw G, the heel piece D *a*, scale H and slide I, tape I1 and set screw I2, all constructed and operating, substantially as and for the purposes set forth. 4th. In a measure for boots and shoes, as described and specified, the combination of a graduated last K, the scale on which corresponds to the scale over the base C, by means of which the last may be fitted to correspond to the measures taken from the foot, all substantially as and for the purpose specified.

No. 18,089. Improvements in Dust-Pans.

(*Perfectionnements aux porte-ordures.*)

Annie M. H. Moss, Monroe, Ct., U. S., 15th November, 1883; 5 years.

Claim.—1st. A dust-pan provided with a toe socket for insertion of the toe portion of the shoe of the sweeper, whereby the pan may be held by the foot of the person using it while sweeping, substantially as specified. 2nd. The combination, with the body A of the pan and its handle B, of a toe socket C attached to, or forming a part of said handle, substantially as and for the purpose set forth. 3rd. The combination, with the handle B of the pan having a toe socket C, of the upper socket *b* arranged to receive a supplemental handle D, substantially as and for the purpose specified.

No. 18,090. Electro-Telegraphic Printing Instrument. (*Instrument électro-télégraphique imprimant.*)

Henry Van Hoevenbergh, Elizabeth, N. J., U. S., 15th November, 1883; 5 years.

Claim.—1st. The combination, substantially as set forth, of two series of keys, mechanism operated by the depression of any key in one series to prolong the duration of the current traversing the line at the instant of operation, irrespective of the polarity of said current, and mechanism operated by the depression of any key in the other series for withdrawing whatever current is then traversing the line. 2nd. The combination, substantially as set forth, of the revolving shaft of a transmitting instrument, a pole-changer carried thereby for intermittently reversing the current upon the main line, a series of keys for arresting the motion of said transmitting shaft at predetermined points in its revolution, thereby prolonging the particular current pulsation traversing the line at the instant of arrest, and a second series of keys for arresting said shaft at other predetermined points and simultaneously opening said main line. 3rd. The combination, substantially as set forth, of a system of circuits conveying an electrical current, a pole-changer for intermittently reversing said current, a series of keys, each serving when operated to arrest the action of said pole-changer, thereby instituting a continuous current in said circuit, and a second series of keys, each serving when operated to withdraw said current by interrupting said system of circuits. 4th. The combination, substantially as set forth, of a revolving shaft, an arm or cam projecting laterally from said revolving shaft, a system of contact-points carried by said arm, a battery, the circuit of which is completed by the contact of said points, and a series of keys for simultaneously arresting the motion of said arm and separating said contact points, for the purpose of interrupting the circuit of said battery. 5th. The combination, with a type-wheel shaft, a type-wheel normally moving therewith and mechanism for advancing said type-wheel shaft through successive arcs, each subtending two characters upon the circumference of said type-wheel, of a device for mechanically imparting a supplementary movement to said type-wheel independent of the movements of said shaft, substantially in the manner described. 6th. The combination of a shaft, a sleeve movable thereupon, a type-wheel rigidly carried by said sleeve, a bevelled toothed wheel also rigidly carried by said sleeve, and yielding mechanism, substantially as described, whereby the movements of said shaft are communicated to said type-wheel while permitting the movement of said type-wheel independently of said shaft through an arc subtending a single character. 7th. The combination, with a type-wheel and bevelled toothed wheel connected together and flexibly mounted upon a shaft, substantially in the manner described, of a printing lever, a subsidiary lever articulating with said printing lever and moving therewith, an armature lever articulating with said subsidiary lever, and an electro-magnet actuating said armature lever to move said subsidiary lever into the plane of said bevelled toothed wheel. 8th. The combination, substantially as set forth, of a type-wheel normally advancing the distance equivalent to two characters at a time, a printing mechanism capable of producing the impression of one character at a time, a device for still further advancing the type-wheel through a distance equivalent to one character, and a relay vitalized by currents traversing the main line for setting in action said printing device, together with said device for still advancing the type-wheel. 9th. The combination, substantially as set forth, of a relay, two local circuits respectively closed by said relay upon its back and front stops, an electro-magnet for actuating a printing mechanism included in one of said circuits, and an electro-magnet acting through intermediate mechanism to advance said type-wheel through a definite arc included together with said printing magnet in the other circuit. 10th. The combination, substantially as set forth, of a relay armature lever making both long and short contacts upon each of the limiting stops between which it plays, and two local circuits closed upon said stops, one including the printing electro-magnet and the other including said printing electro-magnet and an electro-magnet for mechanically advancing the type-wheel, the armatures of both of said magnets being adjusted to respond to the said long contacts only. 11th. The combination, substantially as set forth, of mechanism operated by the depression of alternate transmitter keys for arresting an advancing type-wheel shaft in such position that the type-wheel carried thereby presents for impression the character next in advance of that represented by the key, depressed mechanism for still further advancing said type-wheel independently of said shaft, for the purpose of bringing the particular character represented by the key depressed into printing position and printing mechanism. 12th. The combination, substantially as set forth, of the following elements actuated by electrical currents and controlled by the depression of alternate transmitter keys, namely: mechanism for advancing the type-wheel to a position such that the character to be printed is in the neighbourhood of the printing mechanism, mechanism for still further advancing said type-wheel independently of its shaft, for the purpose of bringing said character into exact position for printing and printing mechanism.

No. 18,091. Improvements in Swivel Hooks.

(*Perfectionnements aux crochets à émerillon.*)

Timothy Gingras and George W. Leirmann, Buffalo, N. Y., U. S., 15th November, 1883; 5 years.

Claim.—1st. In a boat-detaching, etc., hook, the combination, with an O-shaped frame having in its lower part the indents E, of a pivoted hook F provided with a counter-weight H, said hook being pivoted between the parallel members A1 A11 of said frame, and constructed to operate in conjunction with the said indentations E in said frame, substantially in the manner and for the object stated. 2nd. The improvement in detaching hooks, substantially as described, consisting essentially in the combination with an O-shaped frame having in its lower parts semi-circular indents E, of a hook F having on one end the curved part or hook proper forming, in conjunction with said semi-circular indents E, a substantially circular aperture for the reception of a ring, etc., and on its opposite end a counter-weight H, said curved part *g* being provided with an aperture *f* for the reception of a locking pin *f1*, and the whole constructed for operation, substantially in the manner as and for the purposes specified.

No. 18,092. Cheese Making Apparatus.

(*Appareil de fabrication du fromage.*)

Scott Jenks, Cheshire, Mass., Charles Millar and Henry W. Millar, Utica, N.Y., U.S., 15th November, 1883; 5 years.

Claim.—1st. In an apparatus for preparing, cutting, or agitating curd in the art of making cheese, the combination of a vertical rod or shaft carrying, at its lower portion, a depending agitator or cutter for agitating or cutting the curd, with means for supporting and reciprocating the rod or shaft in a longitudinal plane, and means for rotating the shaft and thereby imparting to the agitator or cutter, a rotary motion in a horizontal plane, about the vertical rod or shaft, as the latter is reciprocated, substantially as described. 2nd. An apparatus for preparing, cutting or agitating curd in the art of making cheese combining, in its structure, a vertical suspension rod or shaft provided at its lower end with a carrier, a curd cutter or agitator suspended from the carrier and adapted to be immersed in the curd contained in a vat, and mechanism for reciprocating the carrier longitudinally and at the same time imparting thereto, a rotating movement in a horizontal plane, about the suspension rod or shaft,

substantially as described. 3rd. The combination, in an apparatus for preparing, cutting or agitating curd in cheese making, of a carrier for the agitators or curd knives with an endless screw, which causes a reciprocating movement on the part of the carrier, and a rack and pinion which imparts a rotary movement to the carrier shaft and the carrier simultaneously with its reciprocating movement, as set forth. 4th. The combination, in an apparatus for preparing, cutting or agitating curd in cheese making, of a rotary carrier for the agitators or the curd cutters with a carriage which supports the carrier shaft, an endless screw for propelling the said carriage, and a rack which is engaged by a pinion upon the carrier shaft for imparting a rotary motion to the carrier, substantially as described. 5th. The combination, in an apparatus for preparing, cutting or agitating curd in cheese making, of a rotary carrier for the agitators or the curd knives, with an endless screw or its equivalent, which propels a carriage from which the carrier is suspended, means, substantially as described, for imparting to the carrier, a rotary motion, and a belt shifter which is acted upon by the carriage at both terminals of its lines of travel, so as to automatically reverse the motion of the screw and thereby cause a reciprocating movement on the part of the carriage and a reverse revolution of the carrier, as set forth. 6th. In an apparatus for preparing, cutting or agitating curd in cheese making, one or more bars or supports by which the curd cutters or agitators are carried, said bar or bars being mounted in a rotary carrier B, in combination with springs P, or their equivalent, substantially as described. 7th. The combination, in an apparatus for preparing, cutting or agitating curd, of cutters or agitators mounted on travelling and rotary carrier, with mechanism for automatically reversing the movement and the rotation of said cutters or agitators, as the carrier arrives at each end of the vat, substantially as described.

No. 18,093. Cheese Making Apparatus.

(Appareil de fabrication du fromage.)

Scott Jenks, Cheshire, Mass., Henry W. Millar and Charles Millar, Utica, N.Y., U.S., 15th November, 1883; 5 years.

Claim.—1st. In an apparatus for cutting and agitating curd in the art of making cheese, a series of suspension rotary shafts carrying cutters or agitators, combined with a single actuating power shaft and with means, substantially as described, for imparting to each cutter shaft a rotary motion, and to said cutter shaft a reciprocating motion, substantially as shown in sheets 1 and 2 of the drawings. 2nd. In an apparatus for cutting and agitating curd in the art of making cheese, a series of suspension rotary shafts carrying cutters or agitators combined with a single actuating power shaft and with means, substantially as described, for imparting to each cutter shaft a rotary motion, and to said cutter shafts a reciprocating motion simultaneously in the same direction, substantially as shown in Figures 1 and 3 of the drawings. 3rd. In an apparatus for cutting and agitating curd in the manufacture of cheese, and in combination with a series of pans or vats arranged substantially as shown, a series of rack bars, a corresponding number of suspension rotary shafts carrying cutters or agitators, and each shaft carrying a pinion adapted to engage and traverse its appropriate rack-bar, carriages supporting said rotating shafts, rigid connections between such carriages and a single actuating power shaft, substantially as shown in figures 1, 2, 3, 4, 5 and 6 of the drawings. 4th. In the art of cheese making, a series of revolving suspension shafts carrying cutters or agitators adapted to traverse and revolve in a series of vats, in combination with a single actuating power shaft, means for connecting the suspension shafts therewith and means for securing or removing one or more of the cutters at will, substantially as shown in figures 1, 2, 3, 4, 8 and 9 of the drawings. 5th. In a cheese making apparatus and in combination with a rotary shaft carrying a cutter or agitator and having a bevelled gear with cylindrical portion, a longitudinally grooved power shaft, a feathered bevelled gear operating loosely thereon, a traversing carriage for holding the gears in mesh with each other, and the gear on the rotary shaft in mesh with a longitudinal rack bar, substantially as shown in figures 1, 2, 3, 4, 5 and 6 of the drawings. 6th. In a cheese making apparatus and in combination with a series of suspension rotary shafts carrying cutters or agitators and connections therefrom with a central carriage, a power shaft having a longitudinal groove, a feathered bevelled gear revolving with and loosely traversing said power shaft, a gear wheel having a bevel and a cylindrical gear surface, and a longitudinal rack-bar, substantially as shown in figures 1, 2, 3, 4, 5 and 6 of the drawings. 7th. The shaft C made in sections and having inclined joint C^2, the perforated ears c^1, box c^4, hooks c^6, pins c^7, bolt c^2 c^3 c^8, and spring c^5, substantially as shown in figures 8 and 9 of the drawings. 8th. The power shaft I, having longitudinal groove *i*, the carriages D and D^1, the loose bevel gear J, the gear C^1, the rotary shaft C and connections combined substantially as shown in figures 1, 2, 3, 4, 5 and 6 of the drawings. 9th. In combination with a series of rotating suspension bars carrying cutters or agitators B *b* and pinions C^1, the rack-bars R, carriages D and D^1, and the bevel gears journaled therein, the gear J having internal lug, and the power shaft I, having longitudinal groove *i*, substantially as shown in figures 1, 2, 3, 4, 5 and 6 of the drawings. 10th. In an apparatus for cutting or agitating curd in the art of making cheese, a revolving cutter hung upon a vertical rod or shaft, combined with a continuous rack and with means for supporting and moving the said cutter in a continuous traverse in a milk holding vat, substantially as shown in figures 10, 11, 12 and 13 of the drawings. 11th. In an apparatus for cutting or agitating curd in the art of making cheese, the combination of a milk holding vat and a vertical shaft carrying at its lower end, a depending cutter or agitator with a frame arranged above the vat and supporting the upper end of the vertical shaft, mechanism for moving the latter in a continuous traverse, and means for rotating the shaft in a vertical plane and imparting to the cutter or agitator, a rotary motion in a horizontal plane about the vertical shaft, substantially as shown in figures 10, 11, 12 and 13 of the drawings. 12th. An apparatus for cutting or agitating curd, in the art of making cheese, combining in its structure a vertical shaft, an elevated frame supporting the upper end of the shaft, a cutter or agitator depending from the lower end of the shaft, and mechanism for moving the vertical shaft in a continuous traverse and imparting to it a rotary motion in a vertical plane, and thereby rotating the cutter or agitator in a horizontal plane about the vertical shaft, substantially as shown in figure s10, 11, 12 and 13 of the drawings. 13th. The combination, with a vat in an apparatus for preparing, cutting or agitating curd in cheese making, of a vertical shaft carrying the cutters or agitators, and a pinion which is held in mesh with a continuous rack, with means for moving said pinion upon such rack in a continuous traverse and thereby imparting a rotary motion to the said cutters or agitators, substantially as shown in figures 10, 11, 12 and 13 of the drawing. 14th. In an apparatus for cutting or agitating curd in cheese making, the combination of a vat and a vertical shaft or arm carrying the cutting or agitating devices and a rigid pinion, a continuous rack with which said pinion is held in mesh, and means, substantially as described, for simultaneously imparting motion to said pinion and cutters, whereby the cutters are made to rotate in a horizontal plane, and the vertical shaft to traverse the line of the continuous rack, substantially as shown in Figs. 10, 11, 12 and 13 of the drawings. 15th. In combination with the vertical shaft cutters or agitators and pinion, the continuous rack B, the pivoted jointed arms N O, and means for imparting motion to said shaft, substantially as shown in figures 12 and 13 of the drawings. 16th. In a machine, substantially as described, the arms N O and shaft M combined with the power shaft *i*, the rotary shaft D^1, the pulleys J K L, belts J^1 K^2, the continuous rack B, pinion D and cutters, substantially as shown in figures 12 and 13 of the drawings.

No. 18,094. Means for Protecting Milk from Contact with Foreign Matters while in Transit from the Teat of the Animal to a Closed Vessel.

(Moyens de protéger le lait du contact des matières étrangères en passant du trayon de l'animal à un vase fermé.)

Hervey D. Thatcher and Harvey P. Barnhart, Potsdam, N. Y., U. S., 17th Novomber, 1883; 5 years.

Claim.—1st. That improvement in means for hand-milking which consists of the combination, with a milking-tube provided at one end with a flexible sheath, adapted to closely embrace the teat of the animal yielding the milk, of a closed vessel having an orifice provided with a perforated elastic diaphragm through which the reverse end of the tube freely slides, whereby the flowing milk is isolated from contact with all foreign matters, odors, etc., while in transit from the teat to the vessel, and is kept isolated therefrom after its deposit in the latter, as set forth. 2nd. The combination, with the tube J, provided with flexible sheath K, of the vessel A having closed top or cover B, provided with sleeve H, having the perforated elastic diaphragm G secured to its mouth, as and for the purpose set forth.

No. 18,095. Improvements in Glueing Machines.

(Perfectionnements aux machines à coller.)

William Rabbe, Cincinnati, Ohio, U.S., 17th November, 1883; 5 years.

Claim.—1st. In a glueing machine, the combination of a glue reservoir and a glue transferring drum having its surface spirally wound with a textile material, for uniformly spreading the glue on the material to be glued, substantially as set forth. 2nd In a glueing machine, the combination of the glue reservoir supported by a table or frame, a glue transferring drum and twine or rope wound round the surface of the drum, to uniformly spread the glue on the material to be glued, substantially as set forth. 3rd. In a glueing machine, the combination of a table or frame, a glue reservoir supported thereby, feed rolls for carrying the material to be glued over the reservoir, a glue transferring drum having its surface formed of a textile material, for uniformly spreading the glue on the moving material, and a brush arranged in a plane parallel to the face of the drum, substantially as set forth.

No. 18,096. Improvements in Corset Clasps.

(Perfectionnements aux agrafes des corsets.)

Julius M. Cohn, New York, N. Y., U. S., 17th November, 1883; 5 years.

Claim.—1st. The described eye-piece for corset clasp constructed with an opening *a*, for the passage of the head, and with a narrower slot leading therefrom, the said slot having an upwardly projecting flange or flanges at its side or sides to form a stop for the stud, substantially as described. 2nd. An eye-piece for corset claps constructed with an opening *a*, having a slot extending forward therefrom, and on one or both sides of the slot, an upwardly projecting flange *e* constructed with a notch in its edge, substantially as and for the purpose described.

No. 18,097. Machine for Cutting Oblique Slots in Stereotype Plates or Blocks.

(Machine à tailler les encoches obliques dans les planches ou blocs de stéréotypage.)

Charles Huke, Chicago, Ill., U.S., 17th November, 1883; 5 years.

Claim.—1st. A carrier preerably conical in cross-section having a dovetail tenon adapted to enter and move longitudinally in a dovetail groove or guide, and provided with a ledge projecting from its side face nearest the saw, the upper surface of which is preferably at right angles to said side, the whole being adapted to carry and hold at an angle to and over a saw, or other suitable cutting mechanism, a stereotype or electrotype plate or base upon which the same is mounted, as and for the purpose set forth. 2nd. The combination, with a carrier C provided with a ledge C^1, of a leaf D and latch E, substantially as and for the purpose set forth. 3rd. The combination of a carrier C with a saw or other suitable cutting device, whereby said carrier holds the material to be cut at a vertical angle to, and carrisr said material within the cutting range of the saw, substantially as set forth.

No. 18,098. Combined Bevel, Protractor and Measure. (*Beveau, rapporteur et mesure combinés.*)

John S. Thornburg, Los Angelos, Cal., U.S., 17th November, 1883; 15 years.

Claim.—The combined bevel and extension rule consisting of the combination, with the stock A having the longitudinal slot *b*, of the blade B adjustable at any angle to the stock, and having the slot *d* extending nearly the whole length of the blade and provided with the measuring scale, the stock and blade being constructed in relation to each other so that nearly the entire length of the blade may be inserted and extended endwise in and out of the stock, and the scale on the blade being numbered so as to give the exact combined lengths of the stock and blade closed, or partly, or wholly extended, substantially as and for the purpose described.

No. 18,099. Improvements in Show-Cases. (*Perfectionnements aux montres à marchandises.*)

Peter Henrichs, Erie, Penn., U. S., 17th November, 1883; 5 years.

Claim—1st. In a sectional show-case, two swinging sections mounted independently between the top and base of the case on common pivots, and supported by the base when opened or closed, and adapted to be opened together or singly, for the purpose set forth. 2nd. In a sectional show-case, the combination, with a stationary section having a projecting base and top, of two swinging sections pivoted independently upon common pivots fixed in said base and top and adapted, as shown, to swing together or singly, from said stationary section. 3rd. In an exhibition-case, a rack for ribbon-bolts consisting of end-pieces *g*, and longitudinal strips 5 5 and 6, arranged in the manner and for the purposes shown. 4th. In an exhibition-case, a ribbon-rack consisting of longitudinal strips 5 5 and 6, arranged as shown, and end-pieces *g* having hooks g^1, in combination with pins *i i* on the corner-pieces of the case-frame. 5th. In an exhibition-case, an umbrella-rack having pins *h* and rubber pieces *j* placed transversely upon the ends of the pins, and projecting towards each other upon substantially the same line, for the purpose set forth.

No. 18,100, Improvements in Show-Cases. (*Perfectionnements aux montres à marchandises.*)

Peter Henrichs, Erie, Penn, U. S., 17th November, 1883; 5 years.

Claim—1st. A show-case having a stationary section with its base underlapping the swing section, which is pivoted at the rear of the overlapping and underlapping parts near the stationary sections, as described, so that the movable section will be sustained by the underlapping ledge while being opened, and, when at rest, either open or closed 2nd. A show-case having a stationary section with its base provided with friction-tracks and underlapping, and its top overlapping the movable section, as described, which is pivoted at top and bottom in the overlapping and underlapping parts, and, when opened, is sustained by the underlapping part, substantially as described and for the purpose set forth. 3rd. In a sectional show-case, a stationary part having a base C with extension C^1, and a top D with an extension *d*, in combination with a swinging section B, having a glass top *b* mounted on said extensions C^1 and *d*, substantially as shown. 4th. A show-case having a stationary section with its base underlapping the swinging section, which is provided with a segmental moulding that completes the moulding upon the case when the section is closed, and is pivoted at the rear of the overlapping and underlapping ledges near the stationary sections, as described, so that the movable section will be sustained by the underlapping ledge while being opened, and when opened and closed, the whole combined and arranged, as set forth. 5th. In a sectional show-case wherein the swinging section is mounted upon an extension of the base of the stationary section, the combination, with said base and swinging section, of curved frictional tracks arranged substantially as shown, and having upon one of said tracks and its companion, catches, substantially as shown, for preventing the swinging section swinging beyond the underlying base. 6th. In an exhibition-case, a shelf consisting of a rack formed of metallic end-pieces F, having a rib or flange with notches *f*, and longitudinal strips H, having notches *h* and clamps h^1, substantially as and for the purposes set forth. 7th. In an exhibition-case, a shelf consisting of a rack having rabbeted longitudinal strips G *g*, and intermediate longitudinal strips H, the upper surfaces of which are on the same plane as the lower face of the rabbet, which serves as a lateral support for a plate resting on strips H. 8th. In an exhibition-case, a shelf having at its corners projecting tips e^1, in combination with the corner-pieces E, having sockets *e* attached to the corner-posts of said cases, substantially as shown.

No. 18,101. Improvements in Show-Cases. (*Perfectionnements aux montres à marchandises.*)

Peter Henrichs, Erie, Penn., U. S., 17th November, 1883; 5 years.

Claim.—1st. A stationary show-case having swinging sections on the front ends of the base, and a stationary section extending from end to end of the base and back of the swinging sections, which, when opened, admit of access to the stationary part. 2nd. A stationary show-case having swinging sections on the front ends of the base, and a stationary part having wings extending back of the swinging sections, which, when opened, admit of access to all parts of the case.

No. 18,102. Electrical Annunciator. (*Avertisseur électrique.*)

Francis Tanner, Detroit, Mich., U. S., 17th November, 1883; 5 years.

Claim.—1st. The combination of an electric magnet having centrally located trunnions, and a suitable indicator attached to an extended portion of one of said trunnions and centrally pivoted between the extremities of a fixed permanent magnet, and a bracket enclosing said fixed and pivoted magnets and secured to a suitable frame or base, and a suitable pin or stop adapted to rest against said bracket and prevent direct opposition of poles of the magnets, and suitable wires, whereby the pivoted magnet is oscillated between the poles of the permanent magnet, by the alternate reversal of the current passing there-through, and the attraction and repulsion of the permanent magnet, substantially as set forth. 2nd. The combination of the fixed bracket C and fixed permanent magnet H, and a suitable frame or base, with an electro-magnet provided with trunnions pivoted respectively in the bracket and fixed magnet, the stop *a* and a suitable indicator D secured to the trunnions of the electro-magnet, and operated by the alternate reversal of a single current in the electro-magnet and the normal attraction of the permanent magnet, substantially as shown and described.

No. 18,103. Improvement in Malt Shovels. (*Perfectionnement des pelles à malt.*)

Henry C. Cole, Wallingford, Vt., U. S., 17th November, 1883: 5 years.

Claim.—The malt shovel described, consisting of the wood blade A, the handle B, edge-plate D of V-shaped transverse section, the strips C inserted in grooves in the side edges of the blade and extending downward into a V-shaped edge-plate, and rivets *d* inserted through the blade, the strips and the portions of the edge plate which lap on both the upper and under surfaces of the blade, substantially as described.

No. 18,104. Improvements in Sewer Traps. (*Perfectionnements aux trappes d'égouts.*)

Moses T. Williams, Jersey, N.J., U.S., 16th November, 1883; 5 years.

Claim.—In a sewer gas trap, the combination, with the trap A, provided with a separable cover B and divided into three compartments by the upper and lower partitions E F, of disinfectant vessels G H, substantially as shown and described, whereby sewer gas passing through or generated in the trap will be prevented from entering the buildings, as set forth.

No. 18,105. Electric Signalling Apparatus. (*Appareil électrique à signaux.*)

James H. Cary, Boston, Mass., U. S., 17th November, 1883; 5 years.

Claim.—1st, In an electric signalling apparatus, a shaft carrying a circuit breaker and a ratchet, an electro-magnet having a neutral armature, provided with a device for rotating said shaft through its ratchet step by step, a detent adapted to engage with the ratchet and and prevent forward rotation of the shaft, and automatic devices whereby the detent is intermittently operated, and each forward step or rotation of the shaft is limited, as set forth. 2nd. The combination of the shaft having the circuit breaker, the oppositely toothed ratchets *f l*, the reciprocating lever *c*, actuated by the armature of the electro-magnet and provided with a cam surface, and the pivoted lever *h* operated by said cam surface and serving as an automatic detent, to limit the step-by-step rotations of the shaft, as set forth.

No. 18,106. Apparatus for Removing Sand Bars and other Obstructions from Rivers and Harbours. (*Appareil pour enlever les bancs de sable et autres obstructions dans les rivières et les havres.*)

Oliver H. P. Cornelius and George H. Turner, Turner, Oregon, U.S., 17th November, 1883; 5 years.

Claim.—1st. In an apparatus for removing sand bars, the vessel A having well *b*, and the trunk B projecting at an incline through the vessel A closed at its upper end, having the mouth *c*, and provided with the guides *o*, and a wheel *d* combined with the swinging tube D lapping upon and hinge-jointed to the trunk at *g*, pointed at *h*, to swing laterally, and adjustably supported from said vessel A, substantially as shown and described. 2nd. In an apparatus for removing sand bars, the vessel A having the well *b* open at the under side and closed at the top, and the trunk B projecting on an incline through said vessel, closed at the upper and open at the lower end, having the flared mouth *c* and provided with the wheel *d* on shaft *e*, in combination with the swinging hydraulic tube D, lapping the trunk hinge jointed to it at *g*, jointed at *h* to swing laterally, and adjustably suspended by a chain *k*, as shown and described.

No. 18,107. Improvements in Lanterns. (*Perfectionnements dans les lanternes.*)

Thomas Phillips, Orillia, Ont., 17th November, 1883; 5 years.

Claim.—1st. The combination of the tube C and trunk C^1, provided with upwardly and rearwardly projecting face plates hinged at their upper end, to form a face joint, the trunk C^1 secured to the burner case, and the tube C thus jointed carrying all the upper parts of the lantern, and provided with a fixed guard G1 and a hinged guard G. 2nd. The hinged face joint of the tube and trunks consisting of two face plate brackets C^2 C^3 projecting upwardly and rearwardly and pivoted at their upper end, the lower front edge e^2 cropped to form a stop. 3rd. The guard G hinged at one end to *g*, the tube C^2 having at the other end a pin g^1 with handle g^2 engaging a tubular eye g^3, in combination with the tubes C, all substantially as described and for the purposes set forth.

No. 18,108. Churn, Ice Cream Freezer, Egg Beater and Paint and Oil Mixer. (*Baratte, congélateur à crème, vergette et broyeur de couleurs.*)

Frank P. Stebbins, Portland, Mich., U. S., 17th November, 1883; 5 years.

Claim.—1st. The cover plates D D1 having a tongue and socket connection, and a separable arm E for the drive-wheel carrying a double bearing for the upper ends of the stems of the dashers, substantially, as specified. 2nd. The cover sections having the plate section D D1 connected by tongue $p1$ and socket r, and the edge hooks L, of the wall engaging the rim of flange c of the cover sections, substantially as specified. 3rd. The combination, with the dashers C having the splined and shouldered stems g and the pinions h H, and drive-wheel G, of the cover section B, plate sections D D1, their socket and tongue connections, the socket s, thumb-screw v and removable arm E, having the lateral bearing Z, and the extension F, substantially as specified.

No. 18,109. Conservatory and Greenhouse Glass Roof. (*Toiture en verre de serre-chaude.*)

Théodore Polito, Montreal, Que., 17th November, 1883; 5 years.

Claim.—1st. In a glass roof, the construction shown, consisting in the diagonally directed lap joints, of the glass sheets a^1 and having interposed between them the metallic meeting rails E, forming the flanges a and b, and the gutter c, substantially as set forth. 2nd. In a glass roof, the diagonally placed meeting rails E, having the flanges a and b and gutter c, in combination with the main drain F, substantially as and for the purpose set forth.

No. 18,110. Improvements in Ratchet Drills.

(*Perfectionnements aux forets à rochet.*)

William Sandiford, Joliet, Ill., U. S., 17th November, 1883; 5 years.

Claim—1st. In a ratchet drill, the frame B, having the elongated sleeve r, and elongated arm S forming a part thereof, in combination with the shaft S1, miter wheel a^1, miter wheel a^2, miter wheel a, having the elongated hub Y forming the drill spindle, ratchet wheel a^3 having the elongated hub or sleeve r^1, ratchet wheel a^4, lever R and pawls P and P_1, all arranged to operate in the manner set forth. 2nd. In a ratchet drill, the miter wheel a arranged, as shown, on the arm S forming a portion of the frame B and terminating in the elongated hub Y to form the drill spindle, as set forth. 3rd. In a ratchet drill, the combination of the ratchet a^3 having the elongated hub r^1, elongated sleeve r, of the frame B and the miter wheel a^2, arranged to operate as set forth. 4th. In the ratchet drill described, the frame B having the elongated sleeve r and elongated arm S, in combination with the shaft S1 and miter wheels a a^1 and a^3, by which said frame B is enclosed as set forth. 5th. In a ratchet drill, the yoke D, in combination with the frame B1, for the purpose set forth.

No. 18,111. Dish Washing Machine.

(*Machine à laver la vaisselle.*)

Betsey S. Wheeler, North Wanwatosa, Wis., U. S., 17th November, 1883; 5 years.

Claim.—1st. In a dish washing machine, the yoke H and pitman F, in combination with the lever O_1, crank shaft G, grippers M M and mechanism for actuating these parts, substantially as set forth. 2nd. In a combined dish washing machine and cabinet, the combination of the basin B with the downwardly slanting drawing lids B_1 connected together by thick hinges b_1 attached so that the bolts or joints of the hinges will be between the top edges of said basin and the adjacent edges of the lids when opened, and thereby force the inverted inner top edges of the lid in against the sides of the cabinet, as shown and described and for the purpose set forth. 3rd. In a dish washing machine, the combination of the yoke H, pitman F and crank shaft G and operating mechanism, with the gripper M having jaws provided with teeth m_1 for securing a sponge or rag between them and pivoted shanks M_1 M_2, substantially as set forth. 4th. In a dish washing machine, the combination of the pulley d, wrist pin f, yoke H, rod m, crank shaft G g and pitman F, having slot f_1, substantially as set forth and for the purpose specified. 5th. The combination of a pulley d, wrist pin f, yoke H, rod m, cranks shaft G g and slotted pitman F f_1, with arm O, rod o, bent and slotted lever O_1 o_1, and sponge grippers M M, substantially as set forth and for the purpose specified. 6th. The combination of the yoke H having lug h with slotted pitman F f_1, rod m, crank shaft G g^1, grippers M M and actuating pulley and wrist pin, and the bent and slotted lever O_1 o_1 connected to the pitman F, and the pin P, spring q and nut q^1, substantially as set forth and for the purpose described.

No. 18,112. Improvements in Electric Lighting, &c. (*Perfectionnements dans l'éclairage électrique, etc.*)

Otway E. Woodhouse and Frederick L. Rawson, London, Eng., 17th November, 1883; 10 years.

Claim.—1st. In an incandescent lamp, the preparation of flax carbonized filament by treatment with caustic soda and sulphuric acid and by rolling, drawing and carbonizing, substantially as described. 2nd. In an incandescent electric lamp, the construction of the filament attachments A by flattening out, perforating, tongueing, rolling into a tube and troughing the same to receive and grip the carbon filament, substantially as described with reference to Figures 1 to 5 A. 3rd. In an incandescent electric lamp holder, the combination, with a known base E and connections of elastic fingers or cross loops G, and elastic leads F, or claws K to elastically re-act so as to make firm and good electrical contact, substantially as described in reference to Figures 6, 7 and 8. 4th. In a safety switch junction for electric lighting circuits, the combination of a tin foil bridge L and spring switch M, with the binding screws and circuit connections, substantially as and for the purposes described in reference to Figures 9 and 10. 5th. In a safety junction for electric light circuits, the combination of a tin foil bridge on an insulating material with a base plate and connecting screws, substantially as described in reference to Figures 11 and 12.

No. 18,113. Improvements in Paint Distributers. (*Perfectionnements aux distributeurs des couleurs.*)

Liberty Walkup, Rockford, Ill., U. S., 17th November, 1883; 5 years,

Claim.—1st. The combination, with the wind-wheel and with the needle, of a slotted lever having a pivotal support and a pitman connection of its free end, with the wind-wheel to impart a reciprocating endwise movement of the needle, substantially as set forth. 2nd. The combination, with the wind-wheel and with the needle, of a slotted lever having a pitman connection with the wind-wheel and a pivotal support made adjustable to vary the stroke or endwise throw of the needle, substantially as and for the purpose set forth. 3rd. The combination, with the pivotal support of the slotted lever made adjustable, of a pivoted lever having an operative connection with the adjustable support of the slotted lever, substantially as and for the purpose set forth. 4th. The combination, with the pivotal support of the slotted lever made adjustable, of a pivotal lever having a link or rod connection with the adjustable support of the slotted lever, substantially as and for the purpose set forth. 5th. The combination, with the wind-wheel and with the working parts connected therewith, of a pivoted cap adapted to cover the wheel, and the working parts connected therewith, substantially as and for the purpose set forth. 6th. The combination, with the wind-wheel branch of the air tube, of a throttle valve to regulate the flow of air to the wind wheel, substantially as and for the purpose set forth. 7th. The combination, with the reciprocating needle having an endwise movement over the pigment receptacle, of a yielding guide to engage the needle to hold it in position on the receptacle, substantially as and for the purpose set forth. 8th. The combination, with the reciprocating needle, of an overhanging guide for engaging the needle to guide the same in its endwise reciprocation over the pigment receptacle, substantially as described. 9th. The combination, with the reciprocating needle having an endwise movement over the pigment receptacle, of a removable guide for engaging the needle, substantially as and for the purpose set forth. 10th. The combination, with the needle, the pigment receptacle and with the forked guide, of the lengthwise vertical guide slot to receive the down turned end of the needle, substantially as and for the purpose set forth. 11th. The combination, with the slotted lever and the guide slot in the lengthwise direction of the movement of the needle, of a needle having its bent end constructed to engage the slotted lever, and the guide groove to cause the needle to reciprocate in a right line in the direction of its length, substantially as set forth. 12th. The described pigment receptacle or reservoir, having a pivotal support capable of a downturned position, and a stop to limit its upward movement, substantially as and for the purpose set forth.

No. 18,114. Apparatus for Subaqueous Boring. (*Appareil de forage sousmarin.*)

Thomas English, Hawley, Eng., 17th November, 1883; 5 years.

Claim.—In apparatus for subaqueous boring, the combination of a barge or floating vessel A, a boring tube F loaded with adjustable weights and suspended from a framing on the vessel, a driving shaft worked by an engine or other motor on the vessel, and an endless rope Q subject to the tension of a weight W and led by guide pulleys from a driving pulley M on the motor shaft to a pulley F_1, by which rotary motion is imparted to the boring tube, substantially as and for the purposes set forth.

No. 18,115. Improvements in Pipe Wrenches.

(*Perfectionnements aux clés à tuyaux.*)

James L. Taylor, Ishpeming, Mich., U. S., 17th November, 1883; 5 years.

Claim.—1st. In a wrench, the fast head or jaw C having opposite serrated sides c c, in combination with a concave swinging jaw D forked and serrated, substantially as and for the purposes specified. 2nd. The combination, with a shank portion A of the handle having a screw thread b on it, of the fast head or jaw C having opposite concave serrated sides c c converging towards one another in an outward direction, the nut B and the forked jaw D pivoted to said nut, essentially as shown and described.

No. 18,116. Combined Tag and Envelope.

(*Etiquette et enveloppe combinées.*)

Joseph T. Dunham, Brooklyn, N. Y., U. S., 17th November, 1883; 5 years.

Claim.—1st. A tag provided with a flap, adapted to be folded over the tag to cover the address on the same, on which flap the mark of the package, etc., is to be produced, substantially as set forth. 2nd. A combined tag and envelope, made substantially as shown and described, and consisting of an envelope having at one end a flap of sufficient size to cover one side of the envelope, as set forth. 3rd. In a combined tag and envelope, the combination, with an envelope A having a flap B at one end of the eyelet D in the free end of the flap, and the eyelet C in that end of the envelope opposite the one to which the flap is attached, substantially as shown and described and for the purpose set forth.

No. 18,117. Improvement in Sulky Ploughs.

(*Perfectionnement des charrues à siège.*)

Harry Wiard and William R. Bullock, Syracuse, N. Y., U. S., 17th November, 1883; 5 years.

Claim.—1st. In a sulky plough, the combination with the sulky frame of a crank axle having its two arms pivoted on said frame at points directly opposite and in line with each other, one of said arms being extended rearward and below its pivot, and formed with the furrow wheel axle and the land wheel axle attached to the sulky frame separate and independent of the crank axle, substantially as shown. 2nd. In combination with a plough a main frame supporting the driver's seat and provided with a stationary axle for the land wheel, a crank

axle pivoted on said frame and having fixed to it the furrow wheel axle, eccentrically in relation to the land wheel axle, and a lever fixed to the crank axle and fulcrumed on the main frame in such relative position as to swing the furrow wheel axle forward and backward underneath the fulcrum of the lever, substantially as set forth. 3rd. In combination with a plough, an arched main frame provided with a stationary land wheel axle, the driver's seat supported on said frame, a crank axle pivoted at its arms on the main frame and having one of said arms extended below its pivotal support, and terminating with an axle for the furrow wheel, and a lever fixed to the furrow wheel axle and fulcrumed on the main frame above said axle, substantially as set forth. 4th. In combination with the sulky frame, the crank axle terminating at the end of one of the crank arms with a pivotal connection on the frame, and having the other crank arm of greater length and inclined rearward and terminating with the furrow wheel axle, and supported by an arm pivoted on the main frame, and the land wheel axle attached to said frame separate and independent of the crank axle, substantially as shown and set forth. 5th. In combination with the main frame A provided with the stationary axle *a*, the crank B pivoted at the end of the arm *b* and having the longer arm *b*1 extended rearward and forward with the furrow wheel axle *a*1, the arm *c* connected to the arm *b*1 and pivoted on the frame above the axle *a*1, the lever L fixed to the furrow wheel axle and having the arm *d* hinged to the pivoted pin of the arm *c* and provided with the dog *e* and the ratchet *f* fixed to the wheel hub *g*, substantially as shown and set forth. 6th. In combination with the frame A supporting the driver's seat and provided with the stationary axle *a*, the crank axle B hinged on the frame A and having the arm *b*1 inclined rearward and extended below its support on the frame, and provided at its extremity with the furrow wheel axle *a*1, the lever L fixed to the furrow wheel axle and having the arm *d* hinged on the pivotal pin of the arm *c* and provided with the dog *e*, and the segmental rack R secured concentric with said pivotal pin, substantially as described and shown. 7th. In combination with the ratchet on the wheel hub and the quadrant on the frame, the duplex dog consisting of a single bar having its lower end adapted to engage the ratchet and provided at the quadrant with a tooth adapted to engage therewith, substantially as described and shown. 8th. In combination with the ratchet on the wheel hub, and the quadrant having teeth or notches, on its underside, the lever provided with a longitudinal way, the rectilineal reciprocating duplex dog having its lower extremity adapted to engage the ratchet, and provided at the underside of the quadrant with a tooth or lug and a spring arranged to normally sustain the dog in its elevated position, substantially in the manner set forth and shown. 9th. In combination with the ratchet on the wheel hub, the quadrant provided on its underside with a series of notches and on top of its forward end with an upward projecting guard, the rectilineal reciprocating duplex dog having its lower end adapted to engage the ratchet and provided with lugs *h* and I respectively below and above the quadrant, substantially in the manner and for the purpose specified and shown. 10th. In combination with the frame A, the crank axle B and lever L fixed to said axle and fulcrumed on the frame, the quadrant R pivoted on the fulcrum of the lever and provided with slots *l l*, and the clamping bolts *m m* fastening the quadrant on the frame, substantially as described and shown. 11th. In combination with the frame A having integral with it the serrated collar *p*, the arm *r* formed in one piece with the serrated collar *p*1 clamped on the collar *p*, and provided at the opposite end with the sleeve *t*, and the axle *a* passing through said sleeve and secured thereto, substantially as described and shown. 12th. The collar M, composed of two parts *w* and *w*1, one of said parts being provided with a lower extension, an upper projection 5 and an eye 6 in the latter, and the other part being formed with a lower extension and with an upward projecting hook 7, in combination with a bolt or clamp applied to the lower end of said parts, substantially as described and shown.

No. 18,118. Improvements in Bench Vises.

(*Perfectionnements aux vis d'établis.*)

William H. Cloud and Arthur Bassett, Detroit, Mich., U. S., 20th November, 1883; 5 years.

Claim.—1st. In a bench vise, the shaft D provided with notches E, a removable latch adapted to engage said notches, and a hand wheel or bar tapped upon the outer end of said shaft, whereby the jaw is forced against the interposed object, substantially as described. 2nd. The combination, with the notch shaft and latch, of means within reach of the operator for disengaging the latch from said notches, substantially as and for the purpose described. 3rd. In a bench vise provided with a jaw, a bar C at its base, the shaft D provided with notches C, a removable latch adapted to engage said notches, and a hand wheel or bar tapped upon the outer end of said shaft, whereby the jaw is forced against the interposed object, and in combination therewith a chain or cable, substantially as described.

No. 18,119. Improvements in Numbering Machines. (*Perfectionnements aux machines à numéroter.*)

Dorrick J. Bushorr, Rockton, Ill., U. S., 20th November, 1883; 5 years,

Claim.—1st, The disk B, provided with the slide K and standard D, in combination with the levers G L and numbering wheel E, as and for the purpose set forth. 2nd. The disk B, slide K and standard D, in combination with the levers G L and the numbering wheel E, provided with movable types P and ratchet teeth *m*, as and for the purpose set forth. 3rd. The disk B, slide K and standard D, provided with the levers G L N, in combination with the numbering wheel E, having movable types P provided with springs *p* and the ratchet teeth *m* O, as and for the purpose set forth.

No. 18,120. Improvement in Vehicle Springs.

(*Perfectionnement des ressorts de voitures.*)

James McCormick, Potsdam, N. Y., U. S., 20th November, 1883; 5 years.

Claim.—1st. A carriage spring, composed of the wood side springs D and the steel springs E attached together by bolts, rivets or other suitable means, substantially as described. 2nd. The combination, of the rear axle A, front axle B, head block C and cross bars *b*, with the wood springs D and steel springs E, having the links *c* and clasps *d*, substantially as shown and described.

No. 18,121. Hand Vise and Wrench.

(*Tenaille à vis et clé à écrou.*)

Charles E Bailey, Benzonia, Mich., U. S., 20th November, 1883; 5 years.

Claim—1st. In a combined hand-vise and wrench, a transverse threaded bar rigidly attached to the fixed jaw and passing through the lever jaw, said lever jaw having a flanged nut swivelled therein, and engaged with the threaded bar, whereby the jaws are readily adjusted to the article to be clamped. 2nd. In a combined hand-vise and wrench, a handle transverse to both jaws and secured rigidly to the fixed jaw and engaging the movable jaw, and means located longitudinally within the transverse handle for operating the movable jaw toward and from the fixed jaw, substantially as set forth. 3rd. The combination of the fixed jaw A, the movable lever A1, and the threaded and slotted cylinder *c*, of the handle with screw-bolt F and spring G, as set forth.

No. 18,122. Improvements in Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

Thomas L. Lines, Syracuse N. Y., U. S., 20th November, 1883; 5 years.

Claim.—1st. In combination with a semi-elliptic or analogous spring, a clip embracing three sides of said spring and attached to one of the leaves thereof, and provided at its extremities with shoulders projecting from the face of the spring and sustaining the clip bar isolated therefrom, as shown and set forth. 2nd. The combination, with a semi-elliptic or analogous spring composed of two or more leaves, of a tie applied to the center of the spring to prevent the leaves from shifting and clips placed astride the spring, and fastened to one of the leaves, and provided at its extremities with shoulders projecting from the face of the spring and sustaining the clip bar without frictional contact to the spring, substantially as and for the purpose specified.

No. 18,123. Improvements in Cooking Steamers. (*Perfectionnements aux appareils de cuisine à la vapeur.*)

James M. Johnson, Northumberland, N. H., U. S., 20th November, 1883; 5 years.

Claim—A cooking steamer, constructed substantially as shown and described, and consisting of the vessel A having inwardly projecting beads B C and provided with the perforated partition D, the close partition E and the pipe I, and of the cover F having conical top and provided with the trough G and pipe H, and the top compartments K provided with the faucets O, as set forth.

No. 18,124. Improvements in Belt Fasteners. (*Perfectionnements aux joints des courroies.*)

Hubert C. Hart, Unionville, Ct., U. S., 20th November, 1883; 5 years.

Claim.—As an article of manufacture, the improved belt fastener herein shown and described, consisting of a solid flat plate or body A of malleable metal having, on one side the teeth or tongues B integral therewith, and concavo-convexed in the direction of their length, and disposed in two or more rows, substantially as and for the purpose shown and set forth.

No. 18,125. Improvements in Nut Locks.

(*Pèrfectionnements aux arrête-écrous.*)

William Van R. Blighton, Tonawanda, N. Y., U.S., 20th November, 1883; 5 years.

Claim.—A bolt lock consisting of the tapering screw threaded nut *c*2, in combination with the nut seat *c* and bolt *a*3, substantially as and for the purposes described.

No. 18,126. Grain Cutting Machine.

(*Machine à concasser les grains.*)

Rodney La G. Phelps, Ravenna, Ohio, U. S., 20th November, 1883; 5 years.

Claim.—1st. In a grain cutting machine, a grain carrier grooved annularly and transversely, in combination with an adjuster *a*, having reciprocating motion in a direction lengthwise of said transverse grooves to adjust the kernels therein, substantially as described. 2nd. In a grain cutting machine, a grain carrier grooved annularly and transversely, in combination with an adjuster formed with openings *e* having reciprocating motion in a direction lengthwise of said transverse grooves, substantially as described. 3rd. The reciprocating adjuster *a* and apron *g*, in combination with a grain carrier grooved annularly and transversely, substantially as described. 4th. The grain carrier *l*, grooved annularly and transversely, in combination, with guides *c* reciprocating adiuster *a* and cutters *n*, substantially as described. 5th. The grain carrier *l*, grooved annularly and transversely, in combination with guides *c*, reciprocating adjuster *a*, apron *g* and cutters *n*, substantially as described. 6th. Cutters *n n* in pairs, having their edges bevelled on the opposite side of each, in combination with guides *c* and a grain carrier grooved annularly and transversely, substantially as described. 7th. A rotating carrier, grooved annularly and transversely, in combination with guides *c* and cutters *n*, substantially as described,

No. 18,127. Improvements in Door Bolts.

(Perfectionnementa aux fermetures des portes.)

Walter Johnson, Jackson, Mich., U. S., 20th November, 1883; 15 years.

Claim—1st. The combination, with the sliding door, the stationary abutment or stop for the door at one edge and the rear post at the opposite edge, of the sliding bolt mounted in the body of the door itself at the rear edge thereof, on a line transverse to the path of the door, and arranged to have its inner end engage directly with said rear door post, whereby the door abuts directly against said rear post when locked, and to have its outer end project beyond the outer face of the door, whereby it can be utilized to carry the seal or lock, substantially as set forth. 2nd. The combination, with the stationary eyepiece I attached to the door, of the bolt, which bolt rotates and slides in and out relatively to said eye-piece, to carry its inner end into and out of engagement with the post, and is provided with a laterally projecting handle having an eye which, when the bolt is moved in, registers with the eye-piece I, substantially as set forth.

No. 18,128. Improvements in Clothes Pounders. (*Perfectionnements aux laveuses mécaniques.*)

John Mowery, Fremont, Ohio, U. S., 20th November, 1883; 5 years.

Claim—1st. A duplex clothes pounder, consisting of the cups A A having handles B B connected by parallel cross-bars, the upper cross-bar extending beyond handles B B in both sides, substantially as set forth. 2nd A duplex clothes-pounder, consisting of the cups A A, handles B B, and extensible cross-bars C C_1 and D D_1, constructed and combined substantially as and for this purpose shown and described. 3rd. A duplex clothes-pounder, consisting of the cups A A, handles B B, extension cross-bar D D', and the upper connecting cross-bar C C, provided with means for fixing parts in their extended position, substantially as and for the purpose shown and specified.

No. 18,129. Improvements in Sulky Ploughs.

(Perfectionnements aux charrues à siége.)

George Wiard, Batavia, N. Y., U. S., 20th November, 1883; 5 years.

Claim.—1st. In a sulky plough, a wheel E constructed with a peripheral flange or tire *e*, on which the wheel runs, and an annular flange *f* projecting inwardly from the flange *e* and arranged in the inner or land side of the wheel, whereby the wheel is enabled to resist the lateral pressure of the plough, substantially as set forth. 2nd. In a sulky plough, a wheel E constructed with a peripheral flange or tire *e* on which the wheel runs, and an annular flange *f* arranged on the inner or land side of the wheel in an inclined position, whereby the wheel receives a tendency to work away from the land and is prevented from mounting the land, substantially as set forth.

No. 18,130. Horizontal Sectional Boiler.

(Chaudière horizontale en sections.)

Warden King (assignee of Edouard Bellavance), Montreal, Que., 20th November, 1883; 5 years.

Claim.—The combination of a number of horizontal sections forming a sectional boiler, or substantial part of such boiler, provided with diaphragms I, as described, substantially as shown and set forth.

No. 18,131. Improvements in Hose Couplings. (*Perfectionnements aux joints des boyaux.*)

Charles Chadwick and Charles N. Clark, Hannibal, Mo., U. S., 20th November, 1883; 5 years.

Claim.—1st. The combination of the tubular part or barrel A having on its ends the enlargements or bulbs *a a*, and on its exterior surface the screw-threaded enlargements or portions a_1 a_1, in combination with the sleeves or clamps C C, internally threaded to engage the parts a_1 a_1, and having interiors otherwise smooth and adapted to receive between them and the said barrel a hose or pipe, substantially as and for the purposes specified. 2nd. The barrel A having thereon the stop or collar B, the threaded enlargement a_1, and the bulb or enlargement *a*, in combination with the screw-sleeve or clamp C run upon the part a_1, and adapted to clamp or pinch the hose or pipe against the bulb *a*, substantially as and for the purposes specified.

No. 18,132. Improvements in Sash Fasteners. (*Perfectionnements aux arrête-croisées.*)

Edson E. Shepard and Torrence Rowlee, Morristown, N. Y., U. S., 20th November, 1883; 5 years.

Claim.—In combination with a sash-frame having transverse parallel grooves, the casting A with bearing-plate *a*, stirrup *b* having flanges *d d* and lug *c*, and means for operating and attaching the same to the sash-frame, substantially as shown and described.

No. 18,133. Improvements in Door Hangers. (*Perfectionnements aux pentures des portes.*)

Eugene Mack, Addison, Mich., U. S., 20th November, 1883; 5 years.

Claim.—A door hanger consisting of a suitable bracket, having a suspension roller journalled thereto, said bracket provided with annular flanges projecting from the tread of the roller, said flanges adapted to project downward upon each side of a movable track, and in combination therewith, an additional roller journalled to said bracket and adapted to admit the swinging of the bottom of the door, said roller provided with a flange projecting upward from the tread, substantially as described.

No. 18,134. Improvements in Loom Shuttles. (*Perfectionnements aux navettes des tisserands.*)

John P. Thompson, Phœnix, Ind., U. S., 20th November, 1883; 5 years.

Claim.—1st. A loom shuttle provided with an adjustable eye piece, having passages *c* and *e* for the thread formed therein, whereby by the adjustment of said eye-piece the tension of the thread passing through the same may be regulated, as set forth. 2nd. The combination, with the shuttle body, of an eye-piece provided with the passages *c* and *e* for the thread, said eye-piece being capable of rotary adjustment, whereby the tension of the thread passing there through may be regulated, as set forth.

No. 18,135. Improvements in Dumping Cars. (*Perfectionnements aux chars à bascule.*)

William Fallon, Newburg, N.Y., U. S., 20th November, 1883; 5 years.

Claim.—1st. The combination, with the platform *c* composed of the two wings c_1 c_1 hinged together at their junction, and provided with the hinged sides *j j* and transverse end pieces *k k* k_1 k_1, each secured to a wing c_1, of the latch locks *l l* pivoted to the transverse end pieces, substantially as described, whereby the platform is centrally raised, the latch locks are automatically disengaged from the sides and the load dumped, as set forth. 2nd. The combination, with the platform *c* composed of the two wings c_1 c_1, hinged together at their junction forming the joint c_2, of the longitudinal strip *m* rounded on its upper face and secured to one wing c_1 and projecting over the joint c_2, so as to completely cover it in any position of the platform, substantially as described, whereby the escape of any portion of the load through the joint is prevented; and at the same time when the load is raised to be dumped it is divided as near its center as possible, as set forth. 3rd. The combination, with the platform composed of two wings c_1 c_1 hinged together at their junction forming the joint c_2, of the longitudinal strip *m* rounded on its upper face and projecting over the joint c_2, and transverse end pieces *k k* k_1 k_1 provided with the plates *n n* at their joints, substantially as described and for the purpose set forth. 4th. The combination, with the platform *c* composed of the wings c_1 c_1 hinged together at their junction, and provided with eye bolts *d* secured to the lower faces of each wing near their junction, of the elevator bar *e* passing through the eye-bolts *d*, rack bars *g* having eye-bolts *f*, for the reception of the elevator bar, pinions *q* and pinions *r* secured to the car axles, substantially as described and for the purpose set forth. 5th. The combination, with the platform *c* composed of centrally hinged wings c_1 c_1, having eye bolts *d* on its under face, of the elevator bar *e* passing through the eye bolts *d*, rack bars *g* having eye bolts *f* for the reception of the elevator bar, slotted-end vertical guides *h*, each provided with a loop over the upper end of its slot, sliding shafts *p* each carrying a spring clutch, pinion *q*, pinion *r* secured to the car axles and operated by a lever *o*, substantially as described and for the purpose set forth. 6th. The combination, with the platform *c* constructed with hinged wings c_1 c_1 and end pieces *k k* k_1 k_1, and hinged sides *j j*, of the latch locks *l l*, having revolving catches l_1 l_1, buttons *t*, chain *u*, locking down the platform on the side to the dumped, supplementary hooks *o* and mechanism for elevating the platform, substantially as described, whereby all the load may be discharged on one side of the car, as set forth. 7th. The combination, with the platform *c* constructed with hinged wings c_1 c_1, end pieces *k k* k_1 k_1 and hinged sides *j j*, of the latch locks *l l*, supplementary hooks *o o*, and mechanism for elevating the platform, substantially as described, whereby half of the load may be dumped on one side of the car, and the other half reserved to be dumped at a different point on the other side of the car, as set forth. 8th. The latch locks *l*, provided on the outer ends of their shanks with revolving catches l_1 secured to the shanks, substantially as described and for the purpose set forth. 9th. The combination, with a car axle, of a pinion *r* composed of two sections r_1 r_1, each having a central or egg-shaped part armed with teeth from the centre towards its extremies, the sections being bolted to each other, and the axle and the pinion *q* connected with the elevating mechanism, substantially as described, whereby the pinion can readily be secured to the car axle or removed therefrom, and at the same time the pinion on the car axle in turning curves be always in gear with the elevating mechanism of the platform, as set forth. 10th. The combination, with the car truck *a* and platform *c*, having hinged wings c_1 c_1, provided with hinged sides *j* having blocks v_3 on their outer surfaces, of the levers *v* weighted at their outer ends and provided with the vertical rods v_2 having heads v_4, substantially as described and for the purposes set forth. 11th. The combination, with the platform *c* composed of the wings c_1 c_1 hinged together at their junction and provided with the transverse end pieces *k k* k_1 k_1 and hinged sides *j j*, of the latch lock *l l*, and mechanism for elevating the platform, substantially as described and for the purpose set forth.

No. 18,136. Improvements in Harvesters.

(Perfectionnements aux moissonneuses.)

Alexander Turner, Franklin, Ind., U. S., 20th November, 1883; 5 years.

Claim.—1st. As an improvement in trucks for moving harvesters, the axle A having mortises B, in combination with the stub axles D, having their vertical parts C fitted in said mortises, and the binding bolts H, as and for the purpose set forth. 2nd. The axle A, in combination with the stub axles D attached to the axle A, and provided with metallic sleeves N, as and for the purposes set forth. 3rd. The axle A, in combination with the converging beams I, cross-bar L and metallic braces M, the latter being secured to the stub axles, as set forth. 4th. The combination of the axles A, having mortises B, the stub axles fitted in said mortises, converging beams I, cross bar B, braces M, brackets G, and detachable sleeves N, as and for the purposes set forth.

No. 18,137. Improvements in the Manufacture of Pepsin. (*Perfectionnements dans la préparation de la pepsine.*)

Carl L. Jensen, Philadelphia, Penn., U. S., 20th November, 1883; 5 years.

Claim.—1st. The mode described of obtaining pepsin, said mode consisting in subjecting animal stomachs to the action of heat and acid, whereby a gastric digestion takes place and a peptone containing the digestive or gastric ferments is produced, separating the impurities from said peptone, and then evaporating it to dryness, as set forth. 2nd. As a new article of manufacture, the described pepsin in the form of hard scales or crystals, transparent, oderless, tasteless, capable of being permanently preserved freely soluble in water without the use of acid, free from inert additions, and having a digestive power of one to seven hundred, substantially as set forth.

No. 18,138. Horse Rake. (*Râteau à cheval.*)

Philippe Beauchemin, Sorel, Que., 20th November, 1883; 5 years.

Reclâme.—En combinaison avec un râteau quelconque, mon levier E, enbrayeur M, sa biellette N, la grande bielle H, le levier G1, l'étrier V, tel qu'appliqué sur son levier O, ce sus-dit levier O ainsi que la bielle I du palonneau telle que reliée au sus-dit levier G1, ainsi que les dites pièces N et H faites ou non de deux parties N N1 et H H1, le tout tel que décrit et pour les fins indiquées.

No. 18,139. Improvements in Hay Forks. (*Perfectionnements aux fourches à foin.*)

William H. Wortman, London, Ont., and Frank Ward, Rockford, Ill., U. S., 21st November, 1883; 5 years.

Claim.—In a harpoon hay fork; in which the harpoon points are pivoted on the ends of the stationary bars, or shanks, to which the lifting rope is attached, and are actuated by slide bars adjustably held upon the stationary shanks, and connected together by a cross-head, or bar, located below the bar to which the lifting rope is attached, a crank lever E F pivoted on the cross-head or bar G, and connected by pivoted links D to the head B, substantially as and for the purposes specified.

No. 18,140. Improvements in Ore Separators. (*Perfectionnements aux séparateurs des minerais.*)

Joseph A. Coombes, New York, N. Y., U. S., 21st November, 1883; 5 years.

Claim.—1st. In an ore separator, a bladed cylinder, or disintegrator E, and suitable exhaust apparatus, in combination with the exhaust trunk, as and for the purpose described, 2nd. In an ore separator, the combination of the suction or exhaust fan, the vertical or exhaust fan, the vertical and horizontal trunk or tube H B, and the smooth steel plate K, removably secured in position in the curved part of the trunk, for the purpose specified. 3rd. In an ore separator, the combination of the horizontal trunk B having pockets or receptacles to catch the precious metal, with the amalgam plates or abutments F F1 placed adjacent to said pockets, and removably secured in position, for the purpose specified. 4th. The combination, in an ore separator, of the trunk A B, fan C, disintegrating bladed cylinder E, pockets H H, and removable amalgam plates F F1, as and for the purpose described. 5th. The combination, in an ore separator, of the trunk A B, fan C, disintegrator E, pockets H, amalgam abutments F F1, and deflecting shield or plate K, as and for the purpose described.

No. 18.141. Improvements in Wash-Boards. (*Perfectionnements aux planches à laver.*)

Mathew W. Case, Danville, Pa., U. S., 21st November, 1883; 5 years.

Claim.—The described washboard consisting of the recessed side pieces A A, metallic bearing plates E E secured to the inner sides thereof, and provided with lugs *e* and slots *f*, the vertical cross pieces B B adapted to rest in slots formed in the ends of the metallic bearing plates, the lower cross-piece having shouldered ends which enter recesses formed in the sides A A, where they are detachably secured by pins *b b*, the head board D and horizontal cross-pieces C C, dovetailed or mortised between the upper ends of the side pieces, and the removable tubes F1 adapted to rest in the slots *f*, in contact with each other, whereby a continuous corrugated surface is formed on both sides of the board, all the parts being detachably connected, as and for the purpose specified.

No. 18,142. Washing and Wringing Machines. (*Machine à laver et essorer.*)

George Morehouse, Aylmer, Que., 21st November, 1883; 5 years.

Claim.—1st. In combination with the suds box A and rubber B, the irons D having a horizontally grooved head to prevent vertical displacement of the rubber, as described. 2nd. In combination with the suds box A, the wire rails E having a bend F, for securing the rubber elevated in the suds box, as set forth. 3rd. The combination, with the suds box A and bar H, of the wringer frame, the springs I I and bolts J J, provided with thumb nuts K, and arranged to operate, as set forth, to exert pressure on the rollers and secure the wringer to the suds box, the bolts passing diagonally clear of the gear wheels of the rollers, as shown.

No. 18,143. Improvements in Washing Machines. (*Perfectionnements aux machines à laver.*)

Charles N. White, Colby's Station, Mich., U.S., 21st November, 1883; 5 years.

Claim.—1st. In a reciprocating rubber washing-machine, the metallic skeleton bearings J fastened to the sides of the suds box and cut out or bent to form slots K, upper edges H, inclined toward the slot, and bent lower ends re-enforced by blocks L, as shown and set forth. 2nd. In a reciprocating rubber-washing machine, the combination of the suds box A, the metallic skeleton bearings *j* fastened upon the edges of the suds box by their bent ends re-enforced by blocks L, and having slots K and upper edges M inclined toward the slots, the arms N pivoted upon the sides of the suds box and having slotted ends, and the rubber D having arms G, and rod I inserted through the arms, and the slotted ends of the arms N, adapted to be tilted out of or into bearings J, substantially as and for the purpose shown and set forth. 3rd. The reciprocating rubber-washing machine, consisting of the suds box A having concave-ribbed bottom B, inclined board O and taphole P, convex rubber having ribbed bottom E, slanting arms or uprights *d* tenoned in the handle H, and rock shaft T fastened through the arms G, bearings J having re-enforcing blocks L, slots K and inclined upper edges M, and slotted arms N pivoted on the sides of the suds box, all constructed and combined to operate, substantially as and for the purpose set forth.

No. 18,144. Improvements in Eye Bars. (*Perfectionnemeuts aux barres à oeillet.*)

Joseph H. Springer, Sr., Pittsburg, Pa., U. S.. 21st November, 1883; 5 years.

Claim.—1st. The improvement herein described, in the art of forming an enlarged head on the end of a bar, consisting in bending a blank B to U-form, and welding the inner edge of such blank to the end and side edges of the bar near its end, substantially as described, whereby the head of the bar is banded and surrounded by continuous metallic fiber. 2nd. The improvement herein described, in the art of making eye bars, consisting in forming a rounded end *a* on a bar blank A, and fitting and welding to the end and side edges near the end of such blank, a bent blank B having a U-shaped inner edge corresponding to the rounded ends of the bar, and an outer edge approximately in form the desired form of head, substantially as set forth. 3rd. The improvement herein described, in the art of making eye-bars, consisting in welding a bent blank B to the end and the side edges near the end of a bar blank A, and welding face-blanks C to one or both the side faces of the head formed by the blanks A B, substantially as set forth.

No. 18,145. Improvements in Sewing Machines, (*Perfectionnements aux machines à coudre.*)

John W. Post, New-York, N.Y., U.S., 21st November, 1883; 5 years.

Claim.—1st. The combination, in a sewing machine, of a needle-operating mechanism arranged above the bed-plate, a rotary shaft arranged beneath the bed-plate, and rotary devices adapted to be interchangeably secured to, or carried by said shaft, for co-operating with the needle in forming either lock or chain-stitches, substantially as set forth. 2nd. The combination, with a reciprocating needle-bar and a revolving shaft provided at its front end with suitable means of attachment of the lock and chain stitch loopers O and K, adapted to be interchangeably secured to said revolving shaft, substantially as and for the purposes set forth. 3rd. In a convertible sewing machine adapted for use with either a revolving chain-stitch looper K or a revolving lock-stitch looper O, the rotary shaft *i*, provided with an axial slat or socket K1 and a set-screw K2, the latter projecting slightly within said socket, in combination with the looper-shanks provided at their ends with a grooved or flattened surface, whereby the proper adjustment of said loopers with reference to the needle is secured, as set forth. 4th. The combination, in a sewing machine, of a rotary driving-shaft arranged above the bed-plate, a needle-bar connected with and operated by said driving shaft, a counter rotary shaft arranged beneath the bed plate, mechanism for operating said counter-shaft from said driving-shaft, and interchangeable rotary devices adapted to be carried by or secured to said counter-shaft for co-operating with the needle in forming either lock or chain-stitches at the will of the operator, substantially as set forth. 5th. The combination, in a sewing machine, with a needle and its operating mechanism, of a rotary device adapted to press slightly against the side of said needle when it descends below the work-plate, to insure the formation of loops of needle-thread, and a rotary device co-operating with said needle in forming the stitches, for seizing and expanding said loops, substantially as set forth. 6th. The combination, in a sewing machine, with a needle and its operating mechanism, of interchangeable rotary devices co-operating with said needle to form different kinds of stitches, substantially as set forth. 7th. The combination, in a sewing machine, with a needle and its operating mechanism, of interchangeable rotary devices co-operating with said needle in forming different kinds of stitches, said interchangeable rotary devices being both constructed to operate on the same side of the needle, substantially as set forth. 8th. The combination, in a sewing machine, of a needle and its operating mechanism, a revolving shaft provided at its front end with suitable means of attachment, and interchangeable rotary devices for forming different kinds of stitches adapted to be secured to said shaft, the said interchangeable devices being so constructed that, when seated on the end of the shaft, their proper adjustment relatively to the needle is secured, substantially as set forth. 9th. The combination, in a sewing machine, with a needle and its operating mechanism, of interchangeable rotary devices adapted to co-operate with said needle in forming different kinds of stitches, and a thread-controlling mechanism adapted to coact with either of said interchangeable devices in forming said different kinds of stitches, substantially as set forth. 10th. The combination, in a sewing machine, of interchangeable rotary lock and chain-stitch loopers, and a thread-controlling mechanism adapted to draw the thread from the hook of the lock-stitch looper at the proper moment, or to serve as a take-up in connection with the chain-stitch looper, accordingly as one or the other of the loopers is used, substantially as set forth. 11th. The combination, with the revolving looper K, of a reciprocating needle-bar provided with a projection *f*, which raises the thread and draws it tight in finishing the stitch, and a needle-bar guide provided with a mortise *e* in which the projection *f* plays, substantially as set forth. 12th. The combination, with a revolving looper O and spool-holder P, of a reciprocating needle-bar

provided with a projection *f*, which depresses the thread and draws the loop from the hook of the looper, substantially as set forth. 13th. The combination, with the driving-shaft A, and crank-disk a^1, of the needle-bar a^2, cross-head a^4 constructed with a semi-cylindrical bearing surface at one end, connecting rod a^3, and a presser-foot bar a^7 forming a guide for the cross-head a^4, substantially as set forth. 14th. The cross-head a^4, constructed with a perforation through which the needle bar passes and with a semi-cylindrical bearing surface at one end adapted to run in contact with the presser-foot bar a^7, substantially as set forth. 15th. The screen b^1 pivoted at its upper end to a shank b^2, in combination with the head-block provided with a shank, socket and thumb-screw b^3, whereby the screen is removably connected with the head block, substantially as shown and described. 16th. The combination, with the head-block A^3 and a reciprocating needle *b*, of a shield or guard b^1 pivoted to the head-block, whereby the guard may be placed in a position in which it will hide the needle-bar, or it can be swung out of the way so as to exposo the needle, substantially as described. 17th. The combination, with the needle-bar guide D, provided with a mortise *e*, of a needle-bar a^2, provided at its front end with a projections *f*, substantially as set forth. 18th. The combinationn, with a needle-bar guide D, provided with a mortise *e*, and inclined front portion f^2, of a needle-bar a^2 provided with a projection *f* having an inclined front side, substantially as set forth. 19th. The combination, with the needle-bar guide D having a mortise *e*, and a collar *g* having thread notches g^1 g^2, of a needle-bar a^2 provided with a projection *f* having a depression f^1 in its upper side, substantially as set forth. 20th. The combination, with a needle-bar guide D, having a mortise *e*, of a tension-disk *d*, a guide *h*, a loop h^1 extending across said mortise, and a needle-bar a^2 provided with a projection *f*, substantially as set forth. 21st. In combination with the collar *g* having thread notches g^1 g^2, the spring-bolt g^3 for the purpose of steadying the thread, substantially as described. 22nd. The combination with the head-block A^3 and needle-bar guide D in which the upper end of the needle-bar is guided, of a tension-disk or plate *d*, a spring d^1 secured with its lower end to the head-block, and pressing with its upper end against the tension-disk or plate, and a tension-screw d^2, arranged below the upper end of the spring and adapted to bear against the same, substantially as shown and described. 23rd. The combination, with the shaft *i*, of an eccentric *e* formed thereon, a feed-bar L having an elongated opening l^1 provided with a split bushing l^6, and the screw or screws l^7, whereby wear and lost motion may be taken up, substantially as set forth. 24th. The combination, with the shaft *i*, of the looper O secured thereto and constructed with a hook o^3 and curved arms o^4, a spool holder P seated in a depression in the front side of the looper O, and an annular frame bearing against the front of the spool-holder, substantially as set forth. 25th. The combination, with the looper O, spool-holder P and spool *p*, of the annular frame Q attached to a depending bracket R by a bolt *r*, having a hook end r^1, adapted to engage behind a transverse bolt r^2 and provided with an operating handle r^3, substantially as shown and described. 26th. The combination, with a removable holder for sustaining the bobbin carrying the lower thread, of a device constructed to secure said holder to its support, or detach it therefrom by a partial rotation only, substantially as set forth. 27th. The frame Q, for confining the spool-holder P in place, removably attached to the bracket or frame R, by a notched rotary bolt adapted to be locked and unlocked by a quarter-turn, substantially as and for the purposes set forth. 28th. A spool-holder provided with a spool *p* and an opening or recess p^5, through which the thread passes from the spool, and a bar p^6 arranged in said opening or recess around which the thread is wound for giving tension to the same, substantially as set forth. 29th. In a sewing machine, a head-block constructed with a transparent face-plate through which the head motion can be observed, substantially as set forth. 30th. The combination, with the revolving chain-stitch looper K, of a removable plate N arranged in front of the looper prevented from being thrown out on the front side of the needle, substantially as set forth. 31st. The revolving looper O provided with a curved arm o^4, constructed as described, and arranged relatively, as set forth, to the hook o^3 and the plane in which the needle moves, whereby the loop drawn from hook o^3 is kept out of the way of the same, and the succeeding loop formed by the needle is prevented from being thrown out or formed on the front side, substantially as shown and described.

No. 18,146. Dynamo-Electric Machine.

(*Machine électro-dynamique.*)

George W. Fuller, Norwich, Ct., U.S., 21st November, 1388; 15 years.

Claim.—1st. In a dynamo-electric machine, a hollow cylindrical armature, the core of which is composed of one or more spirals, in combination with induction coils, the convolutions of each of which traverse longitudinally the interior and exterior surfaces of the cylinders composed of the said spiral or spirals, and means for supporting the said cylinder and induction coils upon the armature shaft. 2nd. A hollow cylindrical armature core, composed of iron spirals of like diameter and piteh, suitably supported upon a rotating shaft but insulated therefrom, and having their convolutions respectively insulated from each other, for the purpose of preventing the presence in the core of a continuous metallic circuit in whieh currents of electricity can be established by induction, when the said core is provided with induction coils and employed as an armature in a dynamo-electric machine. 3rd. A hollow cylindrical armature core composed of one or more spirals, in combination with the star-shaped heads B^1, affixed to the armature shaft A and provided with the laterally projecting fingers B^3, for the purpose of centralising the said core relatively to the armature shaft. 4th. A hollow cylindrical armature core composed of one or more spirals, substantially as set forth, and the rings D and D^1, each composed of the segments *d*, secured to the radical arms B^2, of the heads B^1 and means for longitudinally clamping the heads and core together, substantially as and for the purpose set forth.

No. 18,147. Spiral Core for Dynamo-Electric Machines. (*Noyau en spiral des machines électro-dynamiques.*)

George W. Fuller, Norwich, Ct., U. S., 21st November. 1883; 5 years.

Claim.—A spiral core, for the armature of a dynamo-electric machine, built up of sectors of iron plate successively united by having their adjoining radial edges lapped and rivetted, screwed or otherwise fastened together, substantially as set forth.

No. 18,148. Improvement in Shirt Collars.

(*Perfectionnement des cols de chemises.*)

Walter Christopher and William Gulager, Philadelphia, Pa., U. S. 22ad November, 1883; 5 years.

Claim.—1st. The combination of the neck-band of a shirt having tabs *e* on each side of the central button, with a collar constructed for engagement with said tabs, whereby the rising of the collar band above the neck band of the shirt is prevented, as set forth. 2nd. The combination of the neck-band *d* of the shirt having tabs *e* on each side of the central button *f* with a collar, the band *a* of which has tabs *b* adapted to engage with the tabs *e*, as set forth.

No. 18,149. Improvements in Hay-Tedders.

(*Perfectionnements aux faneuses à foin.*)

Norman C. Thompson, (assignee of William McGregor,) Rockport, Ill., U.S., 22nd November, 1883; 15 years.

Claim.—1st. In a hay-tedder, the combination, with the tedder arm and forks, of two separate crank shafts for operating said tedder arms and forks, and sprocket wheels and chains for communicating motion to said crank shafts independently of each other from the wheels of the machine, substantially as specified. 2nd. The hay tedder consisting in the combination of axle A, with wheels B B^1 provided with sproeket wheels *b*, front bar C, cross bars E rigidly secured to said axle, and bar C, crank shafts F F provided with sprocket wheels *g* g^1, sprocket chains G G^1, tedder arms D forks H, tongue K pivoted beneath said axle to a bracket *k* secured thereto, slotted bracket k^1, bent lever N, link *n* and ratchet N^1, all combined and operating, substantially as specified. 3rd. In a hay tedder, the combination with the tedder arms and forks, of two separate crank shafts for operating said tedder arms and forks, sprocket wheels and chains for communicating motion to said crank shafts independently of each other from the wheels of the machine, and the tongue hinged beneath the axle to a bracket attached thereto, said tongue being connected to the front end of the machine by an adjustable attachment, whereby the height of the tedder forks from the ground and their operation may be regulated, substantially as specified.

No. 18,150. Improvement in Oars.

(*Perfectionnement dans les rames.*)

James Warin, Toronto, Ont., 22nd November, 1883; 5 years.

Claim—An oar-blade having one taper rib on its convex side starting from the level of the flattened shank and merging in the gradual swell of the blade, in combination with a hollow, starting from a corresponding point on the reverse side and broadening until it is lost in the turn of the blade, as shown and for the purpose specified.

No. 18,151. Improvements in Faucets.

(*Perfectionnements dans les robinets.*)

Charles Whittaker, Chicago, Ill., U.S., 22nd November, 1883; 5 years.

Claim.—1st. In a hot and cold water faucet, the combination, in a single water-chamber, of two valves with a single crank-pin adapted, by the peculiar relative arrangement of said valves to said crank pin, to be both simultaneously and alternately opened and closed by the rotation of said pin, substantially as and for the purpose specified. 2nd. The combination, of chamber D provided with ports F and G, stoppers H and I, rods L and M, crank pin K, valve stem C and handle A, substantially as set forth.

No. 18,152. Improvements in Cross-Cut Saws. (*Perfectionnements aux scies de travers.*)

George W. Wills, Portland, Oregon, U. S., 20th November, 1883; 5 years.

Claim.—As an improvement in cross-cut saws, the blade A having teeth B B grouped in pairs, with the teeth of each group united at their bases by a web or raised part of the saw blade *c*, the groups of teeth B B alternately with drags C, and having cutting edges *a* a^1 at right angles to the body of the saw, and cutting edges *e* e^1 sloping from point to base with the slope or incline in the direction of the middle of the saw blade, substantially as and for the purpose shown and specified.

No. 18,153. Improvements in House Heaters. (*Perfectionnement aux calorifères.*)

James B. Harris Jr., Genesee, N. Y., U.S., 22nd November, 1883; 5 years.

Claim.—1st. In a water ring B^{111}, the vertical partition c^1 provided with opening *d*, substantially as shown and described, for the purpose of aiding in the circulation of the water within the heater. 2nd. The water base E, provided with vertical diaphragms h^1 h^1, in combination, with the pipes G g^1 c^1 L, substantially as and for the purpose described. 3rd. In a heater, the combination *l* with the fire pot B^{11}, g^1 l^1 G and the water space E^1, of the drum, H and the inclined circular pipes I, substantially as and for the purpose set forth. 4th. In a heater, the combination, with a fire-pot B^{11}, the water ring B^{111}, the pipes g^1 l^1 G and the water space E^1, of the drum H, the inclined circular pipes I and the pipes K m^1, substantially as and for the purpose set forth. 5th. In a heater, the combination, with the water space E^1 surrounding the base E and the drum H, of the curved pipe L extending from the water space E^1 radially through the heater, and thence curved inwardly into the drum H. substantially as and for the purpose set forth.

No. 18,154. Improvements in Fly Nets.

(*Perfectionnements aux chasse-mouches.*)

Timothy Gingras, Buffalo, N. Y., U. S., 22nd November, 1883; 5 years.

Claim.—1st. As a new and improved article of manufacture, a fly-net consisting essentially of the two straps A A1 having crescent-shaped incisions B, and a series of lashes, each of which is composed of a series of strands C C1 C11 and C111, said strands being constructed to form the selvage E, and the strands C C111 to produce the fringe F of said net, the strands being secured together at regular intervals and at alternating places by means of a metallic clasp D, as and for the purpose stated. 2nd. In fly-nets, the straps A having crescent-shaped incisions B, in combination, with the strands C, said strands being secured to said straps at the narrow part *a* produced by said incisions, by means of clasps B of suitable material and proper shape, substantially as and for the purpose mentioned. 3rd. As an improved article of manufacture, a fly-net consisting essentially of a neckband A and a tailband A1, and a series of lashes, each of which is composed of a number of strands, the first and last one of which is secured to said bands A A1, and the intermediate strands one to the other at regular intervals and at alternating places by means of a metallic clasp, the whole being constructed and combined without the aid of other longitudinal or transverse bars, as and for the purpose stated. 4th. A fly-net, in which the reticulation or the lashes is secured by fastening the lashes to one another, at regular intervals and at alternating places, as specified, and securing the first and last lashes to bands of proper width, substantially as and for the object stated.

No. 18,155. Improvements in Bottle Stoppers. (*Perfectionnements aux bouchons des bouteilles.*)

Frederick B. Thatcher and Joseph W. Johnson, Bridgeport, Ct., U.S., 20th November, 1883; 15 years.

Claim.—1st. As an improved article of manufacture, the elastic plug or stopple *g* with the central mortise *g*1, contracted at its upper end to form shoulders, and formed with the flange *g*2, and the lateral vents *i* adapted for use, as described. 2nd. The combination, substantially as described, of the cap plate having an elastic plug connected thereto, with the neck-band, the connecting link pivoted to both neck-band and cap plate, the yoke or link *f* pivotally connected to the cap plate, and the cam lever *d* pivotally attached to the neck-band for engaging with said yoke or link *f*, as set forth.

No. 18,156. Composition for Heating and Illuminating. (*Composition pour le chauffage et l'éclairage.*)

Robert J. Hunter, (assignee of Urial K. Mayo,) Boston, Mass., U.S., 22nd November, 1883; 15 years.

Claim—The composition or solution, substantially as above described, for the production of a combustible gas or hydrocarbon vapor, with and by means of air, as set forth, consisting in benzine, camphor, resin, blue vitriol and bees-wax, combined in, or about in the proportions specified.

No. 18,157. Button-Hole Sewing Machine.

(*Machine à coudre faisant les boutonnières.*)

The Banks Button Hole Machine Company, (assignee of Charles M. Banks,) Philadelphia, Pa., U. S., 22nd November, 1883; 5 years.

Claim.—1st. The combination, with stock B1 and lever A1 pivoted thereon, of a sliding cam D1 secured on said stock and engaging with said lever, substantially as shown, whereby, when said slide is reciprocated, said lever will be vibrated on said stock, as specified. 2nd. The combination, with stock B1 and pivoted lever A1, of slide D1 having depending lugs *d*13, one of said lugs carrying a set-screw *d*14 for limiting the vibration of said lever, substantially as shown and described. 3rd. The combination, with feed-plate E11, of rack I1 formed in two sections *i*10 and *i*11, the latter being adapted to slide on the former and having a spring *i*15, substantially as shown and described. 4th. The combination, with the feed-plate E11, of rack I1 formed in two sections *i*10 and *i*11 and pivoted at one end, whereby, when the pinion L has traversed the teeth of both sections, said rack may be swung out of engagement therewith, substantially as shown and described. 5th. The combination of the feed-plate E11 having rack I1, pawl and ratchet K1 M and pinion L, with fee l-dog G1 and levers N N1, substantially as shown and described. 6th. The combination of feed-plate E11 and rotary disc F1 having racks *f*5 I1, with feed-bar H1, dog G1, pawl and ratchet K1 M, pinion L and levers N N1, substantially as described, whereby the feed-plate and rotary disc are moved together when the straight side of the button-hole is being stitched, while said feed-plate is held stationary, and the disc caused to rotate, when the end of the button-hole is being stitched, substantially as shown and described.

No. 18,158. Preparation of Food for Animals, Game and Poultry. (*Préparation alimentaire pour les animaux, le gibier et les volailles.*)

Edward Wylam, London, Eng., 22nd November, 1883; 5 years.

Claim.—An improved preparation of food for animals, or game, or poultry, consisting of ingredients, substantially as described, the essential feature being the employment of cod liver oil combined and incorporated with the other ingredients, substantially as described

No. 18,159. Brick and Tile Machine.

(*Machine à brique et à tuile.*)

William Pennel, Wardsville, Ont., 22nd November, 1883: 5 years.

Claim.—1st. The combination of the crank *m m*1 and stump *n n*1, substantially as and for the purpose set forth. 3nd. The combination of the crank *m m*1 and stump *n n*1, with the plunger *p p*1, substantially as and for the purpose set forth.

No. 18,160. Distributors for Broadcast Seeders and Grain Drills. (*Distributeurs des semoirs à la volée et en ligne.*

John Bartlett, Oshawa, Ont., 22nd November, 1883; 5 years

Claim.- 1st. A seed distributor, consisting of the seed cup A and wheel case B conjoined, the loose feed wheel *c* supported within the case, the guage disk E having hub F provided with flange H, the cut-off slide K placed loosely on the hub F, and held in position by bearing against the flange H and side of feed cup A, and attached to a square or polygonal driving shaft *x* to slide laterally therewith, all constructed and combined, substantially as described for the purpose specified. 2nd. The J-shaped form of the cut-off slide K. 3rd. The distributing wheel *c* having openings D over each rib, as set forth. 4th. The guage disk E, having hub F provided with flange H, as set forth.

No. 18,161. Improvements in Clothes Dryers. (*Perfectionnements aux séchoirs à linge.*)

Timothy D. Brown, Oakland, Cal., U. S., 22nd November, 1883; 5 years.

Claim—1st. A frame provided with lines for carrying clothes, in combination with fixed outer supports or slide-ways, whose inner end terminates at the window frame outside of the sashes, and an inner fixed support secured inside the window frame and sashes, the inner and outer supports being constructed to allow of the sashes being closed between them, whereby the frame carrying the clothes lines may be supported inside of the house while the clothes are being hung, and then pushed outside of the window on the outer support, all the parts being constructed and arranged, substantially as described. 2nd. The slide ways A, consisting of the rails *a* and fence or guide pieces *b* terminating at the outside of the window, in combination with the stops *h* inside the window sash, and the frame D adapted to slide upon the rails *a* of the support A, said frame being provided with lines stretched in the direction of its length to strain it tightly together, substantially as described. 3rd. The slide-ways A and the stops *h* secured permanently to the window frame on opposite sides of the sashes, in combination with the frame D provided with clothes lines, and constructed to slide entirely outside of the window upon the support A and to rest upon the stop *h* when inside of the window, substantially as and for the purpose specified.

No. 18,162. Improvements in Windmills.

(*Perfectionnements aux moulins à vent.*)

William C. Jacob, Knoxville, Iowa, U. S., 20th November, 1883; 5 years.

Claim.—The combination, in a horizontal windmill, of shafts A having spiders B B, and radial arms C, concave vanes H, arms D sliding sleeve E, rods F, nutted adjustably to said sleeve E at their upper ends, sliding sleeve G, lever I, connecting rod M, and lever J provided with the adjustable weight L, all constructed and combined to operate, substantially in the manner and for the purpose shown and described.

No. 18,163. Improvements in Corsets.

(*Perfectionnements dans les corsets.*)

Joseph Rothschild and Hiram W. Joseph, Chicago, Ill., U. S., (assignees of Julius Henninger, Racine, Wis., U.S.,) 22nd November, 1883; 5 years.

Claim.—1st. In a corset, the combination, with the corset section, of two or more shirred fabric sections, having interposed between their layers strips of rubber running transversely or diagonally to the lines of shirring, substantially as described and for the purpose set forth. 2nd. In a corset, the combination, with the elastic sections, of stiffening stays, substantially as described and for the purpose set forth. 3rd. In a corset, the front and back section united at the side by a section of shirred fabric, having vertical folds E with strips of ribbon interposed between and secured to the piece of fabric, and running transversely or diagonally to the lines of shirring and stiffening stays C located in the folds of the shirring, substantially as set forth.

No. 18,164. Machine for Making Upholstering Springs. (*Machine pour faire les ressorts des meubles.*)

Peter Fraser, Hamilton, Ont., 22nd November, 1883; 5 years.

Claim.—1st. In a machine for making upholstering springs, the combination of the shafts B B1, right and left cones E and guard M, with knee lever N attached, substantially as specified. 2nd. In a machine for making furniture springs, the cutter F attached to collar G, and right cone E for cutting off the wire after the spring is formed, substantially as and for the purpose specified. 3rd. In a machine for making furniture springs, the combination of the pinions H on the shaft B, I on the shaft *c* and L on the counter shaft D, substantially as and for the purpose specified. 4th. In a machine for making furniture springs, the pinions O on the shaft B, the pinion *m*1 on the countershaft D, the pinion *n* on the shaft *k*, the pinion *j* on the shaft *i*, substantially as and for the purpose specified. 5th. In a machine for making furniture springs, the lever *o*1 hung on the shaft B to open the cone E, also the foot lever *d* hung on the counshaft D to raise the roller K of the cone, substantially as and for the purpose specified. 6th. In a machine for making furniture springs, of the device for bending the wire consisting of the shaft C1, bracket *d*1, bevel gears *i*1 *i*2, movable posts *f*1, lever *g*1, substantially as and for the purpose specified. 7th. In a machine for making furniture springs, the foot levers *f*1 and U on the shaft *i*4, bracket *m*4, spring *r*1,

standards h^1 and 5, friction pulleys l^1 T, substantially as and for the purpose specified. 8th. In a machine for making furniture springs, the link cutter P, the same may be placed on the end of the shaft *c*, and consists of the collars *r r r*, steel collars *s s*, substantially as and for the purpose specified. 9th. In combination with the link cutter cutter P, the bobbin *u*, the same being formed with a raised central projection *v*, recesses u^1 u^1 on each side of it, substantially as and for the purpose specified. 10th. In combination with a machine for making furniture springs, the handle n^4 attached to a loose collar next the roller K, and provided with a point z^1 made to operate inthe recess d^2 of the cone E, as in Fig. 22, for completing the bent *f* on the wire, as shown in Fig. 14, as specified.

No. 18,165. Improvements in Spark-Arresters. (*Perfectionnements aux arrête-flammèches.*)

Andrew Dillman, (Assignee of Hugh R. Walker,) Joliet, Ill., U. S., 22nd November, 1883; 5 years.

Claim.—1st. In the spark-arrester described, the radial spiral partition S having the flanges S^1, in combination with the chimney A, for the purpose set forth. 2nd. In the spark-arrester described, the overhanging hoods C to cover the apertures P in the chimney A, in combination with the arresting hoods *a*, on the spiral partitions S, for the purpose specified. 3rd. In the spark-arrester described, the bonnet constructed so as to be larger in diameter at the top than at the chimney A, and connected thereto at the top by means of the annular plate H having the perforations H^1, for the purpose set forth. 4th. The chimney A having the perforations P, in combination with the radial spiral partitions S provided with the flanged S^1 and hoods *a*, hoods *c*, annular perforated plate H connecting the top of the chimney A with the bonnet, and the bonnet provided with the inclined floor D and discharge pipe E, all arranged to operate as and for the purpese seth forth.

No. 18,166. Dynamo-Electric Machine. (*Machine électro-dynamique.*)

George W. Roe, (Assignee of Henry M. Paine,) Newark, N.Y., U. S. 22nd November, 1883; 5 years.

Claim.—1st. In a dynamo-electric machine, the combination of stationary field magnets, revolving armatures and a permutator mechanism combined therewith in such a manner that, when the armatures are passing through the field of force during open circuit, they are charged with static electricity, and when the neutral axes of the field magnets and armatures are coincident, or about so, the current is closed and dynamic electricity is discharged through the permutator in the form of pulsating currents, substantially as set forth. 2nd. The method of producing pulsating electric currents consisting in storing up static electricity in a dynamo-electric machine during open circuit, and discharging dynamic electricity through a permutator at, or about the period when the neutral axes of the field magnets and armatures are coincident and the circuit is closed, substantially as set forth.

No. 18,167. Improvements in Grain Binders. (*Perfectionnements aux lieuses à grain.*)

The Dennett Harvesting Machine Company, (Assignee of Joseph P. Bullock), Milwaukee, Wis., U. S., 22nd November, 1883; 5 years.

Claim.—1st. The combination, in a grain binder, of the clutching mechanism, a pivoted trip lever and the compressor with intermediate mechanism between the compressor and the trip lever, whereby the trip lever and the compressor are permitted to move independently of each other during the binding operation, but when at rest, be in such a position, that the accumulated grain will cause the compressor-shaft to throw the trip lever off of the clutching mechanism, substantially as set forth. 2nd. The trip lever, in combination with the compressor-shaft and its crank arm, and a slotted connecting strap, as set forth. 3rd. The combination of the main binder wheel having the curve, or depression, in its cam groove, of the compressor-shaft, the spring connecting-rod and the pivoted lever having a roller taking into the cam groove, substantially as and for the purpose set forth.

No. 18,168. Improvements in Stamp Mills. (*Perfectionnements aux bocambres.*)

John C. Butterfield, Chicago, Ill., and Stephen H. Tarbell, Boston, Mass., U. S., 22nd November, 1883; 15 years.

Claim.—1st. In an atmospheric power hammer, wherein the power is communicated from the driver to the walking beam by means of a cylinder carried by a crank, and a piston which actuates the walking beam *c*, the cylinder with the box w^1 for the crank attached directly to the cylinder head, for the purpose of setting the cylinder close upon the crank, as and for the purpose set forth. 2nd. The pneumatic cylinder *i* and the piston *j*, whereby air is compressed in the end of said cylinder combined with a valve *k*, and closing spring to automatically close said valve against the escape of air from said cylinder, but capable of opening inward to prevent the formation of a partial vacuum in said cylinder, as set forth. 3rd. A pneumatic cylinder *i* mounted upon and capable of transmitting motion to a walking beam, or other mechanism, combined with a piston *j* fitted to said cylinder, and means for actuating said piston, and valve *k* set in said cylinder, and independently of the action of said piston, automatically closed against the escape of air from said cylinder, as set forth. 4th. In combination, the driving air compressing air cylinder *i*, the piston rod *j*, cross-head *r*, and beam *e* and the springs *s s*. 5th. In combination, the driving air compressing cylinder *i*, the piston rod *j*, in two parts, united by the sleeve *p* having right and left hand threads, whereby it is made adjustable as to length. The beam *e*, pivoted cross-head *r*, springs *s* and *s*, and tension regulation nut *w*, substantially as set forth. 6th. In combination with the cylinder *i*, piston rod *j*, cross-head *r*, the outer springs *s* and *s*, and the inner spring s^1, substantially as set forth. 7th. The reciprocating air-compressing cylinder *i* provided with a water jacket j^1, open at top and extended above said cylinder so that water may be fed therein from a stationary source of supply, substantially as described. 8th. The air compressing cylinder *i*, and water jacket j^1, extending part away over the length of said cylinder, and provided with waste holes, whereby water may be permitted to escape down the side of said cylinder below the jacket. 9th. An air compressing cylinder *i*, having air vents *l* at its mid-section, for the purpose set forth, and provided with the shield *m* covering said vents, substantially as set forth. 10th. An air-compressing cylinder *i*, having one or more air vents *l* at its mid-section, for the purpose set forth, and provided with the shield *m* covering said vents, substantially as and for the purpose set forth. 11th. An air cylinder and piston for transmitting power by means of air compression in said cylinder, as described, combined with a device for feeding water at the middle of the cylinder to lubricate the piston, as set forth. 12th. The piston and the cylinder provided with the vent holes *l*, and shield *m*, combined with the water feed pipe *o*, to conduct water to the space within said shield, for the purpose set forth. 13th. The piston and the cylinder provided with the vent holes *l*, and shield *m*, combined with a flexible water pipe *o*, connected at one end to said shield *m*, at the other end to a stationary supply *n*, provided with a controlling valve. 14th. The piston and the cylinder provided with a water supply pipe *o*, discharging at the middle of said cylinder as shown, combined with the vacuum relief valve *k*, whereby surplus water in the lower end of the cylinder may escape. 15th. The combination, in a stamp mill, of the following instrumentalities, *to wit*: the rotating stamp rod *v*, the cross-head *r*, the disks *z* and springs *w*, above said cross-head, and rotating with said rod, the ratchet disk A similarly attached to said rod, below said cross-head, as shown and for the purposes described, the walking beam *e*, provided with the cross-head joint pins and gravity pawl B, in engagement with said ratchet disk A. 16th. The walking beam *e*, provided with, the pivot pins X, the cross-head and the stamp rod *v*, passing through said cross-head and capable of rotating therein, combined with a ratchet disk A, attached to said rod and rotating with it, and the pawl B, pivoted to the walking beam *e*, upon a horizontal axis, substantially as described, 17th. The cross-head *r*, walking beam *e*, provided with the pin X, and the stamp rod *v*, having the shoulder d^1, and passing through, and capable of rotation in said cross-head, combined with the disks A and *z*, located upon said stamp rod, and capable of longitudinal movement, but incapable of rotation thereon, (whereby said cross-head is confined) and a loose ring or rings e^1, placed on said rod, between said disk A and the shoulder d^1, whereby its effective length may be changed, as set forth. 18th. The walking-beam *e* and stamp rod *v*, combined with the disks A and *z*, each secured to said rod to prevent rotation thereon, the cross-head interposed between said disks and free to rotate on said rod, and means for securing these parts upon said stamp rod, substantially for the purpose set forth. 19th. The walking-beam *e*, stamp rod *v*, the disks A and *z*, and the cross-head *r* secured upon said rod, as set forth, combined with friction rings z^1, interposed as described. 20th. The walking-beam *e*, stamp rod *v*, cross-head *r*, within which said rod may rotate, and the disks A and *z* secured to said rod, whereby said cross-head is confined, combined with the spring *w*, substantially as and for the purposes set forth. 21st. A lever, or its equivalent, and the hammer rod jointed to said lever by a close working joint, as shown, combined with a mass G of India rubber, or other materials capable of absorbing vibrations, applied to the surface of said rod, and in intimate contact therewith, independent of, and separate from the parts constituting said close working joint. 22nd. The hammer rod *v* provided with the cup H, or its equivalent, combined with the mass of India rubber G sustained therein, and clamping band g^1, substantially as set forth. 23rd. A hammer rod *v*, combined with a mass of India rubber G or its equivalent, applied to the external surface of said rod, and pressed tightly thereon, as and for the purpose set forth. 24th. In combination with the flanged bed block provided with the ribs r^1, and the cover plate M, the hollow losenge-shaped corner posts L, each provided with hooking flanges P fitted to engage with said ribs r^1 and through tie-rods N, as set forth. 25th. The mortar for stamp mills consisting of a base block J, provided with a die D, hollow corner posts L, provided with flanges and hooks P, cover plate M and bolts N, combined with the screen frames O and taper keys Q, substantially as set forth, 26th. A mortar for stamp mills, consisting of a bed block J provided with a die D, a cover plate M, and corner post L provided with flanges P, and cam latches S, bound together by bolts N, and combined with the screen frame O, taper keys Q and cover frames R, substantially for the purpose set forth. 27th. In the mortar for a stamp mill, a cover plate M, having a funnel-shaped cup T mounted thereon, surrounding the stamp rod, and a water inlet for the same, combined with a stamp rod *v*, and a guide box E for the same, located close down upon or near to said funnel-shaped cup, whereby the water poured upon said stamp rod from said cup will clean said rod and lubricate said box, substantially as set forth.

No. 18,169. Boot and Shoe Protecting Plate. (*Plaque pour la protection des chaussures.*)

Joseph Borrett, London, Eng., 24th November, 1883; 5 years.

Claim.—1st. The improved boot and shoe sole protecting plate for protecting all, or a portion, or portions, of the sole, consisting of a frame cut or reduced at suitable parts, and having projections thereon, into which a layer of leather, or the like, is forced by pressure, so as to form a sole plate of metal and leather, or the like, combined substantially as described with reference to the accompanying drawing. 2nd. A sole-protecting plate constructed as described and claimed, the space, or spaces, between the under sole, or welt, and the upper surface of the protecting plate being filled in with cork, or other suitable waterproof material, substantially as described, and represented in figures 4 and 6 of the accompanying drawing. 3rd. The manufacture and use of boots (or shoes) provided with sole-protecting plates as described and represented in figures 6 and 7 of the accompanying drawing.

No. 18,170. Improvements in Middlings Purifiers. (*Perfectionnements aux épuruteurs des gruaux.*)

William Klostermann, Young America, Minn., U. S., 24th November, 1883; 5 years.

Claim.—1st. In a middlings-purifier, the combination of an inclined rotary drum, provided with elevator strips on the inner surface, and a vibrating middlings distributer arranged therein, as set forth. 2nd. In a middlings purifier, the combination, with a vibrating middlings-distributer, and an elevator-drum surrounding it, of devices for creating a current of air in the distributer, substantially as herein described and for the purpose set forth. 3rd. In a middings-purifier, the combination, with the elevator drum C, of the fixed upper middlings distributer section K^2 and the lower vibrating distributer section K^1, and means, substantially as described, for causing an air current through the distributers, substantially as shown and described and for the purpose set forth. 4th. In a middlings purifier, the combination, with the elevator drum C, of the fixed middlings distributer section K^2, the vibrating section K^1, the links *b*, and the spring strips *c*, substantially as shown and described and for the purpose set forth. 5th. In a middlings purifier, the combination, with the inclined elevator drum C and the middling-distributer K, of the suction fan J, the blower H, the feeding chute Q and the funnel-shaped receiving-vessel S, substantially as shown and described and for the purpose set forth. 6th. In a middlings purifier, the combination, with the elevator drum C and the middlings distributer K, of the blower H, the suction J, the wind chest O^1, the tubes or conductors O, and the wind boxes N, in the middlings distributer, substantially as shown and described and for the purpose set forth. 7th. In a middlings purifier, the combination, with the elevator drum C, of the upper middlings distributer section K^2, having a peaked top, and of the lower section K^1, provided with side flanges K^3, substantially as shown and described and for the purpose set forth. 8th. In a middlings purifier, the lower section K^1, of the middlings distributer, constructed with two inclined convergings side boards M, a slotted or apertured bottom, and a series of parallel slats N, between the inner edges of the boards M, and the slotted or apertured bottom, which slats form the inner sides of the longitudinal wind boxes N, and the central space for the middlings, substantially as shown and described and for the purpose set forth. 9th. In a middlings purifier, the combination with the cylinder C and gable-roofed distributer, of the strips R R^1, attached to the inner surface of the same, the strips R, and the strips R^1 having an irregular wedge-shaped cross section, with the smaller end of the wedge resting against the drum, substantially as shown and described and for the purpose set forth.

No. 18,171. Improvements in Overalls and Pantaloons. (*Perfectionnements aux pantalons de voyage et autres.*)

William G. Venner, Hamburg, N. Y., U. S., 24th November, 1883; 5 years.

Claim.—1st. In overalls or pantaloons, each leg cut in two pieces, a front A and back B, the inside seam of the front A cut in a straight line from the point of the fly at *a*, to the bottom of the leg at a^1, and the back B cut into a curved and widened point *e* at the crotch, and sewed to the point *a* of the front and straight to the bottom a^1, as and for the purpose specified. 2nd, The front A, of overalls or pantaloons, cut with a strip b^1 forming a part thereof, and sewed to the inside of the front of the leg A^1 forming the lining of the usual fly C, substantially as specified. 3rd. In combination with the fly C and bottom part *b* the front A, the cord *d* arranged in connection therewith, forming the stay for the fly button holes, a strengthening piece for the junction of both legs and a strengthening ridge in the front *b*, for the fly buttons to be attached thereto, all substantially as specified.

No. 18,172. Convertible Freight Car.

(*Voiture à marchandises convertible.*)

Nathan H. Greene, Montreal, Que., 24th November, 1883; 5 years.

Claim.—1st. In a car capable of being tipped to either side to discharge the load, the arc or curve of the rocker, and bed along which surfaces the point of contact moves, formed of arcs of circles of varying radii, the greatest being at the extremities and gradually diminishing towards the center, all as set forth and for the purposes described. 2nd. In a car arranged to be tipped, the combination, with the bed and rocker having curved meeting surfaces, of a central boss projecting up from bed through aperture in the rocker, having its base nearly circular, its sides less vertical than the ends in line of traction, and the top nearly elliptical, hollowed out to receive a connecting pin passing up through a slot in its top, and through one or both transoms, for the purpose of forming a loose but secure connection, all as set forth. 3rd. The combination, with the bed A, with upper surface A^1, of supplementary pieces A^2, all as and for the purposes set forth. 4th. In combination with the chain connections between the trucks and car body, spiral springs, or elastic attachments, substantially as described and for the purposes set forth. 5th. In combination with a convertible, or tipping car, arms, or side supports, suspended from the body of the car and formed with devices for engaging with the trucks, and means for locking same in position, the disengagement of same being effected by levers operating directly from end of car, all as set forth. 6th. The combination of the chain pulley over which chain is drawn, revolving between two fixed collars mounted on shaft and kept thereby in line of traction, of chain having clutch thereon intermeshing with clutch operated by lever, and direct connecting rod in line of shaft to connect and disconnect the parts, all as set forth. 7th. In combination with the mechanism operating tipping of car, a meeting clutch having the intermeshing teeth formed at a double angle, as and for the purpose set forth. 8th. In a car arranged to be tipped to either side, the operating shaft, by which the chain is drawn in either direction, having one end carried in the end sill, and the other in a cross sill placed over the nearest truck, all as described. 9th. In a convertible car, the handle of the operating levers hinged, or otherwise arranged, to be folded down and stowed in recesses, or framing of car, so as to give an interrupted platform space, all as set forth. 10th. In a convertible or tipping car, the combination of the transoms with turned-up edges, and tie-bars secured together and arranged as described in connection with outside sills, all substantially as described. 11th. In a convertible or tipping car, the truck trusses having the intermediate or top bars extended longitudinally in both directions, and the lower bars taken up diagonally and connected with same, and carrying rods from which brakes are hung, all as and for the purposes set forth. 12th. In a car arranged to tip, the combination, with the several side gates, of holdfasts or fastenings, and cranked pins with turned up ends, and connected with rod or rods operated by levers, all substantially as and for the purposes set forth. 13th. In a convertible car, sockets for posts formed of three sides of a square with projections downwards, or both sides of sills, and secured thereto by bolts, as and for the purposes described. 14th. In the side framing of a freight car, the combination, with end intermediate and door posts, of midsill, short posts and long brace, all arranged and secured together, substantially as shown and described. 15th. The combination, with the longitudinal and transverse framing of a car roof, diagonal struts or rods 7, as and for the purposes set forth. 16th. The combination, with a car roof having openings in same for admission of load chutes or platforms, to receive and direct same, substantially as described. 17th. In a convertible car, a floor made in sections either to be laid down, placed against sides of car, or raised along same, as and for the purposes set forth.

No. 18,173. Machine for Swaging Needle Blanks, &c. (*Machine pour étamper les ébauches des aiguilles, etc.*)

William H. Dayton, Torrington, Ct., U. S., 24th November, 1883; 5 years.

Claim.—1st. The combination, with the dies *c* and shaft *a*, of the cylindrical shell *b*, and circular range of rollers, substantially as set forth. 2nd. The combination, with the dies *c*, and shaft *a*, of a cylindrical shell *b*, rollers *l* and ring bearings *u*, for the axes of the rollers, substantially as set forth.

No. 18,174. Rail Joint and Lock.

(*Joint et sabotage des rails.*)

The National Railroad Supply Company, (assignee of Thomas E. Bellington, Des Moines, Iowa, U. S., 24th November, 1883; 5 years.

Claim.—1st. The improved tapering railway joint top plate or key D having notches 1, 2, 3 in its edge, and its under surface shaped to fit against and over the abutting ends of rails, and its top and outside surface shaped to conform with the inside and under surface of the elastic clamp B, in combination with my base plate and clamp A B C having a tooth A_3, substantially as shown and described for the purposes specified. 2nd. The improved railway joint and lock composed of the base plate A B B^2 having a tooth A_3 and a jaw or fish-plate C, the abutting ends of two rails and the detachable top plate and key D having a series of notches 1, 2, 3 in its edge, substantially as shown and deseribed.

No. 18,175. Improvements in Fire Engines.

(*Perfectionnements aux pompes à incendie.*)

Lyman H. Zeigler and Jacob A. Horn, Redkey, Ind., U. S., 24th November, 1883; 5 years.

Claim—1st. The combination, with a pump and its frame, of a U-shaped axle for supporting the frame, and wheels for supporting the axle, substantially as shown and described, whereby the frame and pump can be raised during transportation and can be lowered to rest on the ground during operation, as set forth. 2nd. The combination with a pump of the pump frame C, the pole or tongue D, the U shaped axle A, the wheels B and the brace E H, substantially as shown and described and for the purpose set forth. 3rd. The combination with a pump of the pump frame C, the pole or tongue D, the U-shaped axle A, the wheels B, the brace E H and the pivoted beam V for operating the pump, substantially as shown and described and for the purpose set forth. 4th. In a fire engine, the combination, with the supporting frame C, of the cylinder J pivoted therein, the pistons T, the piston rod S, the lever V, the valve boxes K and N, the section tube M and the delivery tube Q, substantially as shown and described and for the purpose set forth.

No. 18,176. Improvements in Cultivator Ploughs. (*Perfectionnements aux charrues-cultivateurs.*)

Stephen B. Bell, (co-inventor with Jesse C. Denson,) Jamonia, Fla., U. S., 24th November, 1883; 5 years.

Claim.—The combination, substantially as set forth, of the beam A and the bars B B^1 arranged on opposite sides of the beam A and parallel to each other, at an angle to the said beam, and having their adjacent ends secured, the one close to the beam A, and the other off to one side thereof, and adapted to carry the standard C, as and for the purpose described.

No. 18,177. Improvement in Circular Cloaks.

(*Perfectionnement des manteaux circulaires.*)

William F. Russell, Peabody, Mass., U.S., 26th November, 1883; 5 years.

Claim.—1st. A circular cloak or similar outside garment having the pocket opening or hand size K, and provided with a pocket attached to its interior at said opening by tapes and hooks and eyes, or equivalent attaching devices, arranged to operate, substantially as and for the purpose set forth. 2nd. A pocket having the body E, neck or mouth piece G and puckering string H, the mouth piece being more flexible than the body, in combination with the garment A having the pocket opening K, and with means for attaching the pocket to the garment in such a manner that it may be used as an ordinary pocket, and also be detached or partially detached therefrom as occasion requires, to receive the garment when rolled up or packed, substantially as specified. 3rd. The pocket B having the body E, mouth piece G and puckering string H, the mouth piece being more flexible than the body, substantially as and for the purpose set forth. 4th. A pocket having the partially rigid body E, flexible mouth piece G and pucker-

ing strings H, said pocket being provided with the tapes D and eyes E, or equivalent means for attaching it to the interior of a circular cloak or other garment, substantially as specified.

No. 18,178. Improvements in Snow Ploughs.

(*Perfectionnements aux charrues à neige.*)

Thomas W. McKay, Inistioge, Ont., 26th November, 1883; 5 years.

Claim.—1st. The combination, in a snow plow, of the inclined floor B, the double mold board C having the sides incurved vertically, and the side walls D D extending from the foot of the inclined floor to opposite the lower point of the nose of the mold board, and cut away to be forward of the upper point of the nose, as set forth. 2nd. The cutter brace E extending from the upper point of the nose of the mold board to the foot of the inclined floor B, and the diagonal cutter braces F F secured to the cutter E, sides D D or floor B, as set forth. 3rd. The side walls D D reenforced by bars G bolted on the outside, as set forth.

No. 18,179. Method of Manufacturing Gas.

(*Mode de fabrication du gaz.*)

Amos P. Chamberlain, New-York, N.Y., U. S., 26th November, 1883; 5 years.

Claim—The method substantially described of manufacturing gas for illuminating and heating purposes, which method consists of introducing air water and hydrocarbon oil into a retort heated high enough to decompose them, and of then passing the resultant gas through water, substantially as described for the purpose specified.

No. 18,180. Life Boat. (*Bateau de sauvetage.*)

Tobias Hamilton, Centrefield, Ohio, U. S., 26th November, 1883; 5 years.

Claim.—A life boat having an approximately spherical shell segmentally cut away at its two sides, walled in at the chord of each segment by a vertical plane, and floored over each of said segmental spaces, forming a tight hull and provided with propelling wheels journaled in said vertical walls, and means within the hull of the boat for rovolving said wheels, substantially as and for the purpose specified.

No. 18,181, Locomotive Ash Pan.

(*Cendrier de locomotive.*)

Edward Bignell, Lincoln, Neb., U. S., 26th November, 1883; 5 years.

Claim.—The combination of an ash-pan provided with duplicate bottom plates, and a steam pipe communicating with the space between said plates, substantially as specified.

No. 18,182. Apparatus for Enriching Illuminating Gas. (*Appareil pour enrichir le gaz d'éclairage.*)

James Livesey, Westminster, Joshua Kidd and James Kidd, Wardsworth, Eng., 26th November, 1883; 5 years.

Claim.—1st. A carburetting apparatus consisting of a vessel, to hold the naphthaline or other hydro-carbon introduced through an opening closed by a screw plug, cap or other suitable device, the gas inlet provided with a regulating cock controlling the entrance to a double inlet pipe, having the discharge nozzles arranged in a different relative position and distance from the outlet to the discharge pipe, a superheater consisting of a heating and conducting plate tube or surface projecting from the vessel, or forming part of the outlet tube, and a branch pipe provided with one or more burners. 2nd. A carburetting vessel of any suitable shape, a two-way cock governing the inlet to a double inlet pipe having their discharge nozzles in different relative positions and distances from the entrance of the outlet pipe, and provided with a superheating device consisting of a heating plate or annular surface, disposed over the flames produced by the burners of the apparatus in connection with a heat conductor. 3rd. A carburetting vessel of suitable shape provided with a superheating device consisting of a projecting plate or plates or annular enlargement, of a central tube conveying the gas to and from the said vessel and placed over, under or near the burners to be impinged upon by the flame of the burners, and having extensions passing into the hydrocarbon contained in the vessel. 4th. A carburetting vessel holding a hydro-carbon suitable for enriching illuminating gas provided with a two-way cock regulating the gas supply and governing its entrance to a double pipe, having their discharge nozzles at different relative positions and distances from the point of exit from the carburetting vessel. 5th. A carburretting apparatus consisting of a container A having opening B provided with screw-cap, two-way cock C, controlling double inlet pipes D *d* having their discharge nozzles at different relative positions and distances from the inlet to the branch pipe E, burner *e*, heating and conducting plate F projecting laterally from the vessel A and over the flame, all substantially as described and for the purpose set forth.

No. 18,183. Sharpener for Knives, &c.

(*Rémouleur de couteaux, &c.*)

Alfred W. Sperry, Hartford, Ct., U. S., 26th November, 1883; 5 years.

Claim—1st. A sharpener for knives and other cutting implements; composed of the handle *a* and guard *z*, the stick or core *b* having a rounded end *d*, and the composition covering *c*, substantially as set forth. 2nd. A sharpener for knives and other cutting implements, composed of a handle *a*, a core *b*, composition covering *c* upon said core, and means, substantially as described, for connecting the handle and core together, for the purposes set forth. 3rd. The grinding or polishing wheel or surface formed of emery, oxide of iron, glue, linseed oil and milk mixed together, substantially as set forth. 4th. The combination, with grinding or polishing materials such as oxide of iron, or emery, of glue and linseed oil, substantially as and for the purposes set forth. 5th. The combination, with polishing materials such as oxide of iron, or emery, of glue, linseed oil and milk, substantially as and for the purposes set forth.

No. 18,184. Match Splint Machine.

(*Machine à faire les allumettes.*)

George H. Miller and Edouard Mousseau, Hull, Que., 26th November, 1883; 5 years.

Claim.—1st. The combination, with frame I having rails 2 2¹, polygonal wheels 3 4 and feed boxes 6, of the endless apron 5 composed of plates or links pintled together, carrying scoring knives 15 and slicing knives 16, a feed gear intervening the boxes and apron to intermittently feed the splint blocks to the knives, and troughs 17 having an endless belt bottom 18 to receive the splints, whereby the splint blocks are successively scored and sliced by knives moving in a continuous direction, and the splints collected, substantially as set forth. 2nd. The combination, in a machine for making match splints, of boxes to feed the splints to the knives, an endless apron carrying scoring and slicing knives in succession, and an intervening feed gear operated by the apron, whereby the splint blocks are intermittently fed and consecutively scored and sliced by knives moving in a continuous direction, substantially as set forth. 3rd. In combination with frame I having feed boxes 6, the endless apron 5 carrying scoring knives 15, and slicing knives 16 to operate, substantially as and for the purpose described. 4th. In combination with frame I having feed boxes 6 provided with feed gear, substantially as set forth, the endless apron 5 carrying scoring and slicing knives, and cams 14, whereby the splint blocks are automatically fed, scored and sliced, as set forth.

No. 18,185. Means for Uuloading Platform Cars. (*Moyens de décharger les chars plate-formes.*)

George P. Merrill, Toledo, Ohio, U.S., 26th November, 1883; 5 years.

Claim.—1st. An unloader for platform cars consisting of a plow having sides capable of being lifted or removed, substantially as set forth. 2nd. In an unloader for platform cars, the combination, with the frame work, of hinged sides capable of being lifted, substantially as set forth. 3rd. In an unloader for platform cars, a nose casting frame work and hinged sides combined with means for elevating and retaining the sides in an elevated position, substantially as set forth. 4th. In an unloader for platform cars, the combination of nose casting, frame work, hinged sides, windlasses and cords, substantially as set forth, 5th. In an unloader for platform cars, the combination of nose casting, frame work, hinged sides and removable retaining devices, substantially as set forth. 6th. In an unloader for platform cars, the combination of under grooved nose casting, central timber with metal rail bearings, frame work and screw rods or friction relieving devices passing vertically through the central timber, substantially as set forth. 7th. The combination of the unloader with the guide rail, having sliding or automatically adjustable connections at the ends of cars, substantially as set forth.

Eo. 18,186. Improvements in Controlling an Engraving or Cutting Tool by Light and Heat Rays. (*Perfectionnements dans la manière de contrôler les outils à graver ou tailler par les rayons de lumière et de chaleur.*)

The Bain Electric Company, (assignee of Foreë Bain,) Chicago, Ill., U.S., 28th November, 1883; 5 years.

Claim.—1st. The within described mode of cutting or shaping objects, the same consisting in governing the position of the working tool by varying action of heat or light rays, from a pattern plate constructed to transmit or direct the rays passed thereto to different degrees according to the pattern, substantially as set forth. 2nd. The within described method of governing the position of a working tool, which consists in varying the amount of radiant energy from a ray of light or heat passing through the pattern and controlling the position of the tool in accordance with that amount. 3rd. The combination, with a tool operating upon the object to be cut or formed, of an electrical regulating device, whereby the position of the tool is adjusted according to the variations in an electrical current, and appliances, whereby said current is varied by the varying degree of heat or light rays passing from their source to and from a pattern plate, substantially as specified. 4th. The combination, with a cutting or forming tool, of an electrical adjusting device, a pattern plate moving in unison with the traverse of the tool or object to be formed, and a selenium cell, or its equivalent, electrically connected with the regulating device and receiving the rays from the pattern plate, substantially as set forth. 5th. The combination, with a cutting or forming tool operating upon the object to be formed, an electrical regulating device, whereby the position of the tool is adjusted, a transparent or translucent pattern moving in unison with the said object and subjected to rays of heat or light, and selenium cell, or its equivalent, arranged to receive said rays and in electrical connection with the regulating device to control the latter, substantially as set forth.

No. 18,187. Improvements in Conveyors.

(*Perfectionnemente aux vis sans fin.*)

George T. Smith, (assignee of George E. Mount and Edgar Bassett,) Jackson, Mich., U.S., 27th November, 1783; 5 years.

Claim.—1st. The combination, with the gather boards and the two conveyors arranged side by side, of a chute and a suspending pivot arranged above the bottom of the chute, substantially as set forth. 1nd. The combination, with the gather boards and two conveyors arranged side by side, of a chute, suspending pivots arranged above the bottom of the chute, and transverse partition bars arranged above the chutes, substantially as set forth. 3rd. The combination, with the gather boards and the two conveyors arranged side by side,

of the spouts or chutes, and suspending pivots arranged above the bottom of the chutes, substantially as set forth. 4th. The combination, with the gather boards and the conveyors arranged side by side, of a swinging chute and a friction mechanism for retaining the chute in position after adjustment, substantially as set forth. 5th. The combination, with the gather boards and conveyors arranged side by side, the spouts, and the chutes suspended from the spouts, substantially as set forth. 6th. The combination of the gather boards, the conveyors arranged side by side, the chutes, the spouts, and the partition bars arranged above the upper edges of the spouts, substantially as set forth. 7th. The combination, with the gather boards and the conveyors arranged side by side, of the chutes, the transverse rails or ribs, and the spouts attached to the transverse rails, substantially as set forth. 8th. The combination, with the gather boards, of the transverse rebated rails and the spouts having their upper edges supported in the rebates, substantially as set forth.

No. 18,188. Improvements in Chains.

(*Perfectionnements dans les chaînes.*)

Joseph A. Jeffrey, (assignee of Benjamin A. Legg,) Columbus, Ohio, U.S., 27th November, 1883 ; 5 years.

Claim.—1st. In a drive chain, the combination of the separable parallel side bars, each having a key-hole shaped opening in one end, and separable tubular bearing for the pintle at the other, and the pintle provided at its ends with lateral projections, said pintle being seated in the tubular end bar and the key-hole shaped openings, and operating to retain the tubular bearing, and the separable side bars in close contact, substantially as set forth. 2nd. In a drive chain, the combination of the separable side bars, each having a key-hole shaped opening in one end, and the separable tubular bearing in the other, with the anti-friction roller and the pintle provided at its ends with lateral projections, and operating as a pivotal connection for the links, and also to retain the tubular bearings, the separable side bars and the anti-friction roller in proper working relation, substantially as set forth. 3rd. In a drive chain, the combination of the pintle with the chain links, each link consisting of a tubular bearing b_1, having at each end a chain link cast in one piece therewith, the links being provided at their opposite ends with the key-hole shaped openings C, substantially as set forth.

No. 18,189. Improvements in Harvesters.

(*Perfectionnements aux moissonneuses.*)

John J. Dewey, Robert S. Chalmers and Thomas Carney, Emerson, Man., 27th November, 1883 ; 5 years.

Claim.—1st. In a harvester, the combination of the endless gathering rakes C, endless delivery rakes G and an intermediate automatic compressing binding and knotting mechanism, constructed and operating substantially as described, to deliver the grain in a sheaf, as set forth. 2nd. The endless rakes C and G, provided with wings 18 to lift the teeth vertically by passing over a track 19, and falling to a horizontal position after leaving the track, as set forth, for the purpose described. 3rd. The binder frame D, baving, driving shaft 20 carrying driving wheel 11 and wheel 21 having on its inner face, a segment of bevel cog gear to rotate the knot-tyer, and a rim for holding it in position when not rotating, and on the opposite face a cam-track for operating the mechanism to guide, hold and cut the cord after knotting, as set forth. 4th. The combination of the binder frame D, having holes D1, shaft 80 provided with teeth meshing therewith, and hinged crank 84, engaging with a circular rack 85 to reciprocate the binder to suit long and short grain, as set forth. 5th. The knot-tying device, journalled in box 23 on frame D, and rotated by bevel pinion 24 keyed on its upper end, consisting of rod 22, open at one end and receiving serrated jaws 25 and 26, the latter pivoted by pin 27, to move up and down in a slot, as set forth and operating as described. 6th. The combination of shaft 29, provided with roller 32 adapted to cam-track 33 on wheel 21, to impart a rocking motion to the shaft, and the lower end provided with a device 34, on one end of which is a segment of bevel cog gear, for operating the cord-holding disk 35 and cutter-plate 36, and on the opposite end a hook for placing the cord in position on the knotter with one of its motions, and assisting to draw it off by a reverse motion, as set forth. 7th. The combination of disk 35, held in position by spring dog 44 provided with ratchets 37 and spring dog 48, for operating the disk, and cutter plate 36 provided with knife 40 for cutting the cord, and segment cog gear 41 meshing with cog segment 34, for operating the knife, and plate 42 outside the disk to fasten and hold the cord, as set forth. 8th. The curved needle or cord-carrier, keyed on shaft 45 cranked to connect by link 47, to lever 48 pivoted to frame D, and operated by cam-track 50, on wheel 11, and friction roller 51 on its upper end of the lever, for operating the automatic connection between it and the platform rakes, as described. 9th. The combination of lever 55 pivoted to the main frame, one end provided with a clasp to engage with clutch 57, on drive shaft 16 and engaging with arm 52 on shaft 46, whereby the endwise movement of the shaft will throw the clutch out of gear with wheel 8, as set forth for the purpose described. 10th. The combination of lever 61, connected by rod 62 to an arm 52, said lever lifting the tension spring 60 when pulled down by the operation of arm 52, as the needle goes into position, whereby the cord is relieved of its tension when the binder is at rest, as described and for the purpose set forth. 11th. The shaft 63, journalled in frame D and provided with arms 64 and 65, for tripping the binder into gear with its driving wheel, and compressing the bundle of grain by an eccentric cam-track 66, on wheel 11, operating alternately against the rollers 67, on arm 68, and delivering the bundle to the rakes by cog-segment 69, operating to rotate cog-wheel 70, as set forth. 12th. The lever 72 pivoted to frame D, one end engaging with clutch 74, sliding on shaft 1 and prevented from turning thereon by a feather 75 in a longitudinal groove in said shaft, to provide automatic connection between the main wheel of the binder 11 and its driving wheel 10, whereby the biuder remains at rest until the lever is released, and when clutch 74. is thrown into mesh with wheel 10, the binder is set in motion, as set forth. 13th. The shaft 63, provided with arm 78, to release lever 72, from spring 76, to start the binder by pressure of the grain against arms 64 and 65, when sufficient grain is collected to overcome the tension of spring 77, regulated by set screw 79, as set forth. 14th. The sheaf carrying device H, consisting substantially of the rocking shaft 83 and fingers 89 connected at the bottom, and provided thereat with a latch 90, and having at top a counterbalance weight 91 to re-act the carrier to re-latch, after the grain has discharged by the driver pulling a cord to open the latch, to allow the carrier to swing from the bottom to discharge and deposit the sheaves on the ground collcctively, as set forth. 15th. In a harvester, the platform rakes C, adjustable binder frame D carrying an automatic grain compressing and cord knotting mechanism, constructed substantially as described, elevating rakes G and sheaf-carrier H, combined and operating for the purpose set forth.

No. 18,190. Means for Closing Cans.

(*Moyens de fermer les boîtes métalliques.*)

Thomas G. F. Dolby, Dulwich, Eng., 27th November, 1883 ; 5 years.

Claim.—The combination, with a can or receptacle provided with a shoulder B, and the cover C provided with an upturned marginal flange D, of the angular hoop or ring E, provided with a portion having a U-shaped section to embrace the margin of the receptacle, and the flange D, and preferably with a lateral flange to rest on the cover, substantially as set forth.

No. 18,191. Improvements in Soldering Furnaces. (*Perfectionnements aux foyers de soudage.*)

W. Thomas Boultenhouse and W. Temple Boultenhouse, Montreal, Que., 27th November, 1883 ; 5 years.

Claim.—1st. In a can soldering furnace, the combinatien, with the furnace proper, of the open solder pan placed immediately over same, and flue from furnace running through solder pan, all substantially as set forth. 2nd. In a can soldering furnace, the combination, with the solder pan into which the can edge to be soldered is dipped, of shafts or rollers carrying the can and suitably rotated, as and for the purposes set forth. 3rd. In a can soldering furnace, the meehanism described for soldering cans of different diameters, consisting of shafts or rollers moved toward and away from each other, and operating wheel moved up and down at will, so as to intermesh with gears mounted on such shafts or rollers, and thereby to impart rotary motion to same at any desired distance apart, all substantially as set forth. 4th. In combination with a can soldering furnace, the door B, as and for the purposes described. 5th. In combination with the open solder pan of a can soldering furnace, the plate M, as and for the purposes set forth.

No. 18,192. Apparatus for Coating Metals.

(*Appareil pour plaquer les métaux.*)

Henry Roberts, Pittsburgh, Penn., U. S., 27th November, 1883; 5 years.

Claim.—1st. In apparatus for coating wire with melted zinc, a wiper composed of the elastic vitreous fibre known as "slag wool," in combination with suitable means for holding the same and presenting it to the wire, substantially as specified. 2nd. In apparatus for coating wire, a wiper through whieh the several wires pass to remove the surplus metal composed of artificial mineral fibre known as "slag wool," combined with means for moving and working the said material, substantially as specified.

No. 18,193. Improvements in Carriages.

(*Perfectionnements dans les voitures.*)

Harlan P. Wells, Hopewell Cape, N. B., 27th November, 1883; 5 years.

Claim.—1st. The combination of jointed standard hj, arranged to snpport the front of the forward seat e, and curved arm f, pivoted to the body in front of the pivot i of the jointed support, and pivotally connected with and arranged to support the rear of said seat, substantially as set forth. 2nd. The combination of curved arm f, arranged to support the rear portion of the front seat e, and the jointed standard hj, arranged to support the front of said seat, and with part j, formed double or in two parts, to receive between its members and guide said arm f, substantially as set forth. 3rd. In combination with front seat e, the jointed standard hj, connected with the front of the seat, the curved arm f, and link g, pivotally connected with said arm and with the rear portion of said seat, substantially as set forth. 4th. The combination of curved arm f, arranged to support the rear of the front seat e, and the jointed standard hj, arranged to support the front of said seat and to serve as the fulcrum of said arm f, substantially as hereinbefore set forth. 5th. The combination of jointed standard hj, secured to the front of the forward seat, curved arm f pivotally connected with body A, in front of said standard and also with the rear portion of said seat, and rod k pivotally connected with said jointed standard and also with a jumping iron d, of the rear seat, substantially as hereinbefore set forth. 6th. The seat bar l, formed with rigid angular projection j, at its forward part, to constitute the upper section of the jointed standard of the front seat, substantially as hereinbefore set forth. 7th. The seat bar l, formed with a slot and ears upon its upper side, to receive and sustain link g, which connects said bar l with the curved supporting arm f, substantially as hereinbefore set forth.

No. 18,194. Improvements in Button-hole Stays. (*Perfectionnements dans les renforts des boutonnières.*)

Ephraim Hambujer, Detroit, Mich., U. S., 27th November, 1883; 5 years.

Claim.—As a means of staying button-holes, a soft and corrugated wire arranged to present one of the corrugations in front of each button-hole in a series, substantially as described.

No. 18,195. Composition of Matter for Graining Wood. (*Composition pour imiter sur le bois.*)

Hezekiah Bailey and William H. Bailey, St. Thomas, Ont., 27th November, 1883; 5 years.

Claim.—A compound to be used in connection with colours in graining wood composed of vinegar, saltpetre and egg, to be mixed, substantially in the proportions set forth.

No. 18,196. Improvements in Rocker Attachments. (*Perfectionnements dans la pose des bascules.*)

William C. Ranney, Elbridge, N. Y., U. S., 27th November, 1883; 5 years.

Claim.—The combination, with the frame A B and rocker R, of the end sections *r r* connected with the rocker by an upward deflecting hinge, castors C C rigidly attached to the end sections and standing with their vertical spindle in range with said end sections, and levers *b b c* for operating the castors, substantially as described.

No. 18,197. Tool for Expanding Tubes.

(*Outil pour élargir les tubes.*)

John F. Dettmar, Brooklyn, N. Y., U. S., 27th November, 1883; 5 years.

Claim.—1st. The combination, substantially as set forth, of the longitudinally slotted hollow stock, the removable ring at one end of said stock, the pressure rollers or swages whose axles turn in radial slots in the head of the stock and removable ring respectively, and the tapering distending plug. 2nd. The combination, substantially as set forth, of the stock supporting the pressure rollers or swages, and the bearing-piece loosely mounted on the stock and adapted to bear on the tube-sheet.

No. 18,198. Machine for Unloading Hay in Barns. (*Machine à décharger le foin dans les granges.*)

Thomas Ball, Augusta, Ont., 27th November, 1883; 5 years.

Claim.—In a hay lifter or carrier, moveable side K, in combination with hinges I, pulley attachment D, shoulder J and keys H, substantially as and for the purpose set forth.

No. 18,199. Portable Steam Sawing Machine. (*Scierie à vapeur portative.*)

Edwin N. Dunckel, Butte City, Montana, U.S., 27th November, 1883; 5 years.

Claim,—1st, In a portable sawing machine described, the combination of the wheeled truck-frame A, the vertical boiler and engine B, the water-tank D with the hinging extension-frame E, substantially as and for the purposes specified. 2nd. In the portable sawing machine described, the truck-frame A, in combination with the extension and supporting-frame E, the hinges *d*, the saw-frame F, the shifting-rod *f* and the staples *g*, substantially as and for the purposes specified. 3rd. The combination of the wheeled truck-frame A, with the hinging extension E supporting the saw-frame F, provided with the arbor-mounted saw or saws *s*, and the rail-slides *i*, and with the table-frame G, provided with the sliding-claws *o* and the sliding-straps *z*, substantially as and for the purposes specified.

No. 18,200. Improvements in Electric Generators. (*Perfectionnements aux générateurs d'électricité.*)

The Bain Electric Company, (Assignee of Foreë Bain), Chicago, Ill., U.S., 27th November, 1883; 5 years.

Claim.—1st. In electric generators, the combination of two or more field magnets, constructed substantially as described, that is to say, with the cores, pole pieces and yoke pieces all turned from a common center, and means whereby the magnets are clamped together. 2nd. The combination, with field magnets and base piece or pieces, of a clamping ring embracing the magnets and means for securing the ring to the base, substantially as described. 3rd. The field magnets, consisting of the cores provided with semi-circular yoke pieces, forming journal bearings for the armature shaft, in combination with a ring or segment thereof for securing the yoke pieces together, substantially as described. 4th. The combination, with the field magnets, each being the counterpart of the other, and provided with semi-circular yoke pieces, in combination with a ring segment or band of magnetic material, embracing the field magnets, as described, whereby consequent points are avoided, as set forth. 5th. An armature ring, consisting of a spider-frame, the ends of which are provided with blades and coils, or layers of insulated iron wire wound or laid therein, substantially as described. 6th. The combination, with the shaft and bearings of an electric generator, of a sleeve or thimble embracing the shaft, and provided with grooved flanges, as and for the purposes set forth. 7th. The within described improvements in electric generators, as illustrated in Figures 1 to 6 inclusive. 8th. The within described modes of increasing the efficiency of an electric generator, the same consisting in connecting the armature circuits and commutators in the manner set forth, whereby the electrical resistance of the armature is reduced, the heating thereof is avoided, and an increased amount of current is utilized in the working circuits. 9th. The combination, with an armature of an electric generator, of two commutators, the terminals of the coils of the armature being connected to both, and suitable brushes and circuit connections, whereby the current generated may all be used in one or the other of the external circuits, substantially as described. 10th. The combination, with an armature of an electro-generator, of two commutators, the terminals of the coils of the armature being connected to both, and brushes and major and minor circuit connections arranged substantially as described, whereby the coils are cut into or out of the major or minor circuits, according to the strength of the current being generated in the coils, substantially as described. 11th. In the combination shown in Fig. 11, connecting the terminals of the coils of the armature to the segments of both of the commutators, as described. 12th. The combination, with the armature of an electric generator, of one commutator ring having twice as many segments as there are coils in the armature, and another commutator ring or rings having as many segments as there are coils, the terminals of the coils being connected to segments in both commutators and brushes and connections, substantially as described. 13th. The arrangement of segments and coil connection, as described and shown, in reference to commutator A, figure 11. 14th. The arrangement of commutators and connections, as described and shown in figure 11. 15th. The method and means, substantially as described, of connecting the coils of a dynamo or magneto-electric machine, which consists in placing coils in fields of like potential in parallel circuit, and others in fields of other potential in series. 16th. The method and means, substantially as described, of connecting the coils of electric generators, which consists in placing the coils generating currents of higher strength or tension in series circuit, and passing said currents through the coils generating currents of lower strength or tension in parallel circuit. 17th. The method and means substantially as described, of connecting the coils of an electric generator, which consists in connecting the coils generating effective currents in series, and connecting the coils passing the neutral point, so that they will be momentarily short circuited and disconnected from the main circuit. 18th. In an electric generator, the combination, with an armature, the coils of which are connected in part, of a number of commutators to one of which the terminals of all the coils are connected, the terminals being also connected to segments upon the other commutators, and brushes and connections, substantially as described, the brushes upon the first commutator being short circuited, whereby the coils generating currents of one electro-motive force may be connected in series, those generating currents of another electro-motive force may be connected in parallel circuit, and those generating practically no current may be short circuited. 19th. The within described improvement, in connecting the coils of the armature of an electric generator as described and shown, with reference to figures 11 to 18. 20th. The method and means, substantially as set forth, of connecting the coils of a dynamo or magneto-electric machine, which consists in connecting the coils passing the fields of force of practically no potential in a "long" circuit. 21st. The method, substantially as set forth, of increasing the efficiency of a dynamo-electric generator, which consists in connecting the coils passing through fields of force of small potential by a circuit of high resistance, whereby the amount of ineffective current generated is reduced, and at the same time sparking or flashing is prevented. 22nd. The within described improvement in connecting the coils of the armature of an electric generator, as described and shown, with reference to figure 19

No. 18,201. Button-Hole Sewing Machine.

(*Machine à coudre faisant les boutonnières.*)

The Banks Button Hole Sewing Machine Company (Assignee of Charles M. Banks), Philadelphia, Pa., U.S., 27th November, 1883; 5 years.

Claim.—1st. The combination of a sliding feed-plate D and a rotating disc E, provided with racks d^1 and e^2 respectively, on their under sides, with the feed-bar of a sewing machine and intermediate mechanism between said bar and the plate and disc, whereby the motion of said feed-bar slides the plate, rotates the disc and again slides the plate continuously, substantially as set forth. 2nd. In button-hole attachments for sewing machines, the combination of a bed-plate having guides with a sliding-plate fitted therein, and carrying a disc, said plate and disc having respectively a straight and an annular rack on their under-sides, whereby said plate is adapted to be moved lengthwise in the same direction, said plate remaining stationary while the disc is rotated, substantially as set forth. 3rd. An attachment for button-hole sewing machines, comprising a cloth or feed-plate adapted to slide, and a disc constructed and adapted to be rotated thereon, said plate having a straight rack and said disc having a segmental or annular rack, constructed and adapted for operation with the "four-motion" feed-bar of a sewing machine, substantially as shown and set forth. 4th. The combination, with the reciprocating feed-plate D, having a mutilated rack on its under-side, of the rotary disc E, having a segmental rack on its under-side, and the dog G, substantially as shown and set forth. 5th. The combination, with the feed-plate D, having a mutilated rack d^1 on its under-side, with oblique teeth or ridges, of the rotary disc E having on its under-side, the segmental rack e^2, with radial teeth, and the tangential ridge e^4, substantially as shown and set forth. 6th. The combination, with feed-plate D, of detachable rack d^1, substantially as set forth. 7th. The dog G, provided with the adjustable tooth g^3, as and for the purpose described. 8th. In an organized sewing machine, the combination of the following parts: a feed-plate adapted and designed to be moved longitudinally and carrying rotary or swivelled disc, a holder for securing the cloth to be operated upon on said disc, means, substantially as described, for sliding said feed-plate rectilineally, and for rotating said disc with a needle carrier, and means for reciprocating the same vertically and laterally, to form a zig-zag stitch, whereby the fabric to be operated upon is secured beneath a holder, and while so held is first moved in a straight line while one side of the button-hole is being stitched, then rotated while the eye is being formed, and then moved straight again while the other side of the hole is being stitched, substantially as shown and described.

No. 18,202. Improvements in Flexible Hoes.

(*Perfectionnements aux houes élastiques.*)

John F. Keller, Martinsburg, W. V., U.S., 27th November, 1883; 5 years.

Claim.—1st. The spring base bar B, having the bearing I, in combination with the lug H on the flexible hoe shank, and the pivoted link D, 2nd. The spring brace bar B having the bearing I and pi-

voted link D, in combination with the flexible hoe-shank having lug H, and with the adjustable hoe-point, all substantially as described and for the purpose set forth.

No. 18,203. Chain Pump Bucket.

(Godet de pompe à chapelet.)

Orlo E. Wadhams, Goshen, Ct., U. S., 27th, November, 1883; 5 years.

Claim.—1st. In a chain-pump bucket, the combination, with a suitable link, of the elastic disks placed on and removable from the same, whereby they may be reversed, the said disks being constructed of equal diameter with their opposite faces planed or formed smooth and parallel to each other, and an extension B_1, projected from one of the disks and formed concentric with, and of less diameter than the same, substantially as and for the purposes set forth. 2nd. The chain pump bucket, substantially as described, composed of the link, the disks B B made of equal diameter and having their opposite faces planed or formed smooth and parallel to each other, the concentric extensions projected from, and made of less diameter than the disks, the said disks being sprung on and removable from the link, whereby they may be reversed, all arranged and operating substantially as and for the purposes set forth.

No. 18,204. Electric Current Governor.

(Gouverneur de courant électrique.)

Joseph S. Beeman, William Taylor and Frank King, London, Eng., 27th November, 1883; 5 years.

Claim.—In apparatus for governing electric currents, the combination of a bath or resistance containing conducting plates or electrodes, and a solenoid or solenoids, or magnet or magnets, and armatures, and also an electric motor or motors, so arranged and connected with the electric generator as to regulate the relative position of the plates or electrodes, for controlling and governing the electric current, substantially as described and illustrated in the accompanying drawings.

No. 18,205. Improvements in Car-Couplers.

(Perfectionnements aux accouplages des chars.)

James Marr, Simcoe, Ont., 27th November, 1883; 5 years.

Claim.—1st. In a car-coupler, a device for operating the coupling pin consisting of the plate C having the upturned side flanges *b b*, and the slot *d*, and the sliding plate D, held to the plate C by the guide bolt *c*, passing through the slot *d*, as described. 2nd. In a car-coupler, the combination of the described device for operating the coupling pin, and consisting of the plates C and D, with the coupling pin shaft, as shown and described.

No. 18,206. Process for Manufacturing Fertilizers. *(Procédé de fabrication des engrais.)*

Edwin A. Scribner, Brooklyn, N. Y., U. S., 28th November, 1883; 15 years.

Claim.—1st. The treatment of phosphatic minerals, such as phosphates of iron and alumina, for the production of fertilizers, by simultaneously exposing the said minerals to the action of heat and sulphur, or its equivalent. 2nd. The treatment of phosphatic minerals, such as phosphates of iron and alumina, for the production of fertilizers, by mixing with a suitable quantity of the said mineral, when in a finely powdered condition, a small per centage of sulphur or its equivalent, and then roasting the said mixture. 3rd. The process for manufacturing fertilizing compounds from mineral phosphates, which consists in grinding and roasting the phosphates, and forcing through the mineral, while roasting, the vapour of sulphur or sulphurous anhydride with or without steam. 4th. The process for manufacturing fertilizing compounds from mineral phosphates, which consists in grinding and roasting the phosphates in a proper receptacle, producing the vapour of sulphur or sulphurous anhydride in a separate receptacle, and forcing the same through the roasting mineral. 5th. The process for manufacturing fertilizing compounds from mineral phosphates, which consists in grinding and roasting the phosphates, forcing through the same the vapour of sulphur or sulphurous anhydride, at the same time agitating or stirring the heated mineral.

No. 18,207. Improvements in Grain Binders.

(Perfectionnements aux lieuses à grain.)

William N. Whiteley, William Bailey and Louis H. Lee, Springfield, Ohio, U. S., 28th November, 1883; 15 years.

Claim.—1st. In a binding machine, the packers *b* b_1 b_2 b_3 and the compress finger *t*, in combination with the rock shaft *d*, provided with tilting lever *c* rigidly attached thereto, substantially as described and for the purposes set forth. 2nd. In a binding machine, the packers *b* b_1 b_2 b_3 and the compress finger *t*, the rock shaft *d* provided with tilting lever *c*, in combination with a suitable clutching mechanism, substantially as set forth. 3rd. A binding machine provided with a system of packers as described, a lever *c* extending laterally from a rock shaft *d*, and arm *q* also extending from the rock shaft, and a coupling device composed of a continuously revolving dog *e*, a pivoted spring trip lever *k j h*, and a spring latch *m n*, pivoted to a pinion *m* that is loose upon the shaft *u*, substantially as and for the purpose specified. 4th. In a self-binder, a grain receptacle, a portion of which is pivoted in a suitable manner, to cause the free end of said pivoted portion to occupy a position in said grain receptacle, to intercept and retain the inflowing grain until a sufficient amount shall have accumulated, to cause said pivoted portion to move on its pivots, and by so doing automatically connect the harvesting and binding machinery. 5th. In a binding receptacle of a self-binder *a*, a pivoted arm *c* occupying a suitable position in said receptacle, to arrest and weigh the inflowing grain, and by oscillating upon its pivots *d*, when its resistance is overcome by the weight of grain accumulated upon it, to move an intermediate mechanism *h* between it and any suitable clutching device, whereby the binding mechanism is set in motion. 6th. In a binding receptacle of a self-binder, a pivoted arm *c*, upon which the accumulating grain is weighed, an intermediate connecting mechanism between said pivoted arm and any suitable clutching device, and a spring *j*, which offers suitable resistance to the movement of said pivoted arm, whereby the grain accumulated upon said arm overcomes the resistance of said spring and causes the arm to oscillate, the intermediate mechanism to move and the clutching device to make connection between the harvester and binder by spring *j*, in combination with levers *c* and *g*, rigidly secured to the rock shaft *d*, the lever *g* being provided with adjustment screw g^1, whereby the position may be regulated as specified.

No. 18,208. Rocking Chair Fan.

(Eventail de chaise à bascule.)

Henry P. Roberts, Jamestown, N. Y., U. S., 28th November, 1883; 5 years.

Claim—1st The combination, with a rocking chair and a fan supported thereon, of a forked fan operating device formed of spring metal, the ends of the fork being rigidly attached to the opposite sides of the chair, whereby it is braced laterally in its position, and having its operative end constructed to bear on the floor at each motion of the chair, and suitable connections between the fan and operative end of the fan operating device, substantially as described. 2nd. The combination, with a rocking chair and a fan supported thereon, of the spring G, formed of a single wire bent to form a loop *i* and coils *j j* to make the spring elastic, and having its opposite ends rigidly attached to the chair, and carrying the roller *i*, constructed and arranged to roll on the floor as the chair rocks, and suitable connections between the spring and fan, substantially as described. 3rd. In combination with a rocking chair, the spring frame G secured to the rocker thereof, and carrying roller K, the standard B, adjustably secured to the clamp C, and the clamp C to the chair-back by a single bolt, the cord F, roller *h* and oscillating fans E, as and for the purposes set forth.

No. 18,209. Electro-Telegraphic Printing Instrument. *(Instrument électro-télégraphique imprimant.)*

Henry Van Hoevenbergh, Elizabeth, N. J., U. S., 28th November, 1883; 5 years.

Claim.—1st. The combination, substantially as set forth, of a transmitting cylinder mechanism for sending to line alternating electrical pulsations, and mechanism for establishing upon the line prolonged conditions of three kinds, namely: a condition of definite strength of current, a condition of lesser strength and a neutral condition. 2nd. The combination, substantially as set forth, of a transmitting cylinder, a tape arbitrarily punctured to establish the conditions as hereinbefore set forth, the contact springs, the batteries and the electrical conductors. 3rd. A metallic cylinder, a spring resting thereupon, and a transmitting tape or slip provided with lateral projections upon one of its edges, for separating said spring from said cylinder, and thereby insulating them from each other. 4th. The combination, substantially as herein before set forth, of a cylinder divided into two divisions, insulated from each other, and a tape provided with perforations passing over one of said divisions, and lateral projections traversing the other. 5th. The combination, substantially as hereinbefore set forth, of a cylinder comprising two divisions insulated from each other, a tape provided with arbitrary perforations, two springs making contact through said perforations upon one of said cylinder divisions, and a spring normally in contact with the other of said divisions, but which may be temporarily insulated therefrom, by the passage of a lateral projection upon said tape. 6th. The combination, substantially as hereinbefore set forth, of the cylinder divided into two insulate sections, one of which is in contact with the earth and the other with the line, contact springs for pressing upon said sections batteries of alternating polarity, thereby connected to line and to earth, and a shunt circuit, whereby the line may be put to earth through an artificial resistance. 7th. The combination, substantially as hereinbefore set forth, of a transmitting mechanism, establishing upon the line three distinct electrical conditions, a relay pausing in three different positions by virtue of said conditions, and three local circuits completed respectively by said relay armature lever, one including a printing mechanism only, a second including said printing mechanism, and a mechanism for advancing a type wheel through a definite arc, and the third including said printing mechanism, and a device for retrograding said type wheel through a similar definite arc. 8th. An armature lever making three contacts, namely: a central contact at which point it closes the local printing circuit, a forward stop at which point it closes the local printing circuit and includes therein a device for advancing the type wheel, and a back stop at which point it closes a local printing circuit, and a device for retrograding said type wheel. 9th. The combination, substantially as hereinbefore set forth of a type wheel normally advancing through arcs subtending three characters each, mechanism for advancing said type wheel through an arc subtending one character, and mechanism for retrograding said type wheel through an arc subtending one character.

No. 18,210. Machine for making Pressed Brick. *(Machine pour faire la brique pressée.)*

Charles Hales, Courtright, Ont., 28th November, 1883; 5 years

Claim.—The combination, in a brick machine, of a driver B having arms B_2 fitted to the lower end of the main shaft H, on the upper end of which is fitted gear to drive the press shaft G through the eccentric E, the whole combined and arranged as specified and for the purposes set forth.

No. 18,211. Improvements in Middlings Purifiers. *(Perfectionnements aux épurateurs des gruaux.)*

John Goldie and Hugh McCulloch, Galt, Ont., 29th November, 1883 5 years.

Claim.—1st. The bar M, having its upper surface channelled, or concaved, and operated near to the lower surface of the sieve cloth J1, by suitable mechanism for traversing the same backward and forward in any desired direction, in combination with the main sieve and the suction fan, and the air passages, arranged as set forth. 2nd. The combination of a concave, or hollow clearer bar M, provided with suitable mechanism for traversing the same along the lower surface of the sieve cloth J1, the main sieve J, valves K regulating the current through the sieve, the air pressure R, suction fan I, deposit chambers H, air passages D and E, provided with regulating valves C F and G, vibrating sieve B, hopper A and conveyors O and P. 3rd. The deposit chambers H, interposed in the air passages leading to the suction of the fan I and having a downward and upward deflection, to deflect the current downwards and upwards before entering the fan, and provided with suitable discharge valves, in combination with a suction fan I. 4th. The combination of the hopper A, vibrating sieve B, air passages D and E, provided with valves C F and G, main sieves J, concave or hollow clearer bar M, mounted on nut saddle Q, carried by double screw N, conveyors O and P, adjustable valves K, air passage R, deposit chambers H and suction fan I, all substantially as described and for the purpose set forth.

No. 18,212. Can Soldering Apparatus.

(*Appareil pour souder les boites métalliques.*)

Edwin Norton and Oliver W. Norton, Chicago, Ill., U.S., 29th November, 1883; 5 years.

Claim.—1st. The soldering apparatus consisting of a track having a heating plate or device, an acid-bath or receptacle, and a solder-bath or receptacle, in combination with a device for rolling the cans along said track, and a belt or carrier for supporting the cans in a vertical position while being cooled, substantially as specified. 2nd. The combination of a track provided with heating-plate or device, an acid or flux-bath and a solder-bath, with a device for rolling the cans along said track, a cooling belt, or carrier, and a device for delivering the cans from said track to said belt, or carrier, in a vertical position, substantially as specified. 3rd. The combination of a track with a heating device, an acid-bath, or receptacle, a solder-bath, or receptacle, and a chain or device for rolling the cans along said track through said baths, substantially as specified. 4th. The combination of a track, with a solder-bath, or receptacle, a solder-bath, or receptacle, and a chain, or device, for rolling the cans along said track through said baths, substantially as specified. 5th. The combination, with a track provided with a heating device, an acid-bath and a solder-bath, of a chute for delivering the cans thereto, and a device for rolling the cans along said track, substantially as specified. 6th. In a soldering machine, the combination of the inclined track, or table, provided with acid and solder-baths, and heating-plate with a chain for rolling the cans mounted upon adjustable pulleys, and adjustable rails, or guides above, and at the end of the cans, substantially as specified. 7th. The combination of the inclined track and solder-bath, with the endless-chain conveyer, loaded with pivoted weights to prevent the cans sliding, substantially as specified. 8th. The combination of the track with the solder-bath, conveyer-chain, upper-guide or rail, weights pivoted thereto and tension-pulleys, substantially as specified. 9th. The combination of the track, solder-bath, conveyer-chain and spring tension pulleys located near each end of the solder-bath, substantially as specified. 10th. The combination, with a track having an acid bath, or receptacle, provided with an overflow, of an upper and lower acid-tank, substantially as specified.

No. 18,213. Improvements in Door Checks.

(*Perfectionnements aux fermetures des portes.*)

George Schofield, (assignee of Francis V. Phillips,) Chicago, Ill., U.S., 29th November, 1883; 5 years.

Claim.—1st. The combination, with the door and jamb, of a bar A composed of two hinged parts, one of which is flexibly connected with the door, and the other of which is provided with an aperture in its free end, and means secured to the door-jamb, constructed to flexibly engage the said aperture, substantially as and for the purpose set forth. 2nd. The combination of a plate B provided with a button *b*, a slotted link A^1 hinged to the plate B, a slotted link A^2 hinged to said link A^1, and a button upon the door-jamb, constructed to flexibly engage the end of said link A^2, substantially as and for the purpose set forth. 3rd. The combination, with the bar A, flexibly connected with the door, and provided with an aperture a^5 in its free end, of a plate C^1, provided with a recess C^2, constructed to receive the end of the said bar A, and with a projection c, and a button C pivoted to said block C^1, and constructed to engage the end of said bar, substantially as described. 4th. The combination, with a bar A, composed of two hinged sections, one of which is flexibly connected with the door, and provided with an aperture a^5 in its free end, of a block C^1, secured to the door-frame and provided with a projection c, and stops c^1 and c^2, and a button C pivoted to said block, substantially as and for the purpose set forth.

No. 18,214. Process and Apparatus for the Reduction of Iron Ore. (*Procédé de reduction du minerai de fer et appareil pour cet objet.*)

Dexter H. Walker and Louis Durand, New York, N. Y., U. S., (assignees of Ernest Fourangin, Salibris, France,) 29th November, 1883; 15 years.

Claim.—1st. The method described of producing sponge iron from the ore, consisting in passing a current of atmospheric air through incandescent carbonaceous matter, converting the carbonic acid so produced into carbonic oxide, by passage through a stratum of carbon sufficient to that end, and finally conducting the carbonic oxide at the temperature incident upon its production through the mass of ore unheated and unmixed with carbonaceous matter, substantially as described. 2nd. The method described of producing sponge iron from the ore, consisting in passing through the mass of unheated ore unmixed with carbonaceous matter, the gases resulting from the action of the carbon upon the products of combustion, and upon the hygrometric moisture of the fuel, carbonic oxide and hydrogen, to wit: the said gases having the temperature incident upon their production, substantially as and for the purpose set forth. 3rd. The method described of producing sponge iron from the ore, consisting in passing the gases produced by injecting a current of air through incandescent mineral fuel, and thence through a stratum of carbon to produce carbonic oxide through a mass of scrap iron and carbon, and finally conducting the said gases, at the temperature incident upon their production, through the body of unheated ore unmixed with carbonaceous matter, as set forth. 4th. The method described of preparing steel from the ore, consisting in passing through a mixture of unheated sponge iron and carbon the gases produced by injecting atmospheric air into a mass of incandescent carbon, and passing it thence through a stratum of carbon sufficient to convert the carbonic acid and steam into carbonic oxide free hydrogen, the said gases having the temperature incident upon their production, substantially as set forth. 5th. The method described of preparing, at once, iron and steel from the ore, consisting in passing a current of carbonic oxide gas at the temperature incident upon its production, through a mixture of unheated sponge iron and carbon, and thence through a mass of unheated ore unmixed with carbonaceous matter, substantially as set forth. 6th. The method described of preparing, at once, sponge iron and steel from the ore, consisting in producing a current of reductive gas from mineral fuel, desulphurizing the same by transit through a mass of scrap iron and carbon, and conducting it thence through a mass of sponge iron and carbon, and finally through the mass of ore, substantially as set forth. 7th. The apparatus described, for the purposes set forth, consisting of a gas generating chamber provided with tuyeres near its base, and an opening in its side leading into the base of a second chamber, from which a lateral opening below the top of the chamber leads into the base of the reducing stack, whereby a space is left in each chamber above the exit level of the gases which pass through the series, and the contents of each chamber feed progressively downward to the zone of chemical action. 8th. The apparatus described, for the coincident reduction of ore to the state of sponge, and the conversion of sponge into steel, consisting of one or more gas generating chambers having tuyeres near the base and lateral openings *b*, leading into the base, or bases, of one or more converting chambers C C^1, the said converting chambers having lateral openings c, leading into the base of the reduction stack B, each chamber having a central wedge-shaped wall at its base adapted to discharge the contents laterally. 9th. In combination with the gas generating chamber and the chamber C C^1 having lateral openings below their tops, whereby the gases traverse but a portion of each chamber, the reduction stack B having a central wedge-shaped wall at its base, adapted to discharge the contents of the stack into extended cooling tubes F, which terminate in air excluding taps G, as set forth.

No. 18,215. Embroidering Attachment for Sewing Machine. (*Machine à coudre faisant la broderie.*)

The White Sewing Machine Company, (assignee of George W. Baker,) Cleveland, Ohio, U.S., 29th November, 1883; 5 years.

Claim.—1st. In a sewing machine embroidering attachment, a rotating reciprocating spiral shaft operated from the needle-bar, and carrying a looper provided with prongs adapted to engage the embroidering thread, one of the said prongs being provided with an eye, substantially as set forth. 2nd. In a sewing machine embroidering attachment, a spiral shaft provided with a looper having prongs adapted to loop the embroidering thread and to allow the needle of the machine to pass through the loop thereof, said shaft being operated from the needle bar through the agency of a bell-crank operating levers that embrace the looper shaft, substantially as set forth. 3rd. In a sewing machine embroidering attachment, the combination, with a looping device, of a spiral shaft and slotted levers embracing the shaft, the one rotating the shaft intermittently and alternately in opposite directions, and the other intermittently reciprocating the shaft endwise, substantially as set forth. 4th. In a sewing machine embroidering attachment, a bell-crank actuated from the needle-bar and provided with a combined circular and cam slot, adapted to give intermittent reciprocating motion to the looper, and adapted to hold the looper from end movement, in either direction, when not actuated by the cam, substantially as set forth. 5th. In a sewing machine embroidering attachment, a bell-crank actuated by the needle-bar, and provided at one end with a long slot, in combination with a pivoted and slotted lever, the slotted end of the lever embracing the flatted and spiral portion of the looper shaft, whereby the looper shaft is intermittently rotated but alternately in opposite directions, substantially as set forth. 6th. The combination, with the bell-crank H, as described, of the levers L and K, and the shaft E, and the looping device, substantially as shown and described.

No. 18,216. Improvements in Egg Cases.

(*Perfectionnements aux boites à œufs,*)

James Emery, Saint John, N.B., 29th September, 1883; 5 years.

Claim.—1st. A folding egg carrier and shipping case, divided into two compartments by movable partition, fastened and secured substantially as and for the purposes set forth. 2nd. A folding egg carrier and shipping case, with ends and sides provided with hinges and hooks for folding inwards, substantially as and for the purposes set forth. 3rd. A folding egg carrier and shipping case, with handles cut in ends and grooves for receiving and holding the cover spring clasp, substantially as and for the purposes set forth. 4th. A folding egg carrier and shipping case, with cover secured at corners, with braces and spring clasps on inside ends of cover set and secured in grooves, substantially as and for the purposes set forth. 5th. A folding egg carrier and shipping case, to be folded when empty and secured by cover and spring clasps, substantially as and for the purposes set forth.

No. 18,217. Sash-Holder and Lock.

(*Arrête et fermeture de croisée.*)

George Hasenpflug, (assignee of Frank L. Rosentreter,) Cleveland, Ohio, U.S., 29th November, 1883; 5 years.

Claim.—1st. The combination of the rocking flanged or ribbed biting-plate E and the bar e cast entire, the knife-edge cam C and the flanges c c, applied on a spindle and receiving the cam C, all constructed and adapted to operate substantially in the manner and for the purposes described. 2nd. The combination of the lock-plate E, operated by the double cam C c, the latter mounted upon a spindle and turning therewith, and the spindle carrying a bevel wheel F, suitably cased in boxing G, bevel-pinion *h*, on a spindle H, held in a suitable bearing in the boxing G, and knob I secured to said spindle H, all substantially as and for the purpose set forth.

No. 18,218. Electric Arc Lamp.

(*Lampe électrique à arc.*)

The Hamilton Industrial Works Company, (assignee of Thomas L. Kay.) Hamilton, Ont., 29th November, 1883; 5 years.

Claim.—1st. The clamp D, in combination with armature C, and eccentric, or cam E, bracket F and holder I, substantially as and for the purpose set forth. 2nd. The eccentric, or cam E, in combination with clamp D and holder I, substantially as and for the purpose set forth. 3rd. The bracket F and holder I, in combination with the eccentric or cam E and clamp D, substantially as and for purpose set forth. 4th. The combination of the frame L and tube M, as a guide for rod J, substantially as and for the purpose set forth.

No. 18,219. Improvements in Button Fasteners. (*Perfectionnements aux queues des boutons.*)

John Bowden, (assignee of Oliver W. Ketchum,) Toronto, Ont., 29th November, 1883; 5 years.

Claim.—1st. As an improved button-fastener, a metallic clip formed by a prong A, having a head B which will not pass through the material pierced by the prong, in combination with a button C having a hole with a central bridge *a* around which the prong A is bent, substantially as and for the purpose specified. 2nd. As an improved button-fastener, a metallic clip formed by the prongs A projecting from, and at right angles to the head B, in combination with a bridge *a*, formed as described, in the button C, substantially as and for the purpose specified.

No. 18,220, Improvement in Thill Couplings. (*Perfectionnement des armons de limonières.*)

Irving Elting, Poughkeepsie, N, Y., U. S., 30th November, 1883; 5 years.

Claim.—1st. In a thill coupling, the combination of a solid head C, and straight, hollow, cylindrical spindle E, attached to the clip, with a thill-iron D, having a correspondingly straight cylindrical opening, a spool-shaped packing H, of leather, rubber, or similar substance, with flanges I, and a solid combined bolt, head and nut, to be screwed into the hollow of the spindle E, substantially as set forth. 2nd. The combination of a solid head-piece and straight, hollow, cylindrical spindle E having a bevelled point, so as to preserve a straight firm draft, and yet admit the springing over the straight spindle, of a closely packed thill-iron D, whose sides are protected by a spool-shaped packing H, with a solid combined bolt, head and nut, which does not receive the wear of the thill-iron, and might be lost without lessening the strength and safety of the coupling, all substantially as set forth.

No. 18,221. Improvements in Horse Collar Fasteners. (*Perfectionnements aux attache-colliers de cheval.*)

William Hayton, Canandaigua, N. Y., U. S., 30th November, 1883; 5 years.

Claim.—A frame having one or more cross bars attached to one end of the divided collar, in combination with a hooked lever having cams, and a solid hook attached to the other end of a collar, said cam adapted to strike against one of the cross-bars of the frame, as described.

No. 18,222. Improvement in Washing Machines. (*Perfectionnement des machines à laver.*)

Joseph Van Norman, Tilsonburg, Ont., 30th November, 1883; 5 years.

Claim.—1st. In a washing machine, the combination of concave B, with rubbing block C, rollers D D, and levers E and G, substantially as and for the purpose set forth. 2nd. In a washing machine and presser, the combination of tub K, having grooves L and beam M, with screw O and follower P, substantially as and for the purposes set forth.

No. 18,223. Improvement in Boots and Shoes. (*Perfectionnement dans les chaussures.*)

John B. Farrar, Bradford, Mass., U.S., 30th November, 1883; 5 years.

Claim.—That improvement in the manufacture of boots and shoes, which consists in splitting a piece of sole leather to remove entirely from its grain face, thus forming an inner sole and a grain infaced covering, or lining sole, then uniting the inner sole with the upper and the outer sole, and re-applying upon the face of the inner sole the said grain-faced covering sole, cementing the same to the inner sole to cover the stitches, or fastening therein, leaving the grain face of the said cover-sole upper-most, all as described.

No. 18,224. Improvements in Seeding Machines. (*Perfectionnements aux semoirs.*)

John F. Keller, Martinsburg, W. V., U. S., 30th November, 1883; 5 years.

Claim.—1st. A drill-boot having a slot B in the front part thereof, and adapted to carry the vertically adjustable hoe C, substantially as and for the purposes set forth. 2nd. The described drill-boot A, having a vertical slot B in the front thereof, a flat bearing surface A1, for the nut E, and an inwardly projecting shoulder F, whereby the falling grain is directed past said nut, which having a free space around the same, is accessible for adjustment and removable. 3rd. In a drill-boot, a vertical slot in the front thereof, in combination with the bearing surface A1 and the nut E. 4th. In a drill-boot, a vertical slot in the front part thereof, in combination with the bolt D, nut E and shoulder J, all substantially as described and for the purpose set forth.

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

105. G. CALCOTT, 2nd 5 years of No. 9316, from the 5th day of November, 1883. Improvements on extension scaffolds, 2nd November, 1883.

106. B. F. WEYMAN. 2nd 5 years of No. 9317, from the 5th day of November, 1883. Improvements on snuff packages, 2nd November, 1883.

107. S. TOLES, 2nd 5 years of No. 9315, from the 5th day of November, 1883. Improvements in cross cut saws. 2nd November, 1883.

108. J. B. ROYCE, 2nd 5 years of No. 9325, from the 5th day of November, 1883. Improvements on harvesters, 2nd November, 1883.

109. P. K. DEDERICK. 2nd 5 years of No. 9404, from the 22nd day of November, 1883. Improvements on a machine for baling hay and other loose material, 2nd November, 1883.

110. D. BROOKS, 2nd 5 years of No. 9443. from the 5th day of December, 1883. Improvements in insulating clothed telegraph wires and in preparing and laying subterraneous and subaqueous telegraph cables, 5th November, 1883.

111. N. YAGN, 2nd and 3rd 5 years of No. 17,998, from the 26th day of October, 1888. Improvements in apparatus for utilizing the power of flowing water in rivers for mechanical purposes, 5th November, 1883.

112. H. W. SHEPARD, 2nd 5 years of No. 16,888, from the 26th day of February, 1888. Improvements in coating metals to prevent oxidation, 10th November, 1883.

113. E. WILLIS, 2rd 5 years of No. 9360, from the 19th day of November, 1883. Cement, 12th November, 1883.

114. W. McNAMARA and L. MERTENS, 2nd 5 years of No. 9454, from the 10th day of December, 1883. Improvements on hydrants, 12th November, 1883.

115. T. F. BUTTERFIELD, 2nd 5 years of No. 9398, from the 22nd day of November, 1883. Improvements on steam generators, 15th November, 1883.

116. A. F. NAGLE, 2nd 5 years of No. 9409, from the 22nd day of November, 1883. Improvements on pressing bricks and concrete blocks, 15th November, 1883.

117. J. DEWRANCE, 2nd 5 years of No. 9389, from the 22nd day of November, 1883. Improvements on cocks, 16th November, 1883.

118. T. DARK, 2nd 5 years of No. 9437, from the 3rd day of December, 1883. Improvements on receivers and stench traps for street sewers, 19th November, 1883.

119. J. FENSOM, 2nd 5 years of No. 9394, from the 22nd day of November, 1883. Improvements on hoisting machines, 20th November, 1883.

120. A. L. EDWARDS, 2nd 5 years of No. 9393, from the 22nd day of November. 1883. Improvements on shirts. 22nd November, 1883.

121. W. S. COLWELL, 2nd and 3rd 5 years of No. 10,809, from the 16th day of January, 1885. Improvements on motor and apparatus for utilizing it, 22nd November, 1883.

122. W. S. COLWELL. 2nd and 3rd 5 years of No. 10,815, from the 16th day of January, 1885. Improvements on motors for locomotives and other enginery, 22nd November, 1883.

123. W. S. COLWELL. 2nd and 3rd 5 years of No. 10,820, from the 17th day of January, 1885. Improvements on motor and apparatus for utilizing it, 22nd November, 1883.

124. J. C. COVERT, 2nd and 3rd 5 years of No. 10,429, from the 8th day of September, 1884. Improvements in clamping and securing rope ends, 29th November, 1883.

125. E. B. EDDY, 2nd 5 years of No. 9670, from the 18th day of February, 1883. Improvements on machines for heading friction matches, 29th November, 1883.

126. H. McKENZIE, 2nd 5 years of No. 13,359, from the 2nd day of September, 1886. Improvements on spark-arresters, 29th November, 1883.

127. M. H. ASH, 2nd and 3rd 5 years of No. 16,286, from the 14th day of February, 1888. Improvements in the bolsters of bob sleighs, 30th November, 1883.

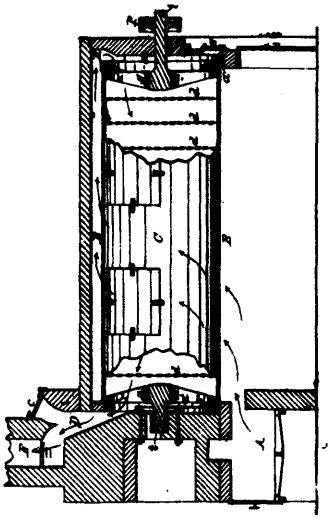
128. T. MURPHY, 2nd 5 years of No. 9649, from the 11th day of February, 1884. Improvements in boiler furnaces, 30th November, 1883.

THE

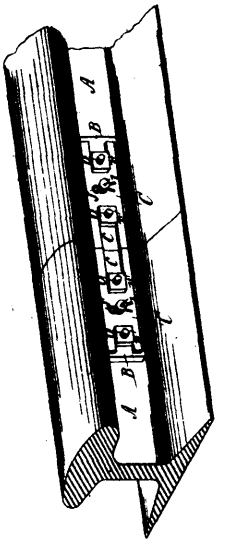
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

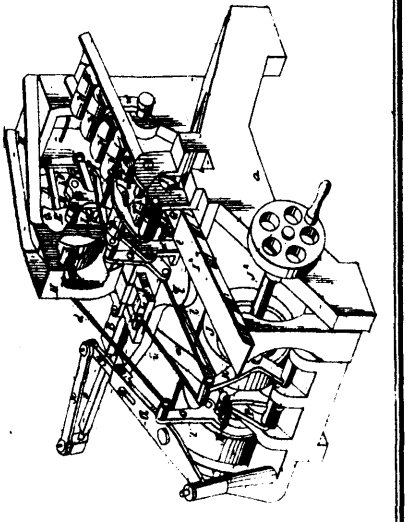
Vol. XI. DECEMBER, 1883. No. 12.



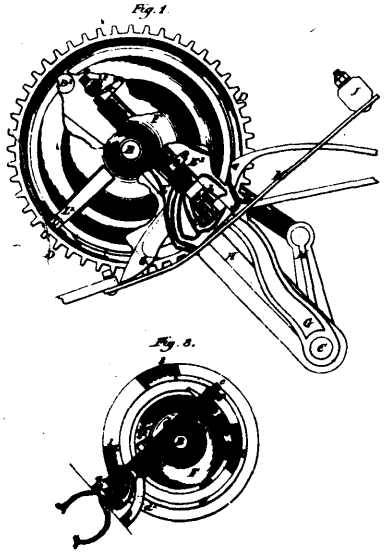
18006 Breer's Apparatus for Desiccating Animal Matter.



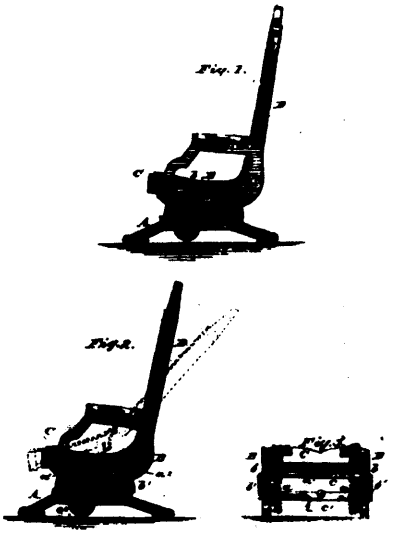
18007 Couvrette's Nut Lock.



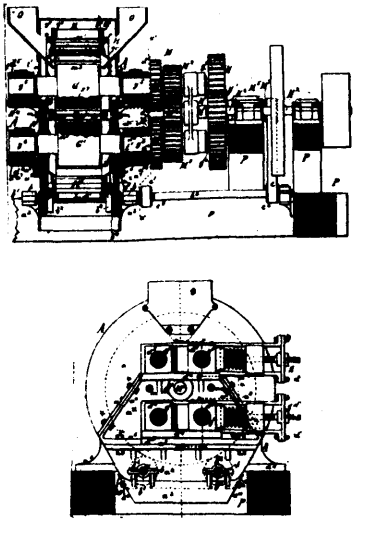
18009 Jensen's Can-Filling Machine.



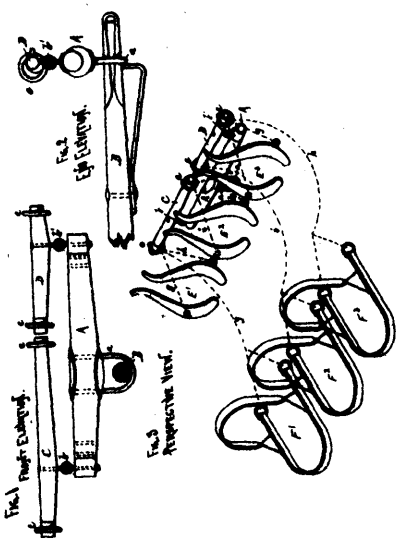
18010 Burson's Improvements in Grain Binders.



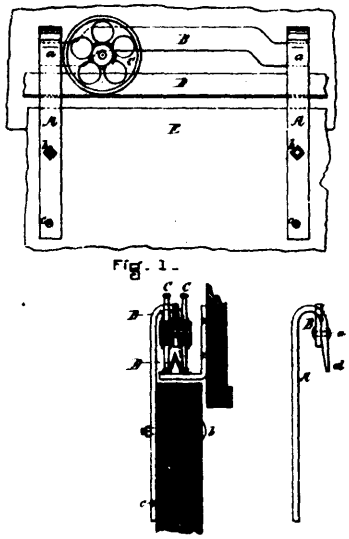
18011 Fuller's Rocking and Reclining Chair.



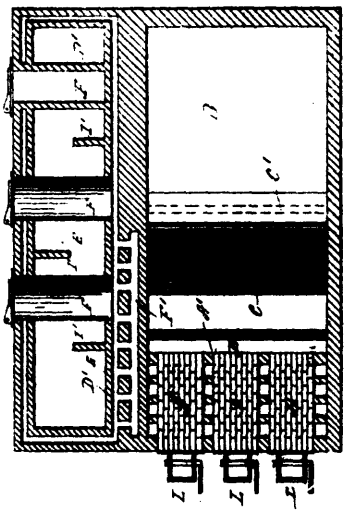
18012 Gates' Pulverizing Machine.



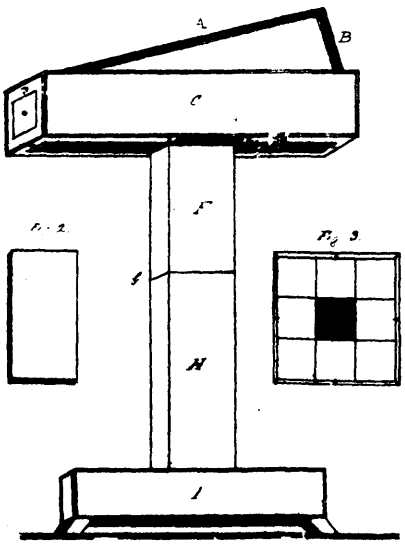
18013 Hollister's Improvement in Neck Yokes.



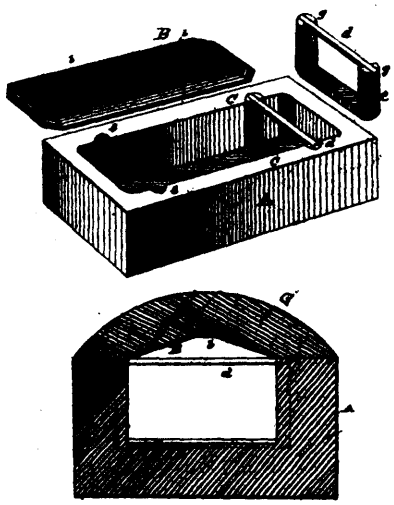
18014 Moody's Door Hanger.



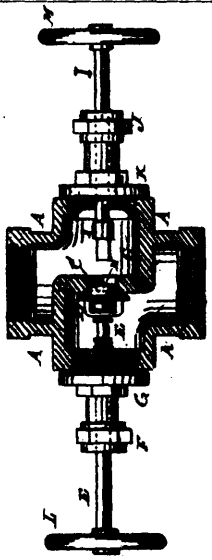
18015 McNair's Reverberatory Gas Furnace.



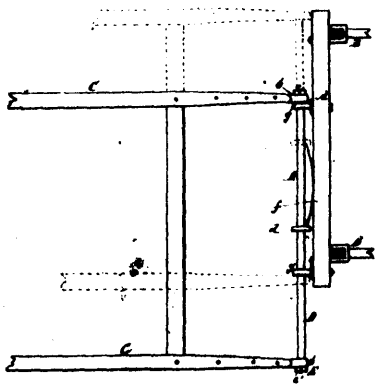
18016 White's Adjustable Table and Desk.



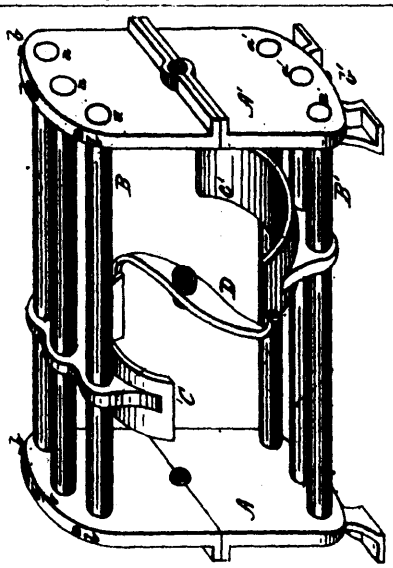
18017 Logan's Artificial Stone Grave Vault.



18018 Case's Grinding Attachment for Valves.

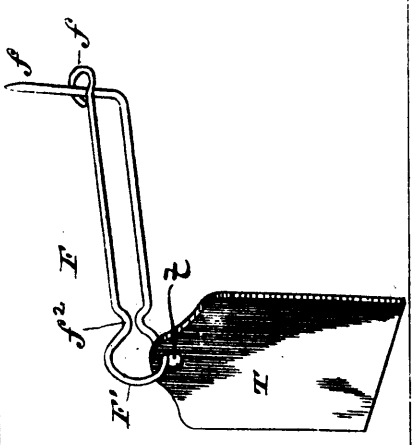


18019 Lusk's Devices for Shifting Thills.

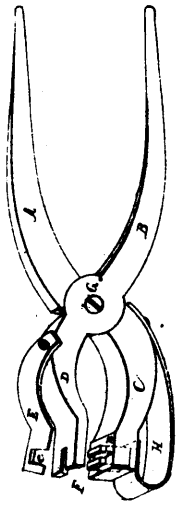


18020 Ball's Dynamo-Electric Machine.

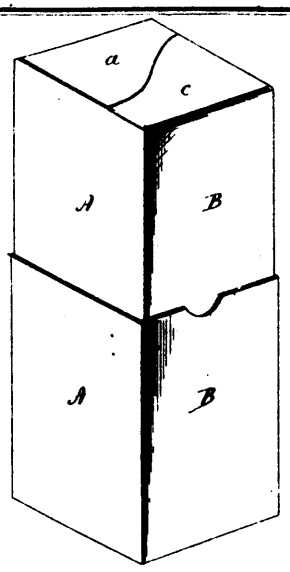
18021 Robinson's Carpet Stretcher.



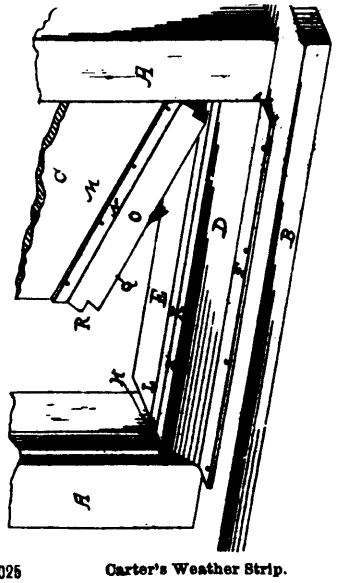
18022 Alshuler's Tag Fastener



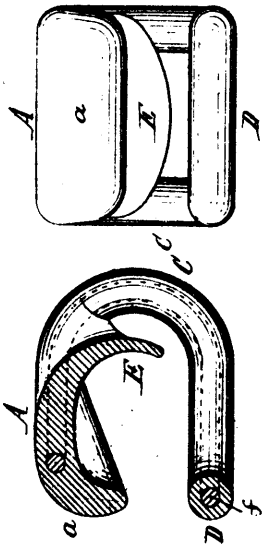
18023 Ham's Machine for Attaching Buttons.



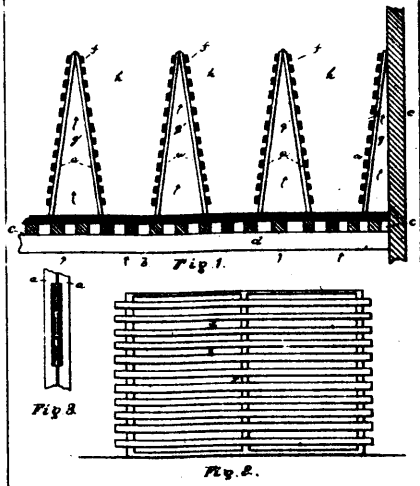
18024 Colburn's Improvements in Paper Boxes.



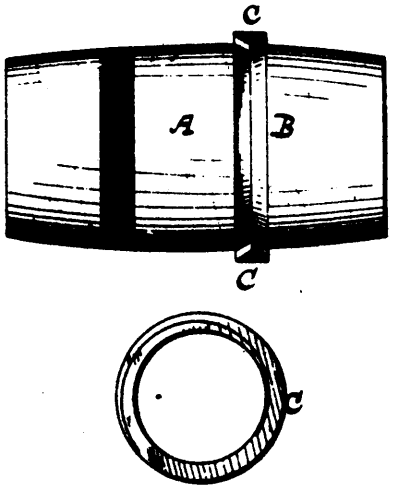
18025 Carter's Weather Strip.



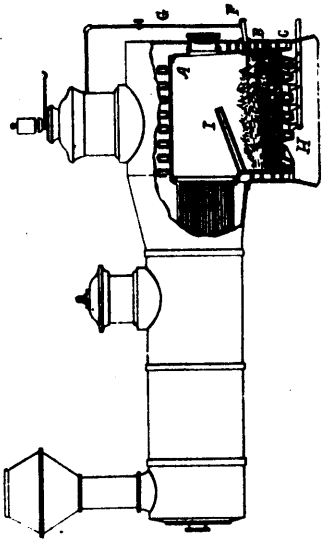
18026 Turver's Pessary.



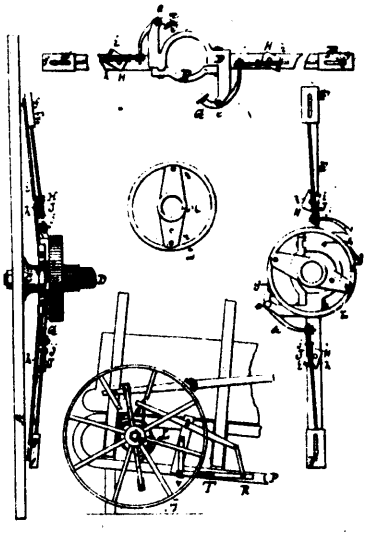
18027 Filkin's Hop Drier.



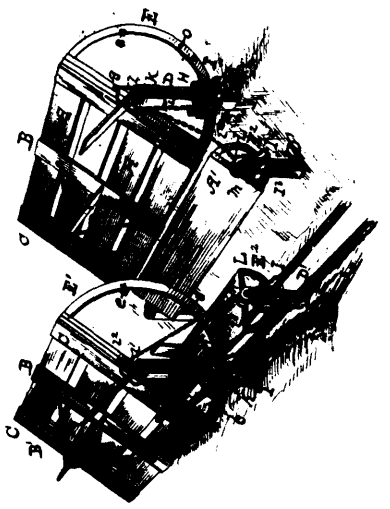
18028 Brown's Hub for Vehicle Wheels.



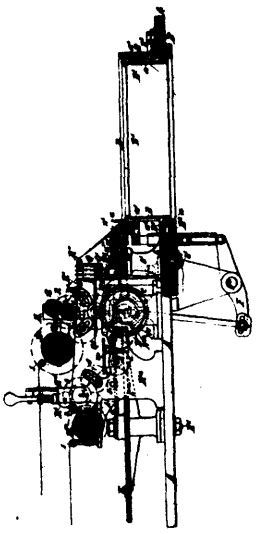
18029 Sloper's Steam Boiler Furnace.



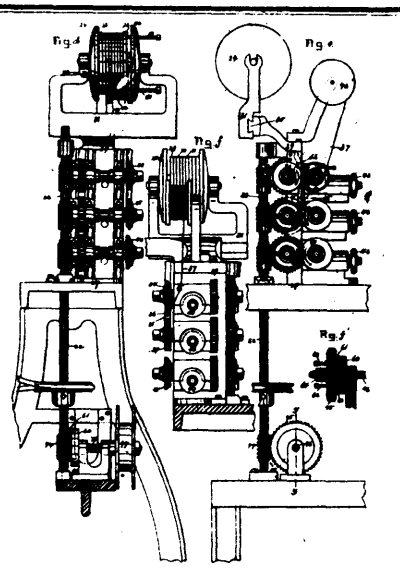
18030 Rouse's Horse-Power Regulator.



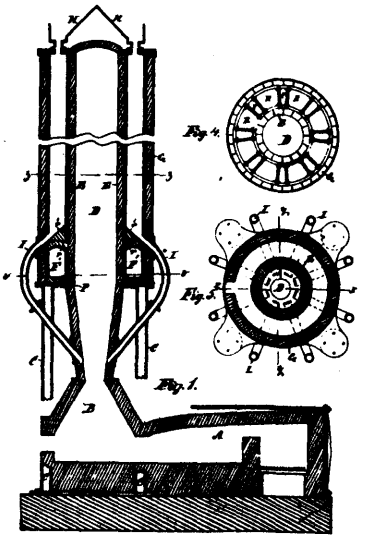
18031 Rice's Device for Clearing Railway Tracks.



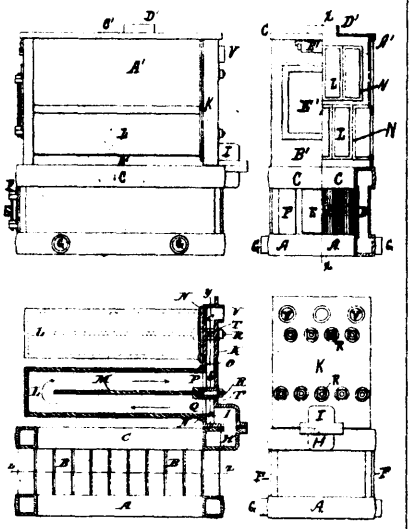
18032 McNary's Knitting Machinery.



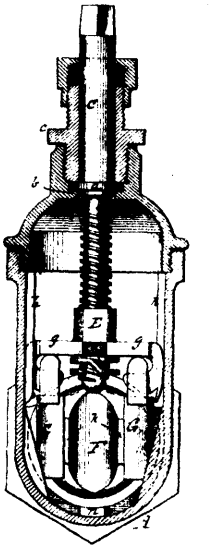
13033 Bacon's Mechanism for Forming Tubular Wire.



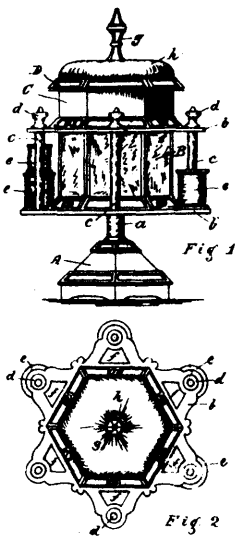
18034 Wilson's Deoxidizing Furnaces.



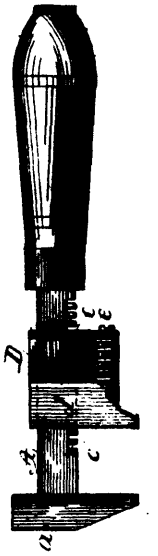
18035 Spence's Sectional Boiler.



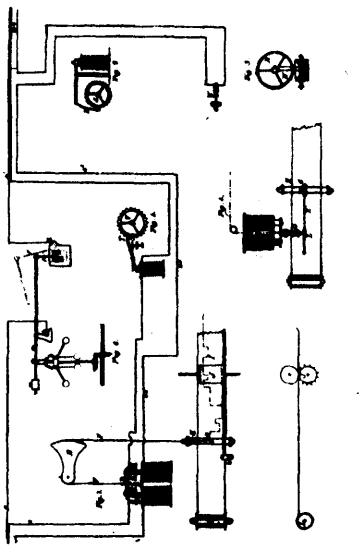
18036 Galvin's Gate Valve.



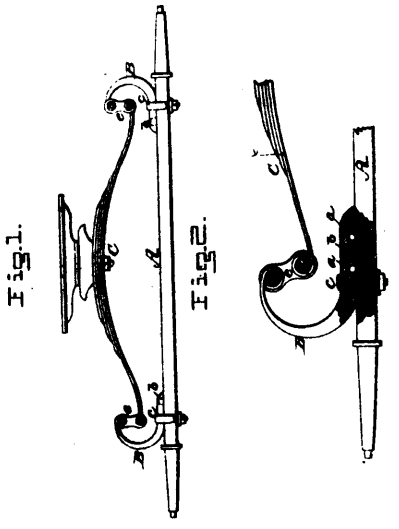
18037 Fournier's Lady's Work Stand.



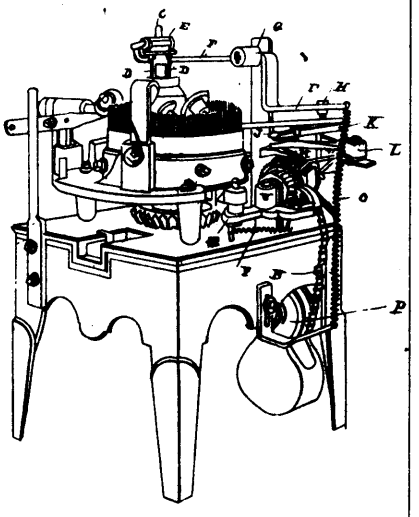
18038 Rotermund's Wrench.



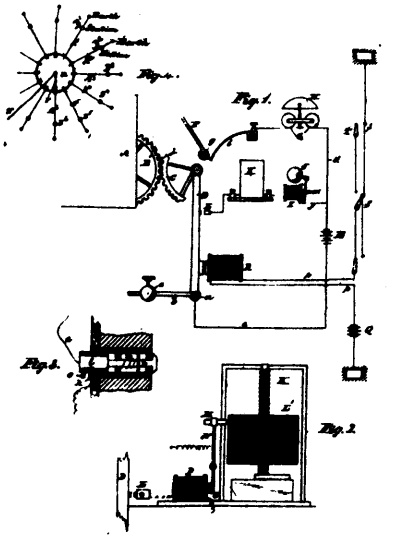
18039 Beeman, Taylor & King's Electric Current Meter.



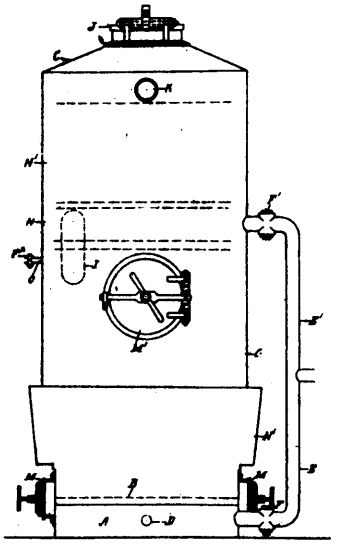
18040 Huffstetter's Spring Vehicle.



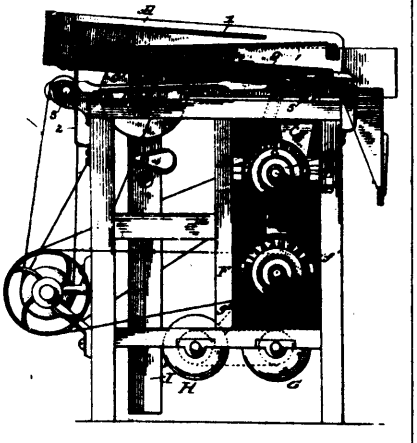
18041 Clay's Knitting Machine.



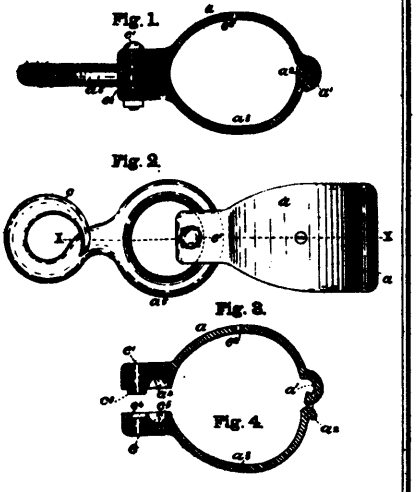
18042 Ahearn's Watchman's Detector.



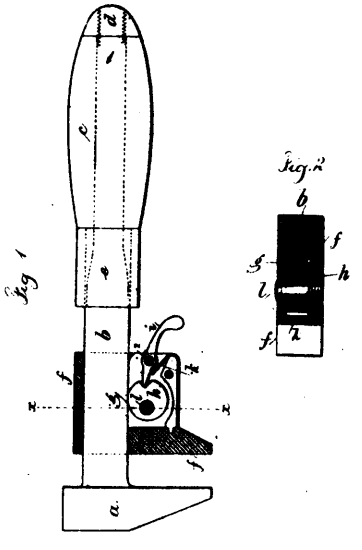
18043 English's Gas Generator.



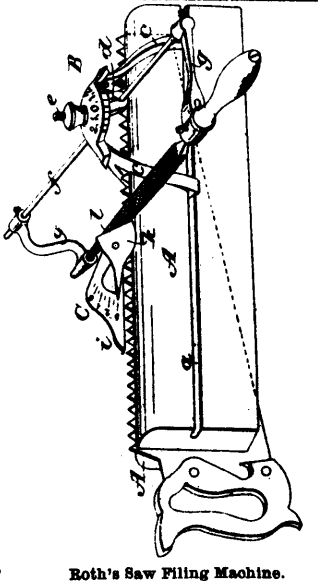
18044 Burkholder's Grain Cleaner.



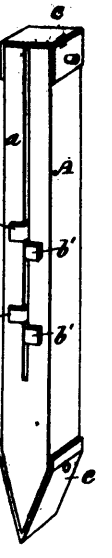
18045 Spohr's Single Tree Clip.



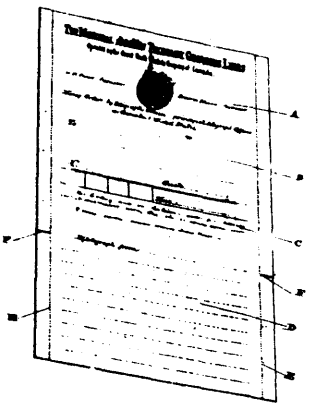
18046 Atwater's Wrench.



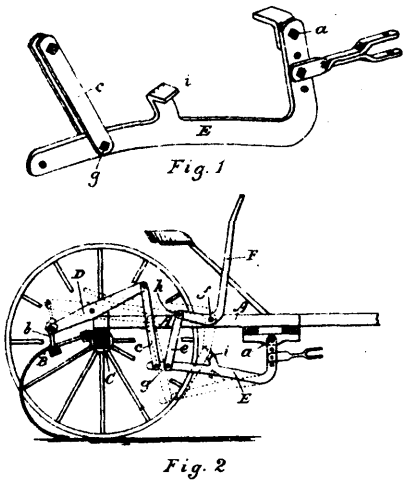
18047 Roth's Saw Filing Machine.



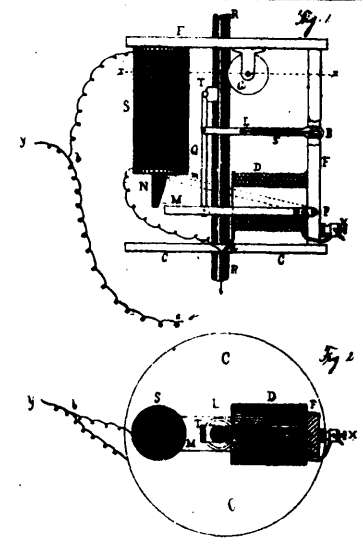
18048 Haven's Fence Post.



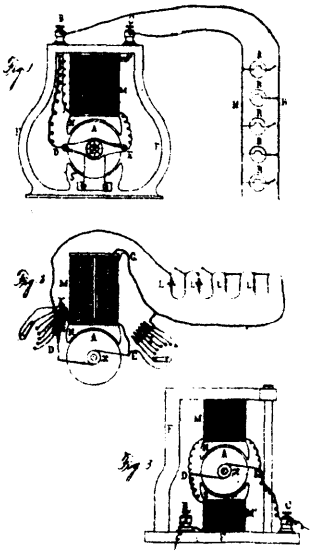
18049 Cox's Combined Envelope and Letter Sheet.



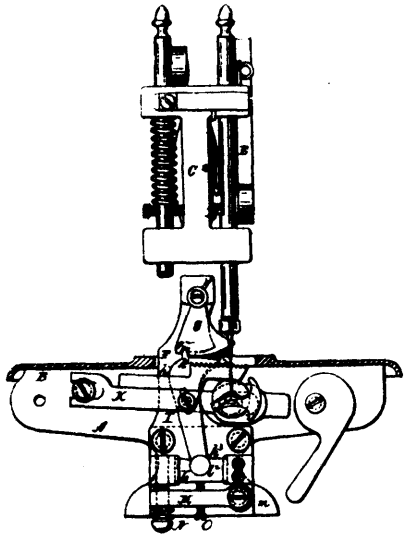
18050 Hébert's Horse Hay Rake.



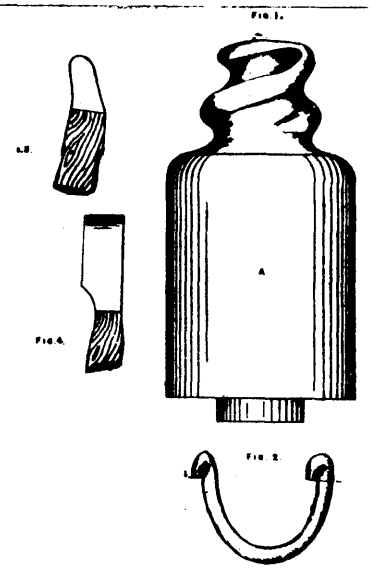
18051 Thomson's Electric Arc Light.



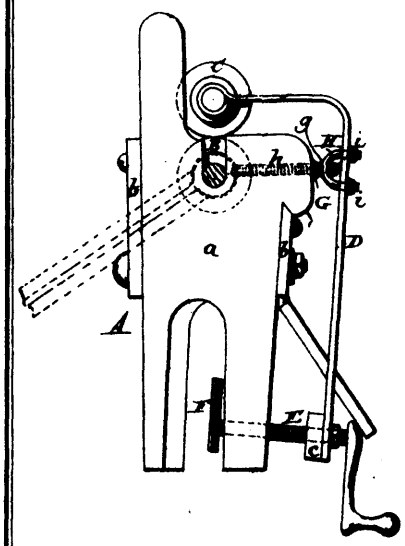
18052 Thomson's Electric Current Regulator.



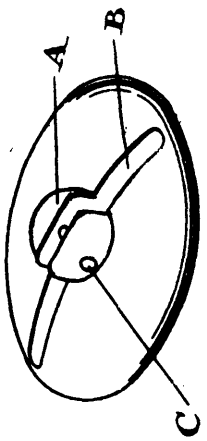
18053 Dewees' Trimming Attachment for Sewing Machines.



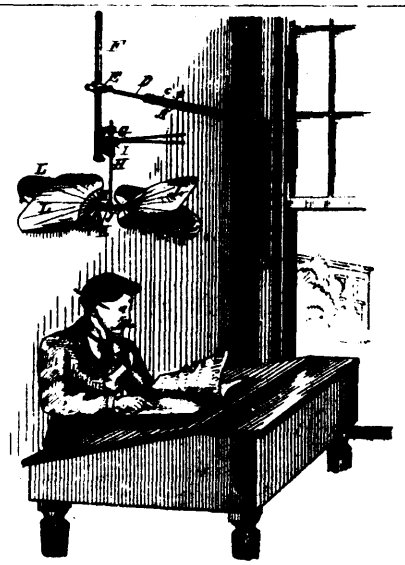
18054 Lewis' Insulator for Telegraph Wire.



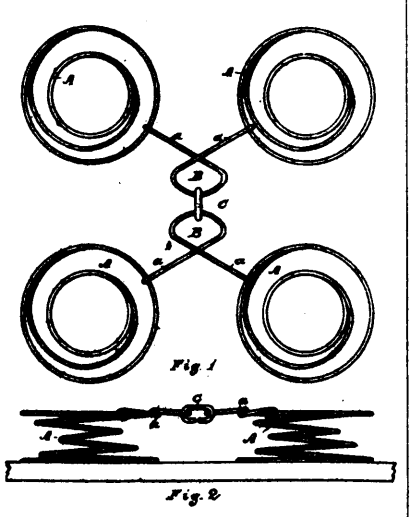
18055 Althouse's Improvements in Clothes Wringers.



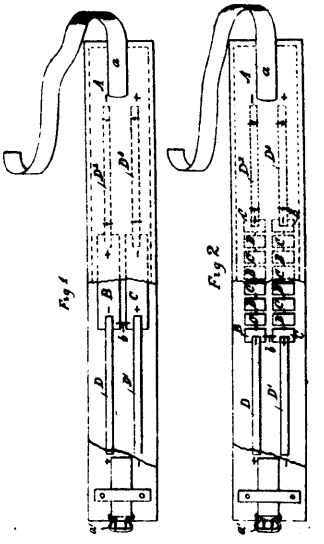
18056 Roschman's Improvements in Buttons.



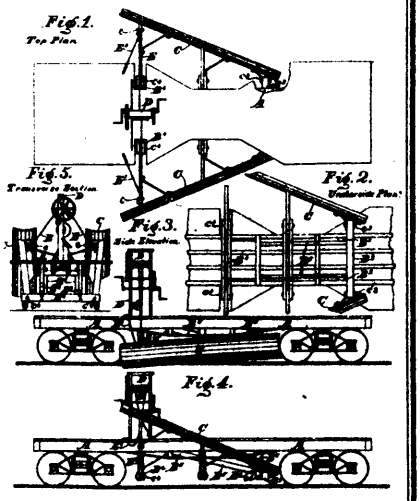
18057 Wright's Improvements in Rotary Fans.



18058 Butterfield's Bed Spring Connection.

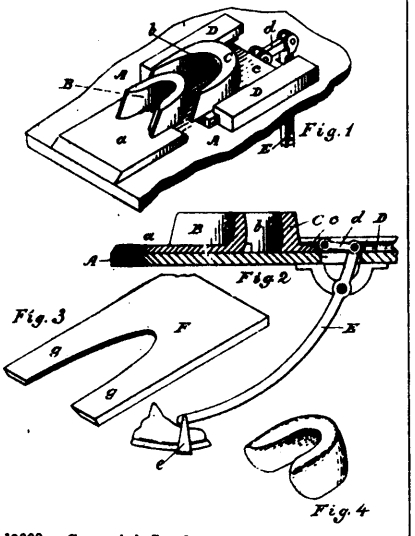


18059 Paddock's Improvements in Electro-Magnetic Belts.

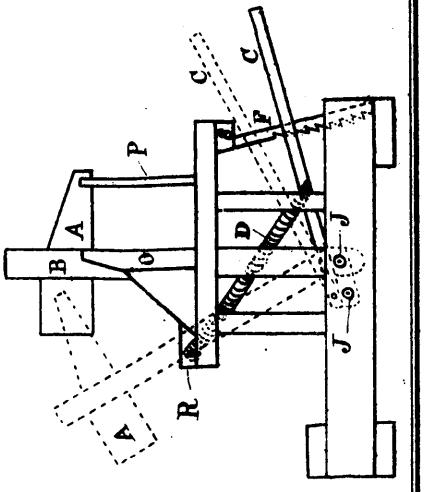


18060 Harris & Carter's Improvements in Railway Scrapers and Levellers

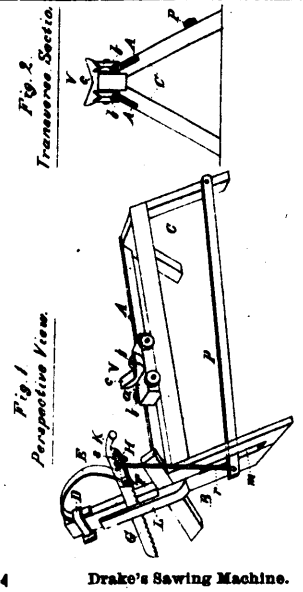
18061 Guillaume's Improvements in Telephone Conductors.



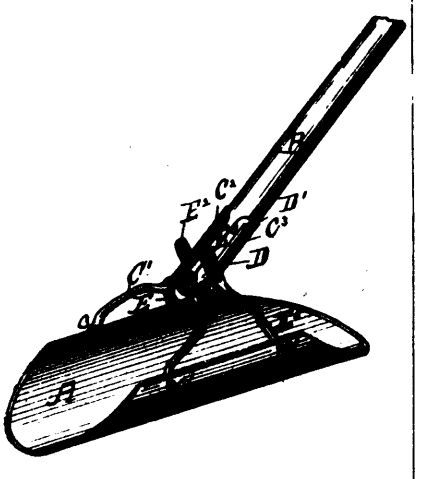
18062 Germain's Implement for making Heel Stiffeners.



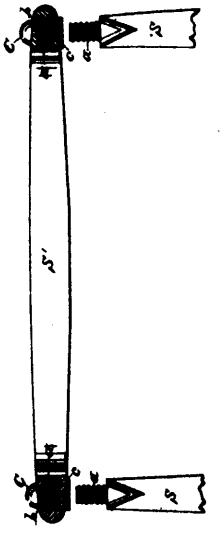
18063 Parker's Machine for Packing Staves.



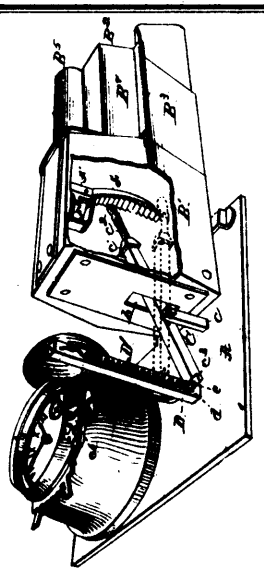
18064 Drake's Sawing Machine.



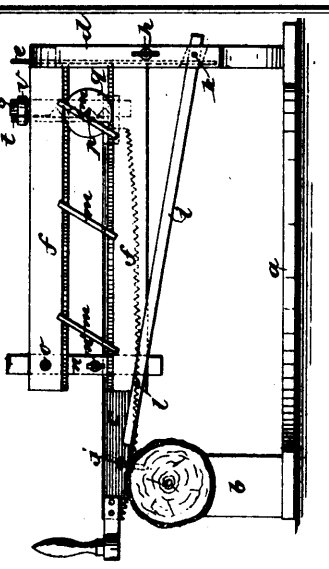
18065 Chambard's Ditching Shovel.



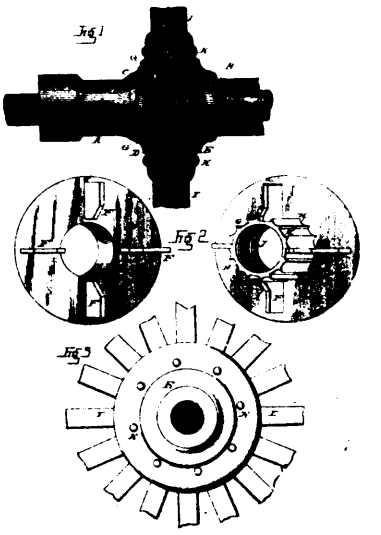
18066 Line's Coupling for Vehicle Springs.



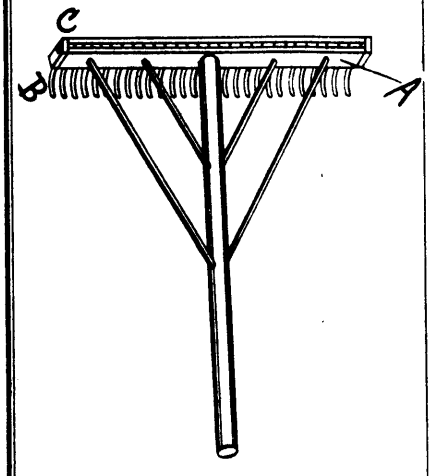
18067 **Russell's Improvements in Fire-Lighters.**



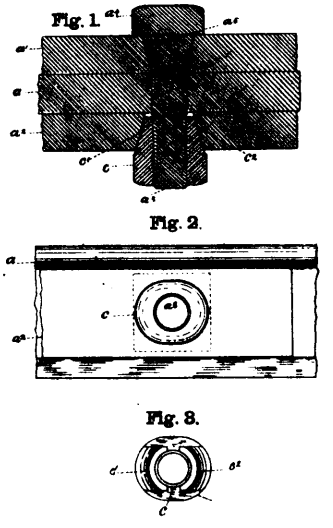
18068 **Schooley's Cross-Cut Saw Frame.**



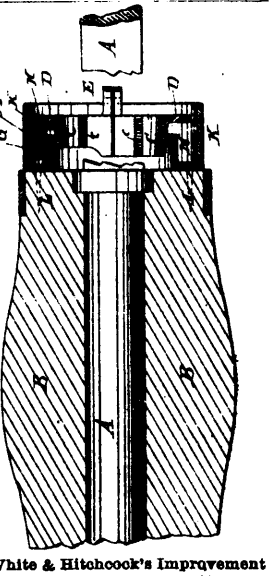
18069 **Newman's Improvements in Wheel Hubs.**



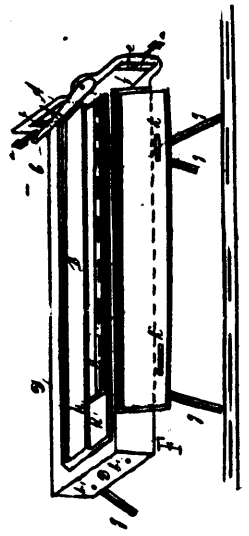
18070 **Drew's Improvement in Hand Rakes.**



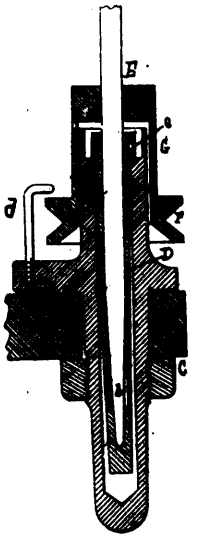
18071 **Blighton's Improvements in Bolt Locks.**



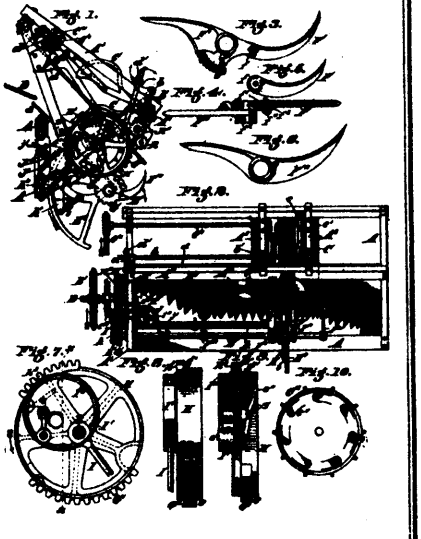
18072 **White & Hitchcock's Improvement in Sand Bands.**



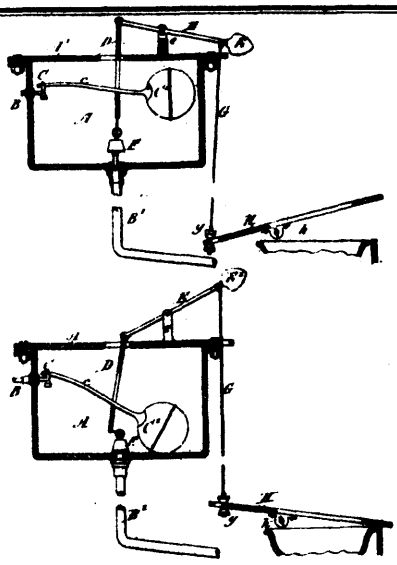
18073 **Rusland's Eave Gutter Forming Machine.**



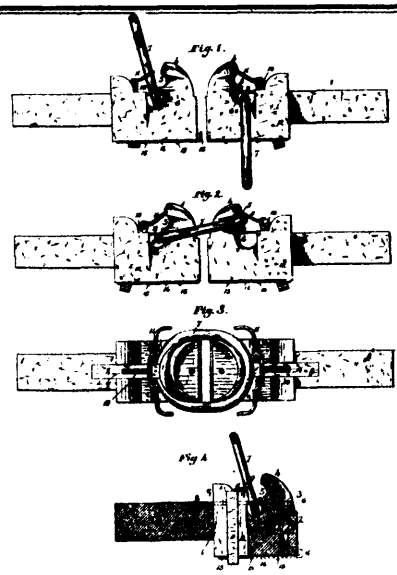
18074 **Sherman's Spinning Spindle and Bearing.**



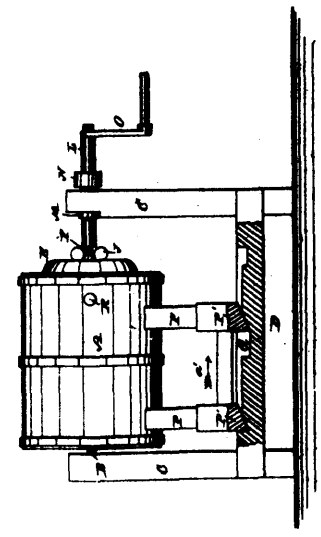
18075 **Brown's Improvements in Grain Binders.**



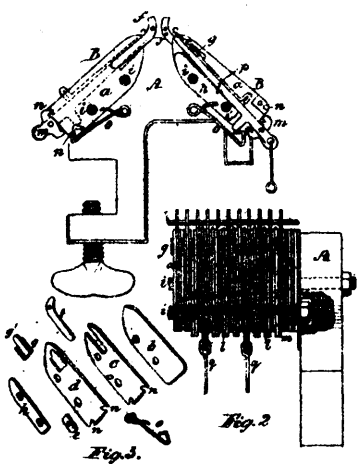
18076 Prosser's Apparatus for Operating Self-Flushing Closets.



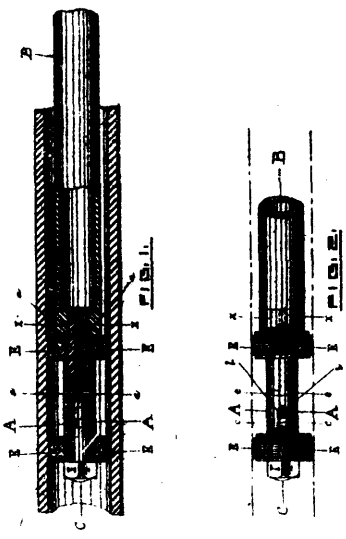
18077 Cross' Improvements in Car Couplings.



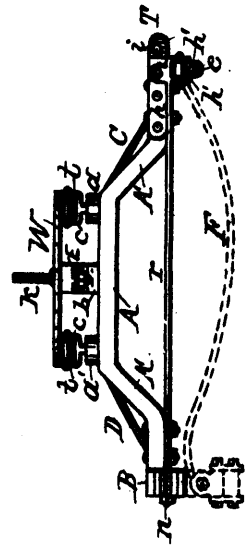
18078 Hay's Improvement in Churns.



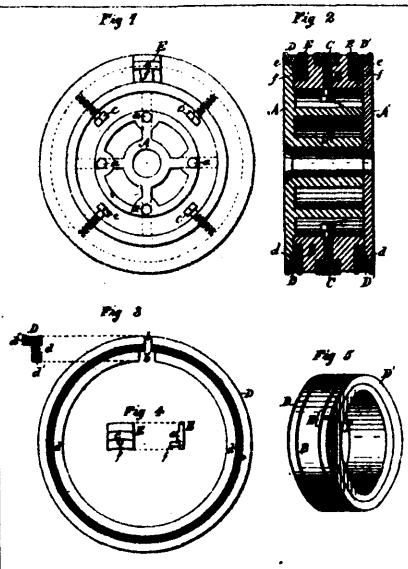
18079 Lamb's Improvements in Knitting Machines.



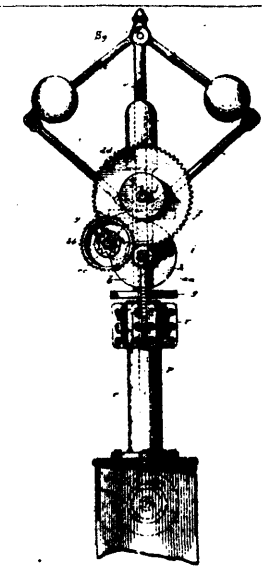
18080 Davis' Improvements in Gun Cleaners.



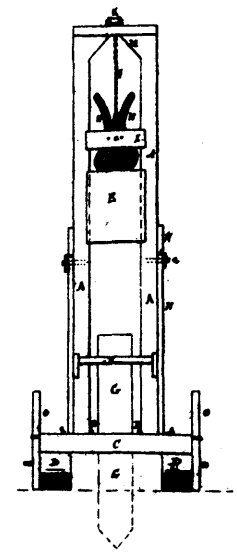
18081 Grogan's Platform Waggon Spring.



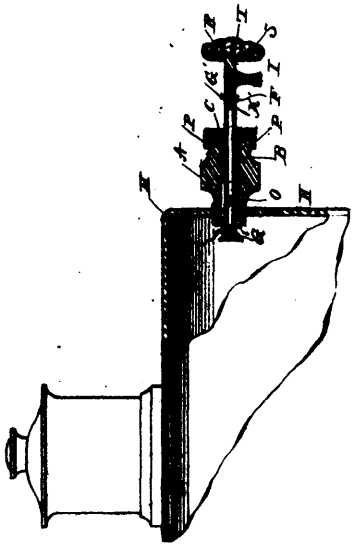
18082 St. John's Improvements in Piston Packings.



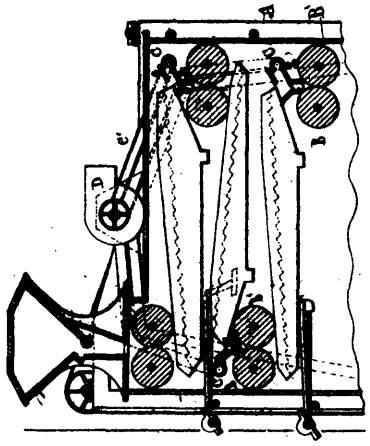
18083 Williams' Regulator for Engine Governors.



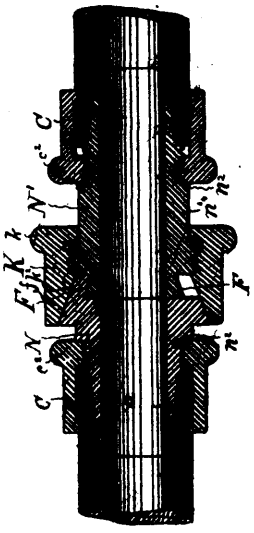
18084 Black's Machine for Driving Posts.



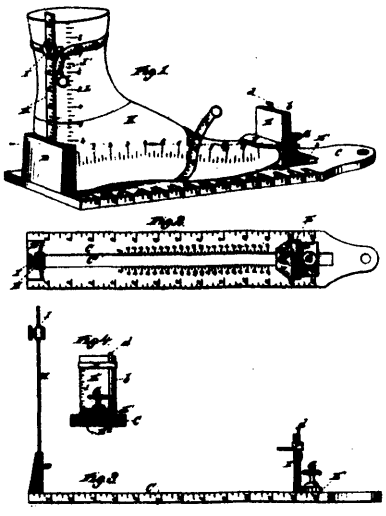
18085 Tousey's Improvements in Gauge Cocks.



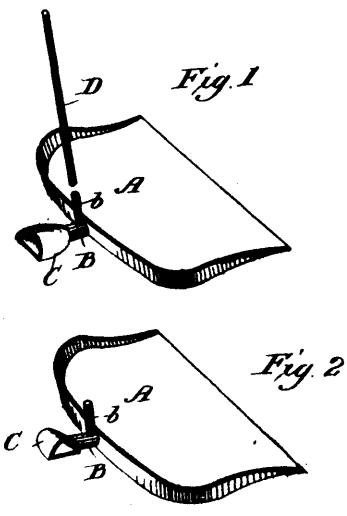
18086 Gilbert's Improvements in Roller Mills.



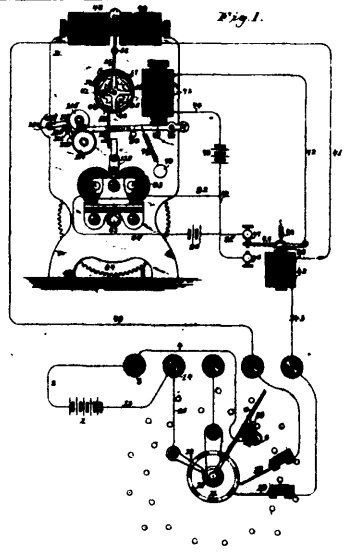
18087 Génin's Improvements in Hose Couplings.



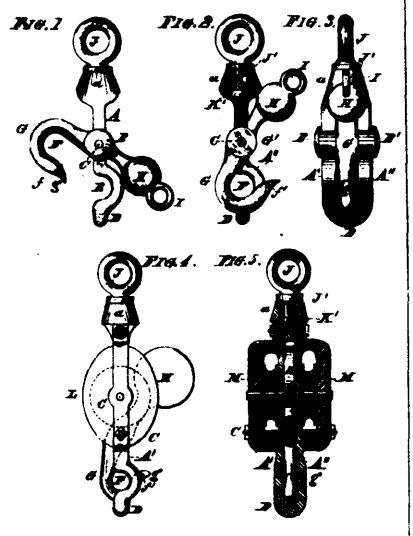
18088 Schaefer's Measure for Shoemakers.



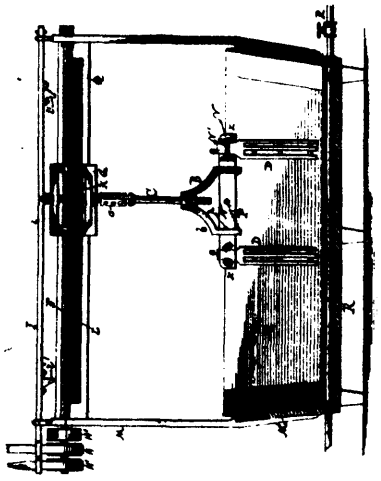
18089 Moss' Improvements in Dust Pans.



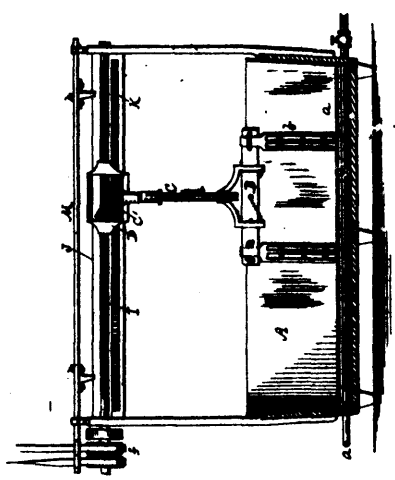
18090 Hoevenburgh's Electro-Telegraphic Printing Instrument.



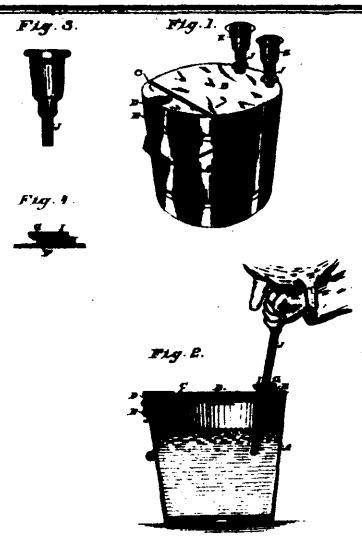
18091 Leirmann's Improvements in Swivel Hooks.



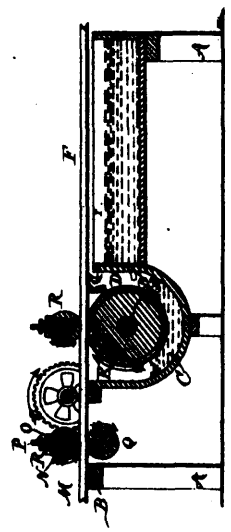
18092 Jenks' Cheese Making Apparatus.



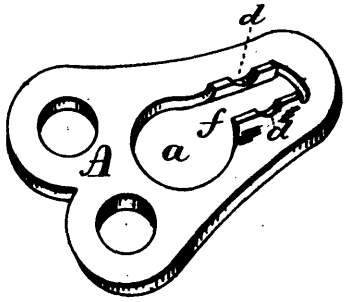
18093 Jenks' Cheese Making Apparatus.



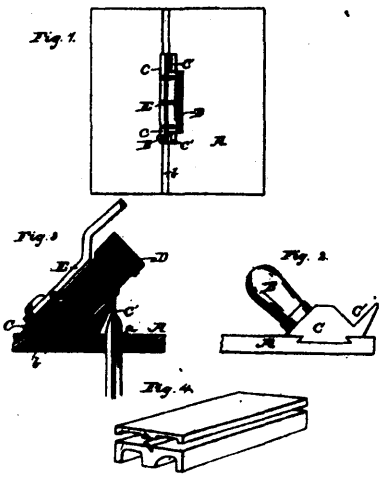
18094 Thatcher & Barnhart's Means for Protecing Milk from Contact with Foreign Matters while in transit from the teat of the animal to a closed vessel.



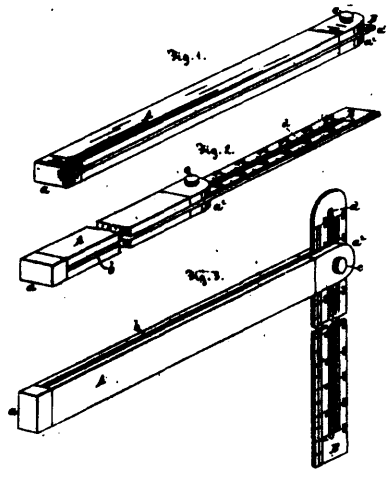
13095 Rabbe's Improvements in Glueing Machines.



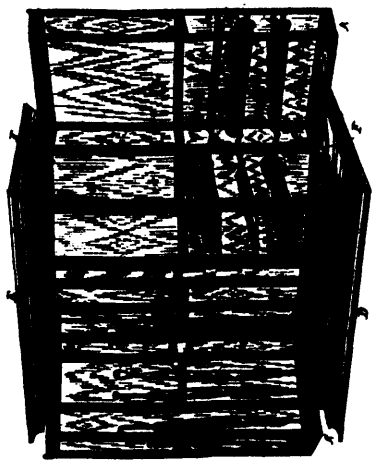
18096 Cohn's Improvements in Corset Clasps.



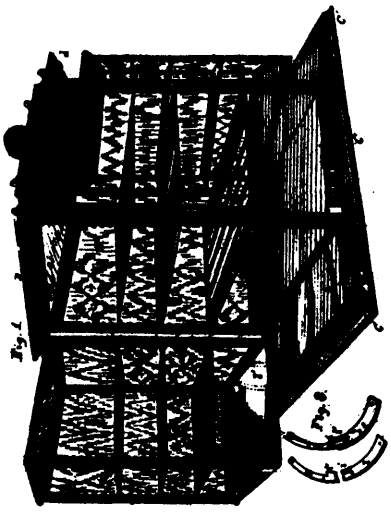
18097 Huke's Machine for Cutting Oblique Slots.



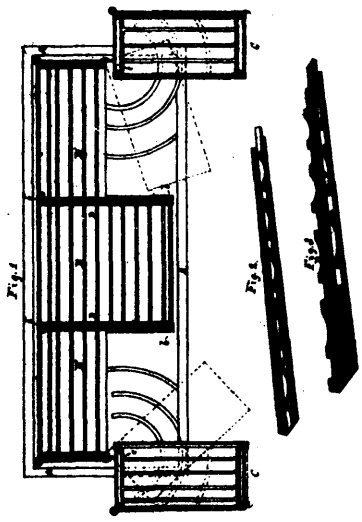
18098 Thornburg's Combined Bevel, Protractor and Measure.



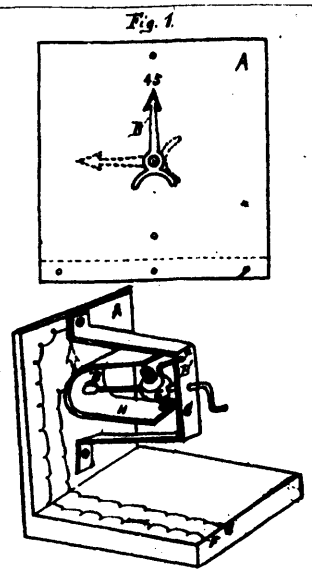
18099 Henrich's Improvements in Show Cases.



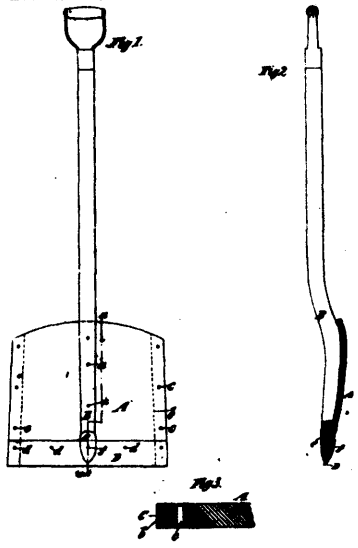
18100 Henrich's Improvements in Show Cases.



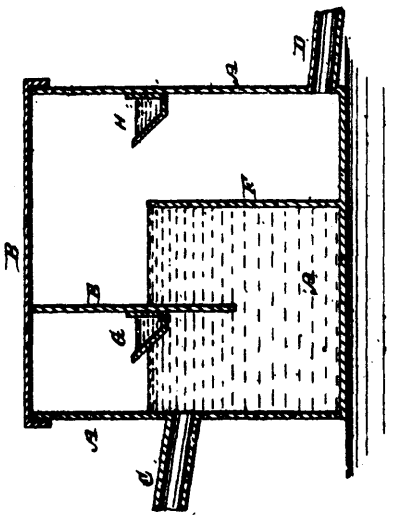
18101 Henrich's Improvements in Show Cases.



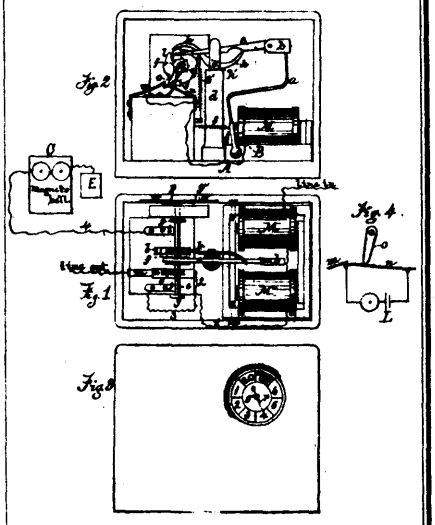
13102 Tanner's Electrical Annunciator.



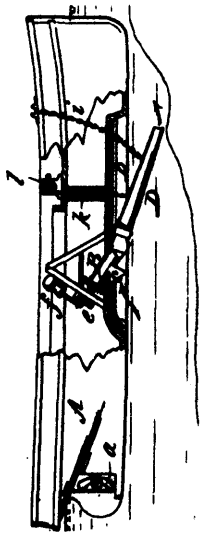
18103 Cole's Improvement in Malt Shovels.



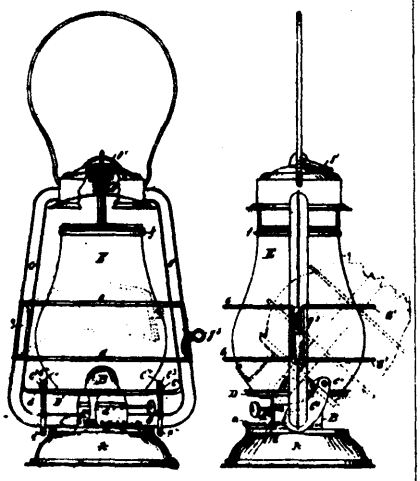
18104 Williams' Improvements in Sewer Traps.



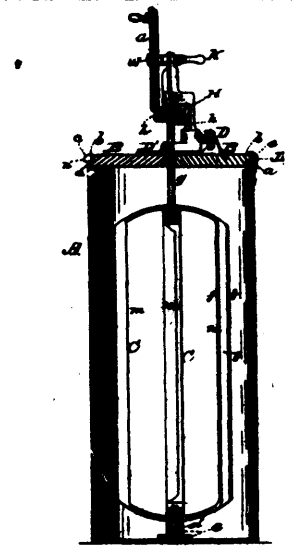
18105 Cary's Electric Signalling Apparatus.



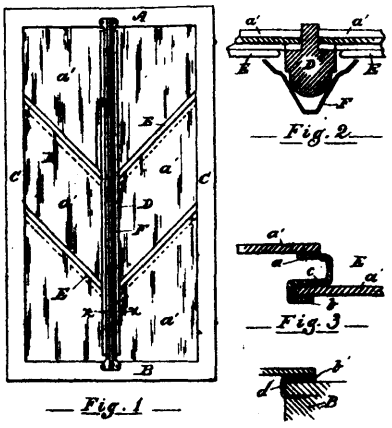
18106 Cornelius & Turner's Apparatus for Removing Sand Bars.



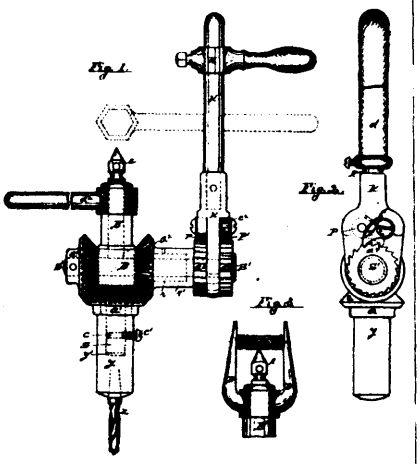
18107 Phillips' Improvements in Lanterns.



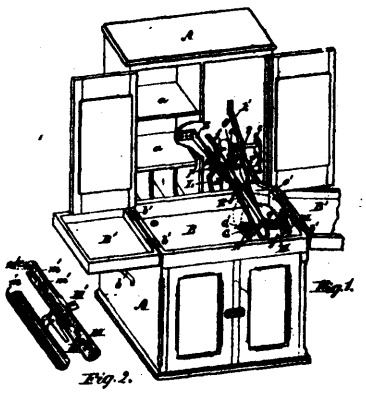
18108 Stebbins' Improvements in Churns.



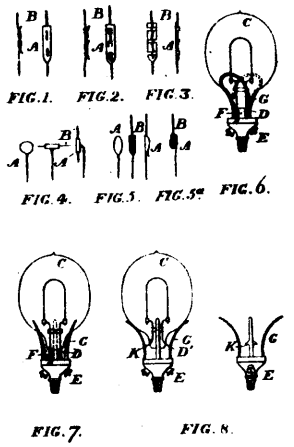
18109 Polito's Conservatory and Greenhouse Glass Roof.



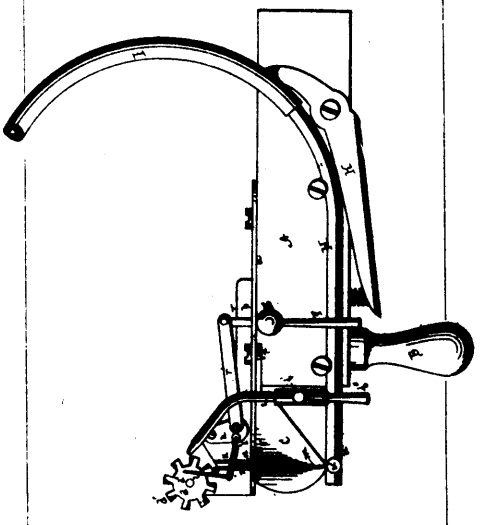
18110 Sandiford's Improvements in Ratchet Drills



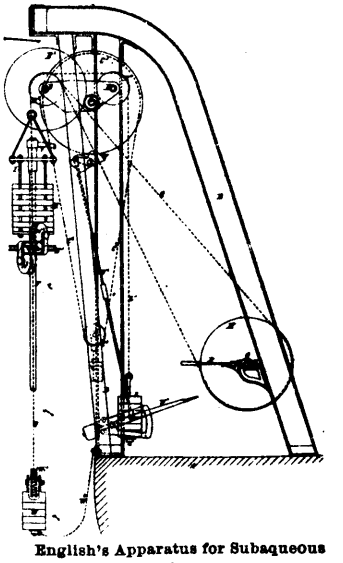
18111 Wheeler's Dish Washing Machine.



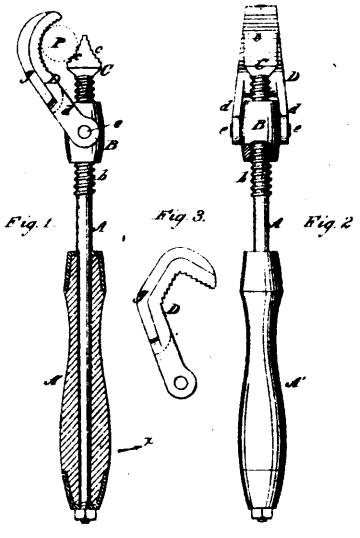
18112 Woodhouse & Rawson's Improvements in Electric Lighting, &c.



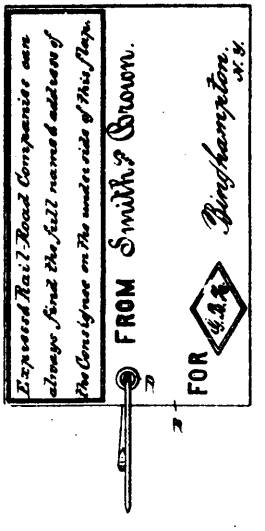
18113 Walkup's Improvements in Paint Distributors.



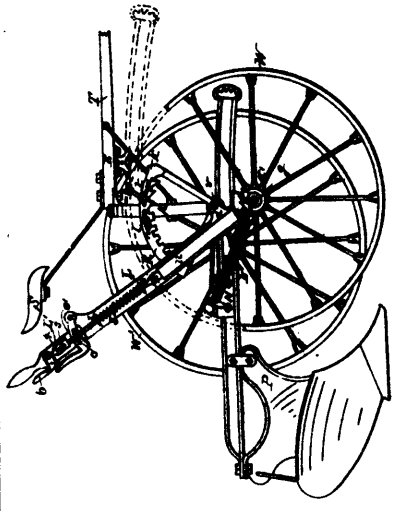
18114 English's Apparatus for Subaqueous Boring.



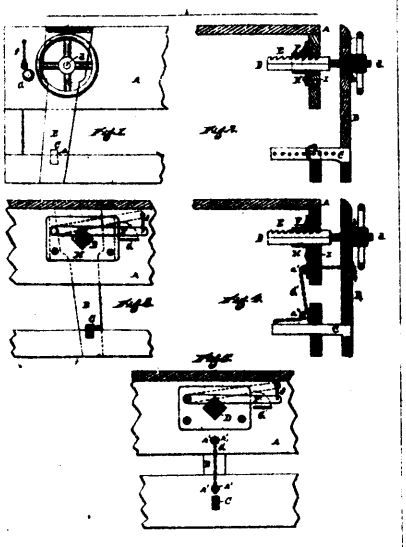
18115 Taylor's Improvements in Pipe Wrenches.



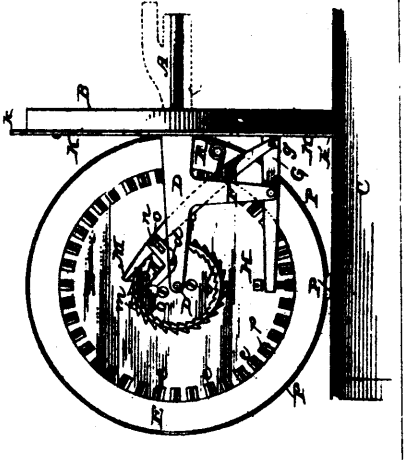
18116 Dunham's Combined Tag and Envelope.



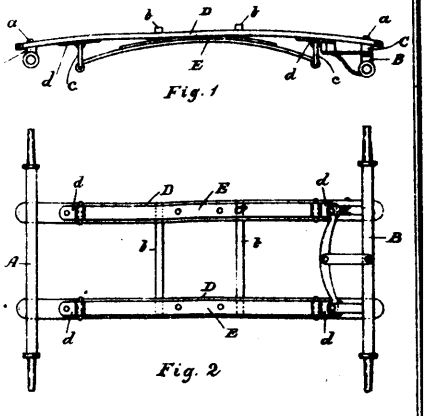
18117 Wiard & Bullock's Improvement in Sulky Ploughs.



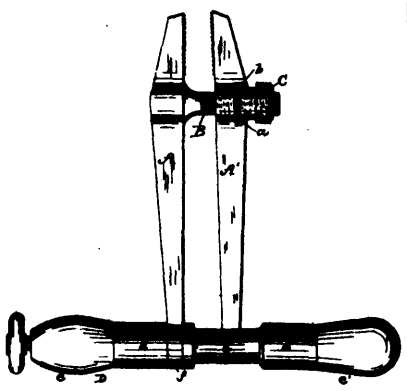
18118 Cloud's Improvements in Bench Vises.



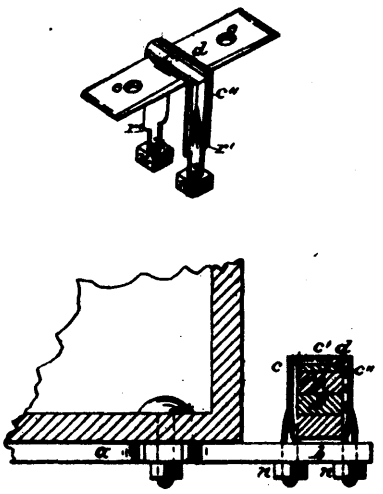
18119 Bushorr's Improvements in Numbering Machines.



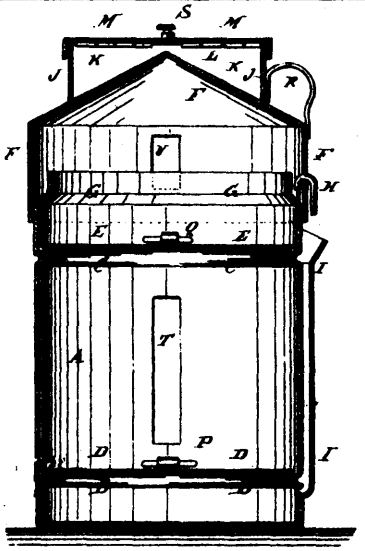
18120 McCormick's Improvement in Vehicle Springs.



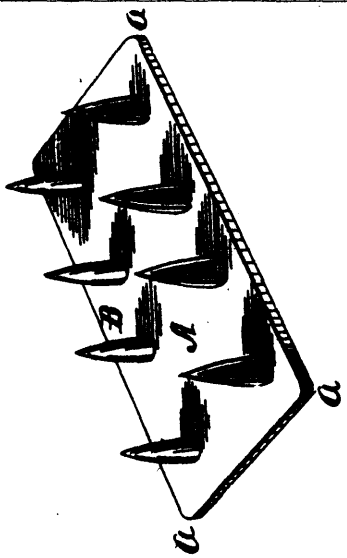
18121 Bailey's Hand Vise and Wrench.



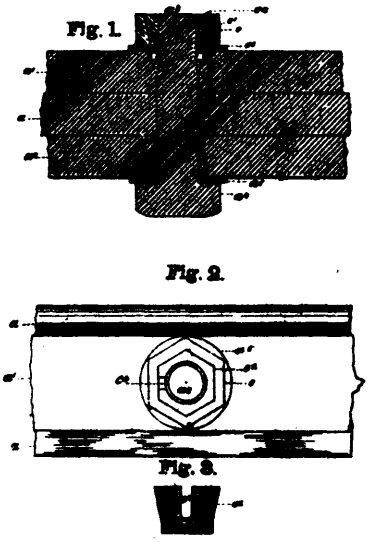
18122 Line's Improvements in Vehicle Springs.



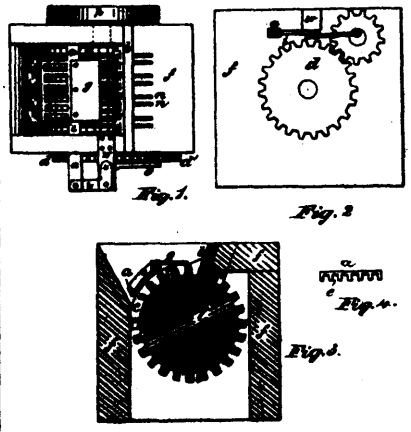
18123 Johnson's Improvements in Cooking Steamers.



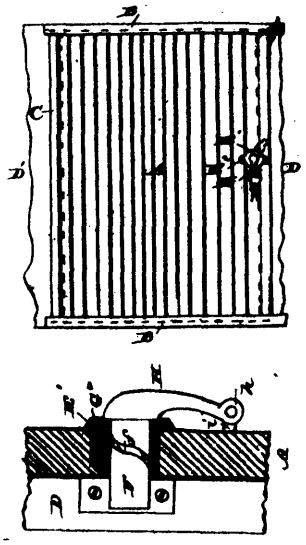
18124 Hart's Improvements in Belt Fasteners.



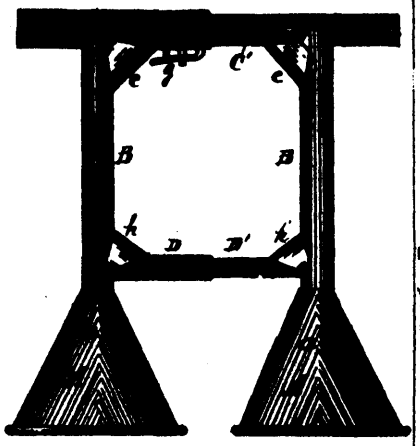
18125 Blighton's Improvements in Nut Locks.



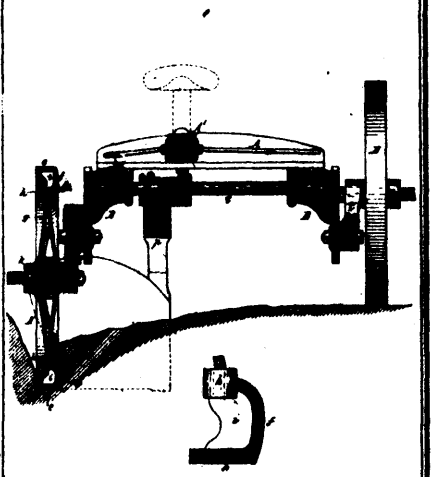
18126 Phelps' Grain Cutting Machine.



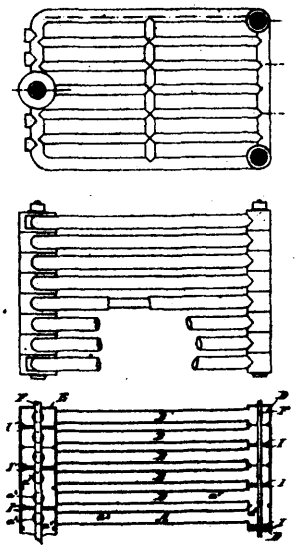
18127 Johnson's Improvements in Door Bolts.



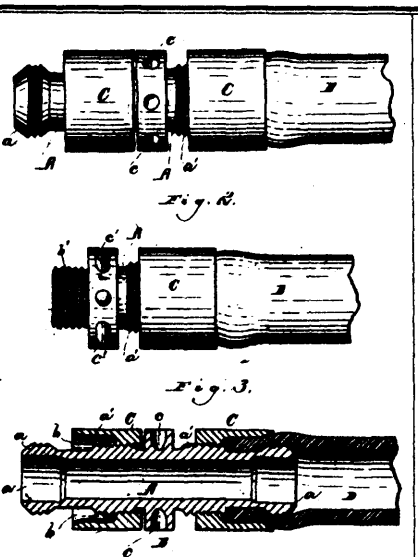
18128 Mowery's Improvements in Clothes Pounders.



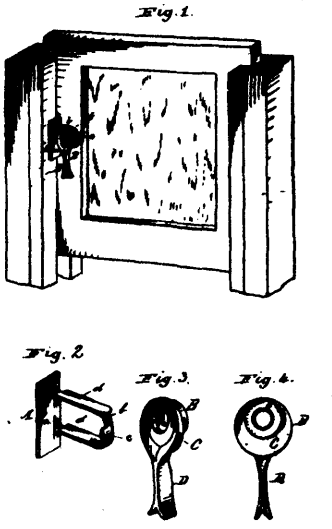
18129 Wiard's Improvements in Sulky Ploughs.



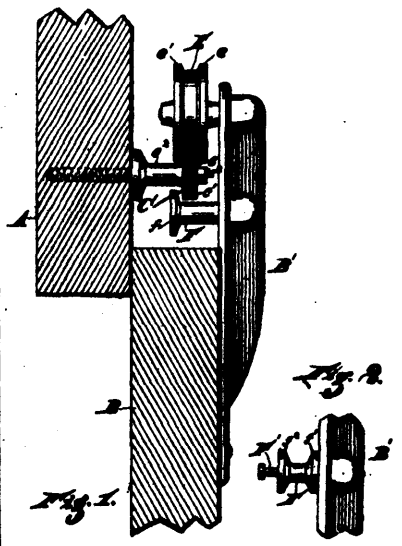
18130 Bellavance's Horizontal Sectional Boiler.



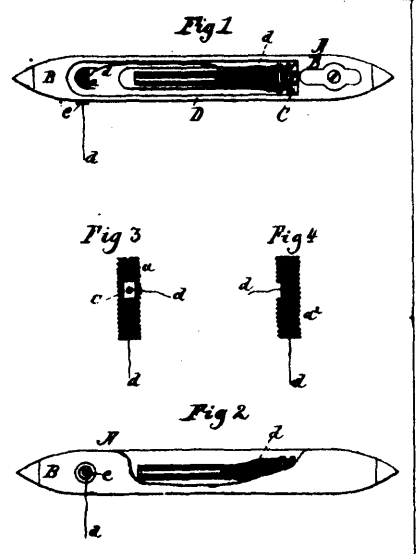
18131 Chadwick's Improvements in Hose Couplings.



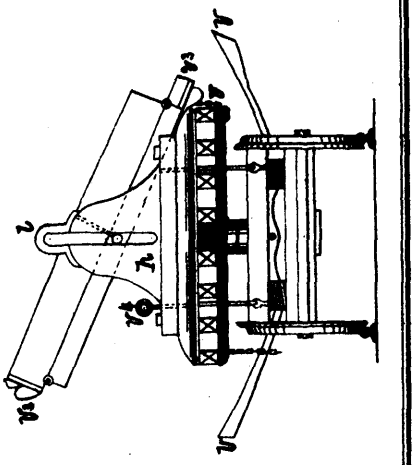
18132 Shepard's Improvements in Sash Fasteners.



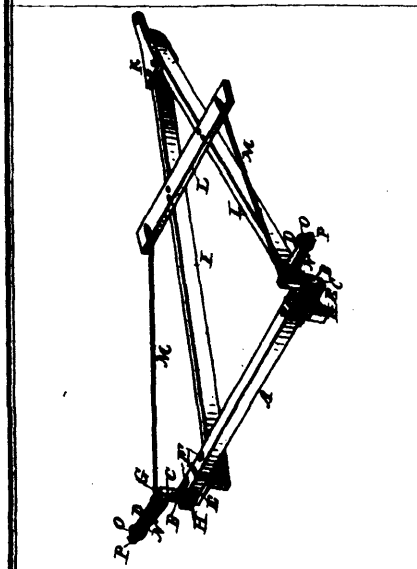
18133 Mack's Improvements in Door Hangers.



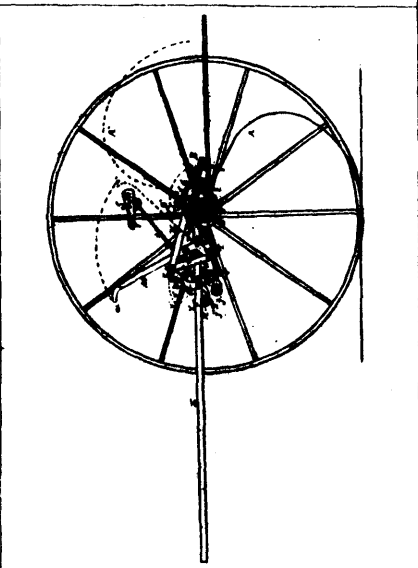
18134 Thompson's Improvements in Loom Shuttles.



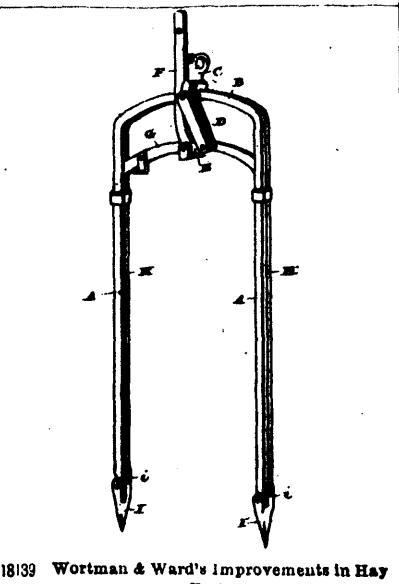
18135 Fallon's Improvement in Dumping Cars.



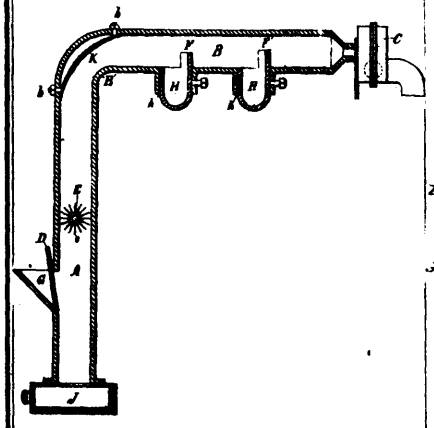
18136 Turner's Improvements in Harvesters



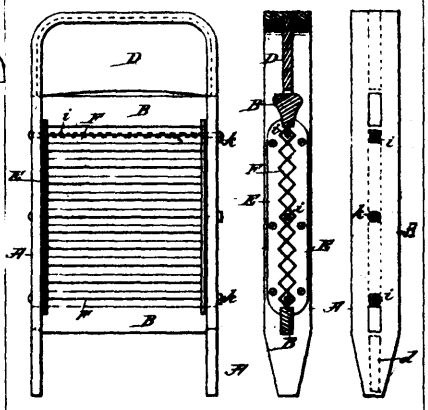
18138 Beauchemin's Horse Rake.



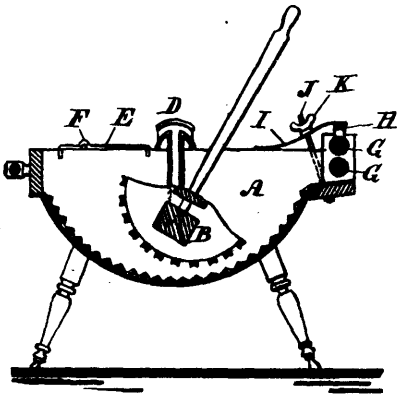
18139 Wortman & Ward's Improvements in Hay Forks.



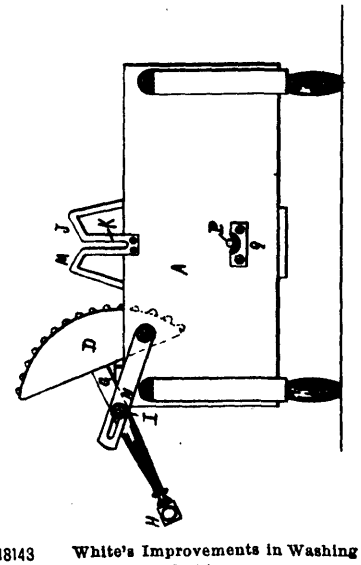
18140 Coombe's Improvements in Ore Separators.



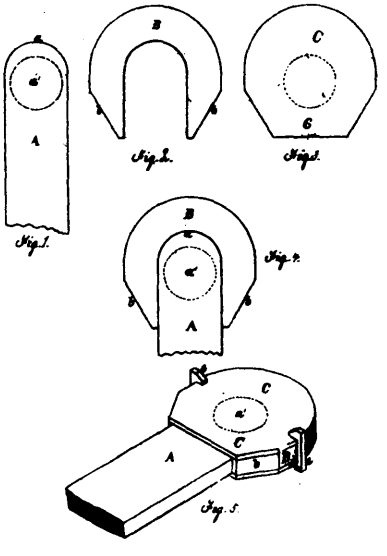
18141 Kase's Improvements in Wash-Boards.



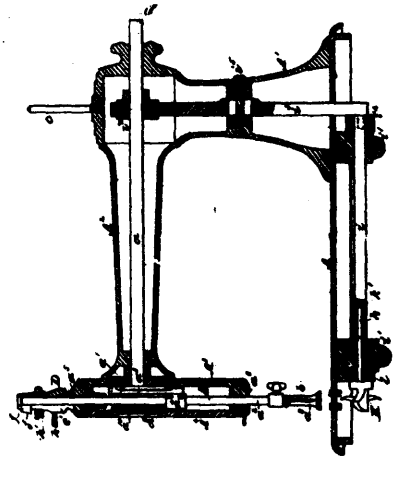
18142 Morehouse's Washing and Wringing Machine.



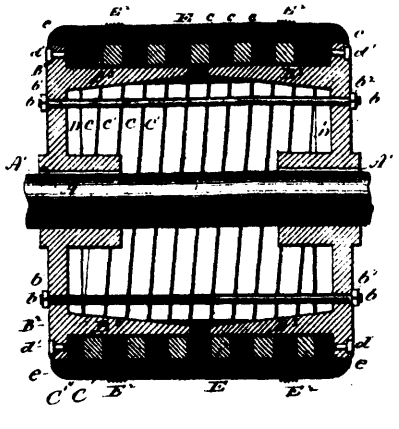
18143 White's Improvements in Washing Machines.



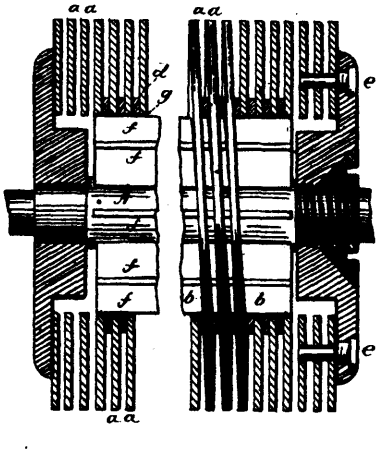
18144 Springer's Improvements in Eye-Bars.



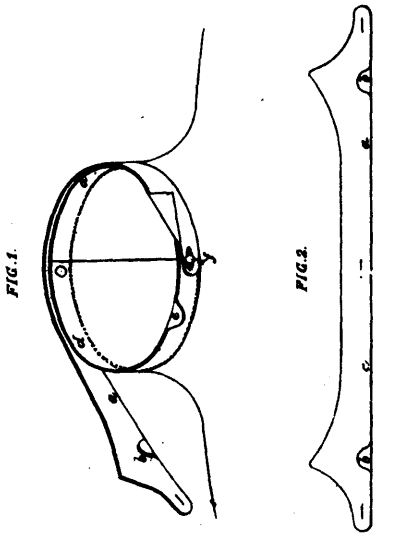
18145 Post's Improvements in Sewing Machines.



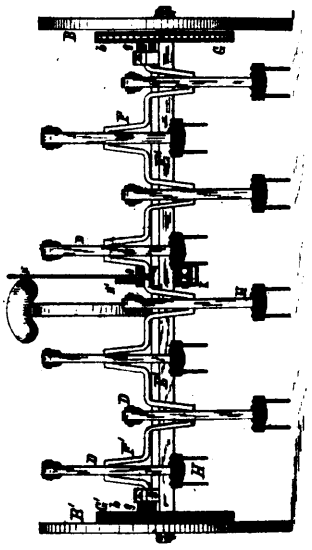
18146 Fuller's Dynamo Electric Machine.



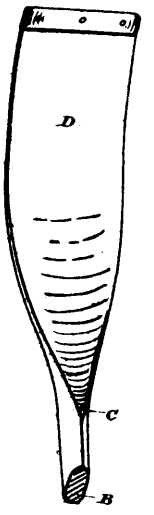
18147 Fuller's Core for Dynamo-Electric Machines.



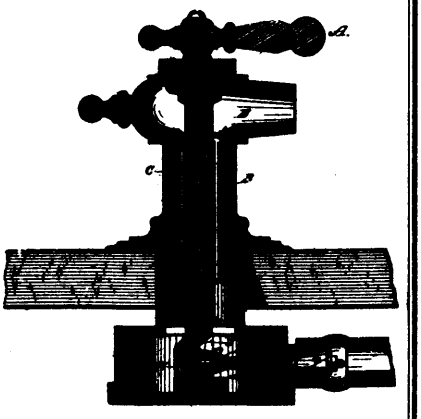
18148 Christopher's Improvement in Shirt Collars.



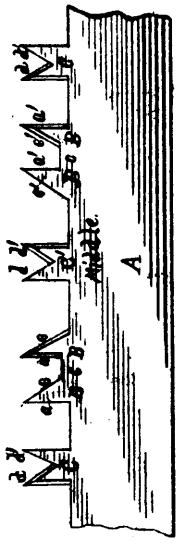
18149 McGregor's Improvements in Hay Tedders.



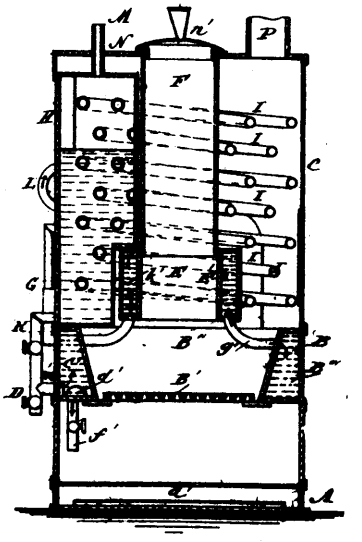
18150 Warin's Improvement in oars.



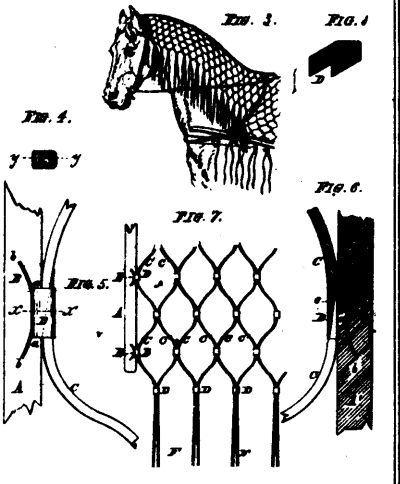
18151 Whittaker's Improvements in Faucets.



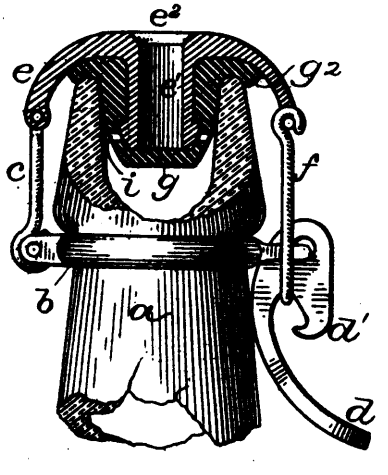
18152 Wills' Improvements in Cross-Cut Saws.



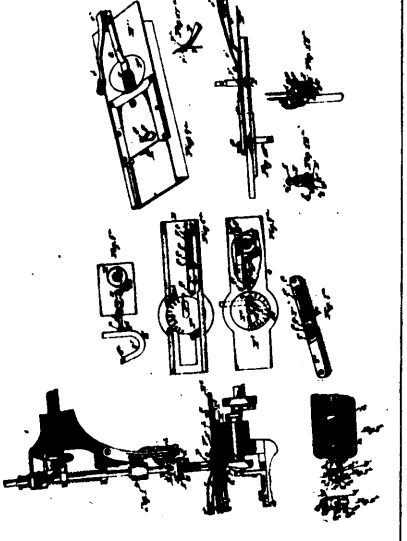
18153 Harris', Improvements in House Heaters.



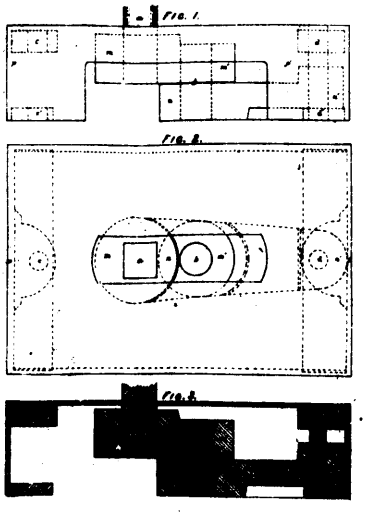
18154 Gingras' Improvements in Fly Nets.



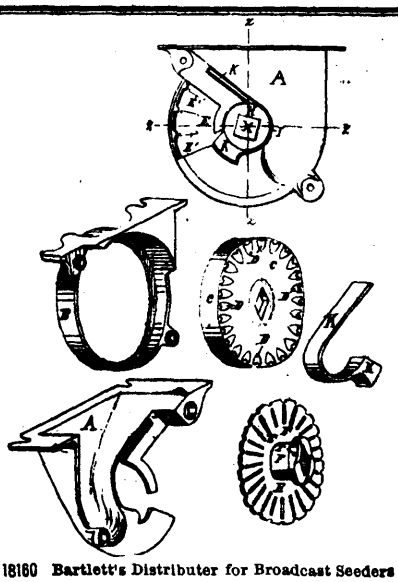
18155 Thatcher & Johnson's Improvements in Bottle Stoppers.



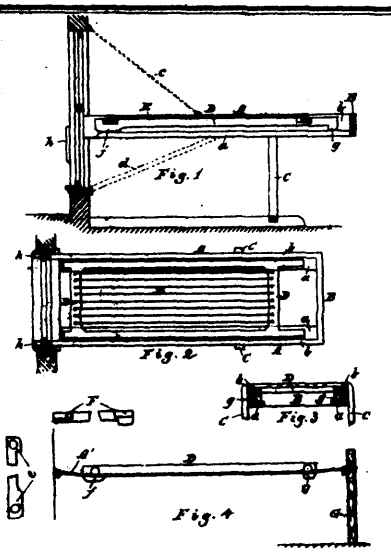
18157 Banks' Button Hole Sewing Machine.



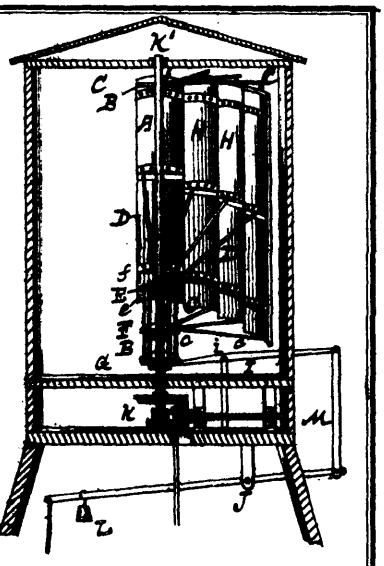
18159 Pennell's Brick and Tile Machine.



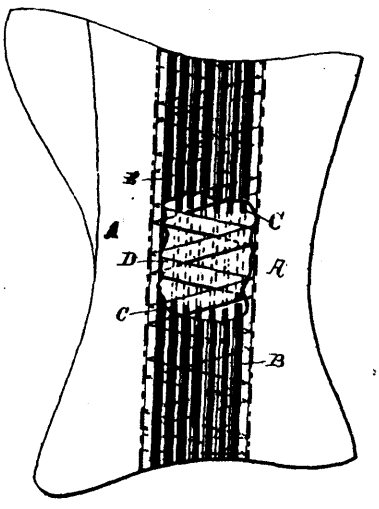
18160 Bartlett's Distributer for Broadcast Seeders and Grain Drills.



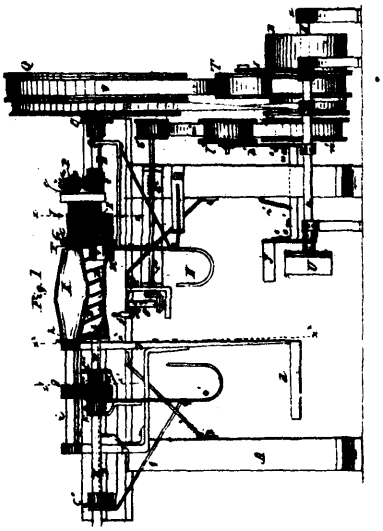
18161 Brown's Improvements in Clothes Dryers.



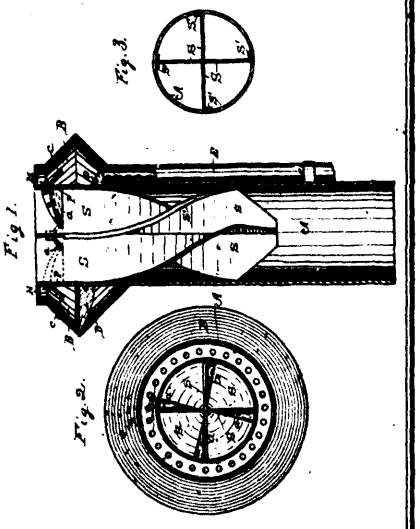
18162 Jacob's Improvements in Windmills.



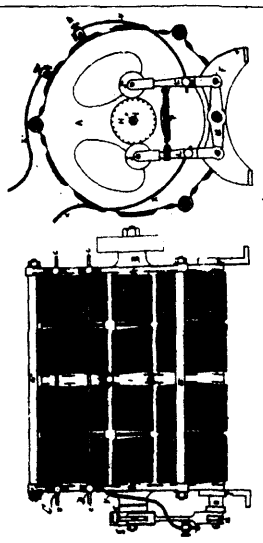
18163 Henninger's improvements in Corsets.



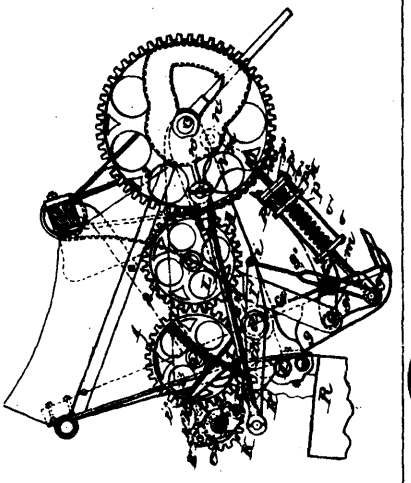
18164 Fraser's Machine for Making Upholstering Springs.



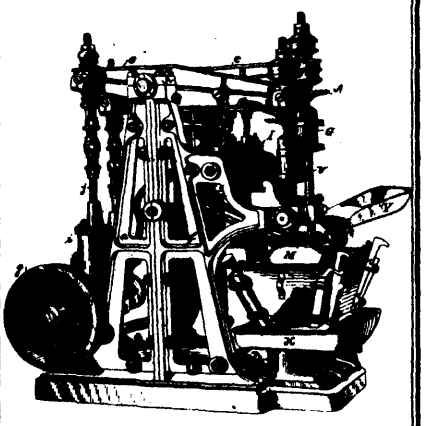
18165 Walker's Improvements in Spark-Arresters



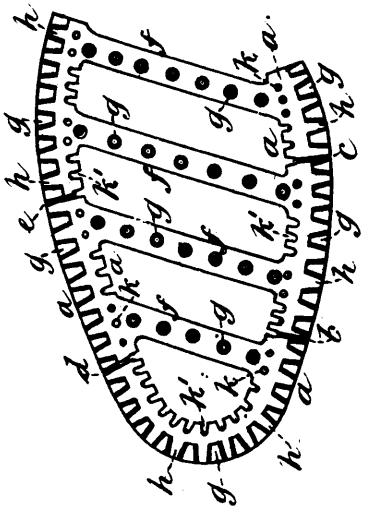
18166 Paine's Dynamo-Electric Machine.



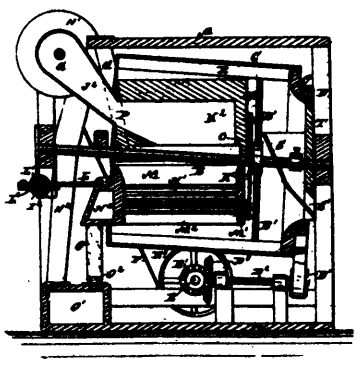
18167 Bullock's Improvements in Grain Binders.



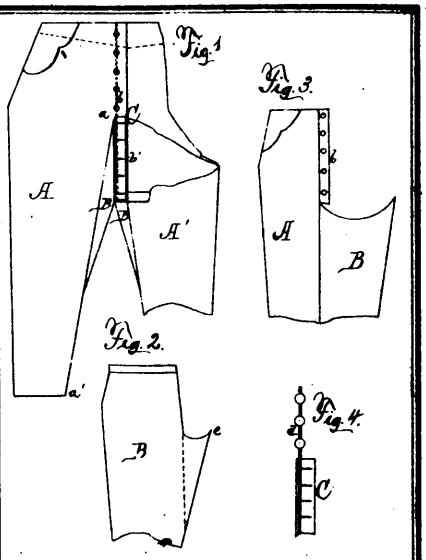
18168 Butterfield's Improvements in Stamp Mills.



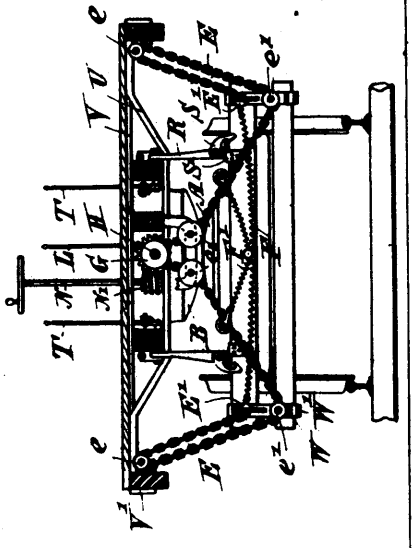
18169 Borrett's Boot and Shoe Sole Protecting Plate.



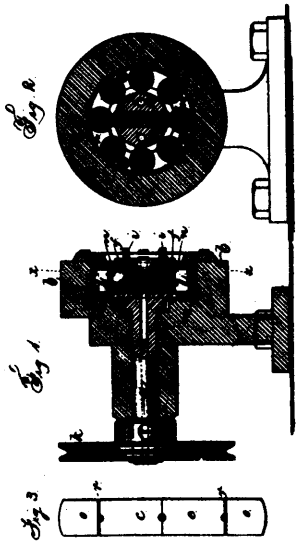
18170 Klostermann's Improvement in Middlings Purifiers.



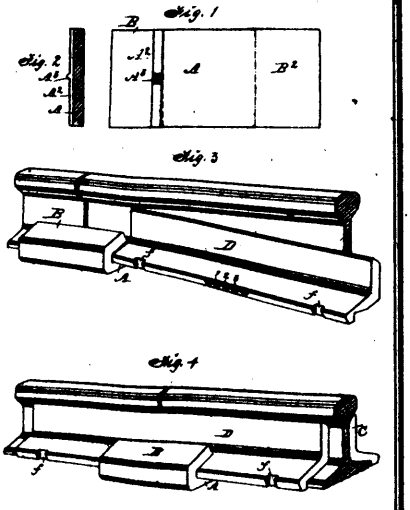
18171 Venner's Improvements in Overalls and Pantaloons.



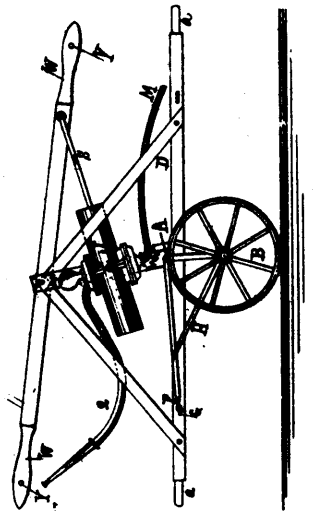
18172 Greene's Convertible Freight Car.



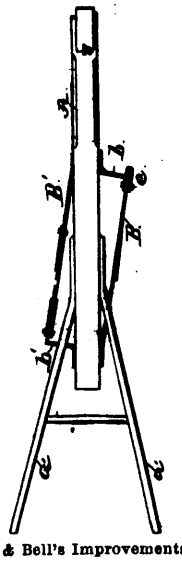
18173 Dayton's machine for Swaging Needle Blanks, &c.



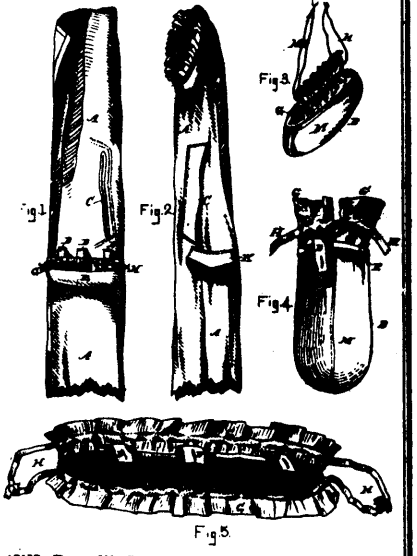
18174 Billington's Railway Rail Joint and Lock.



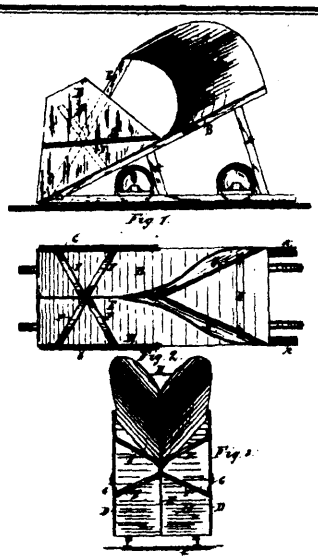
18175 Zeigler's Improvements in Fire Engines.



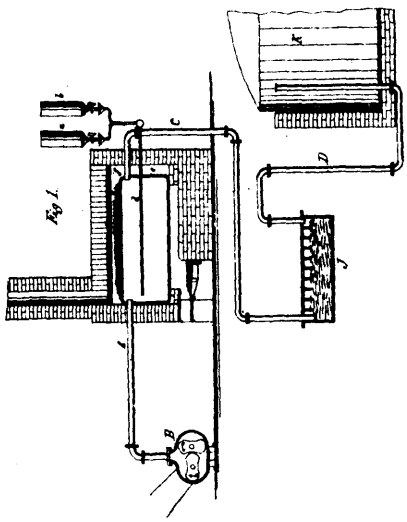
18176 Denson & Bell's Improvements in Cultivator Ploughs.



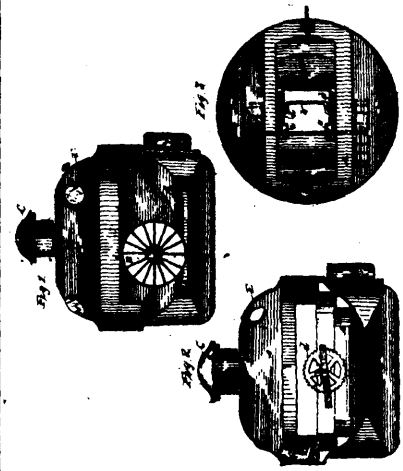
18177 Russell's Improvement in Circular Cloaks.



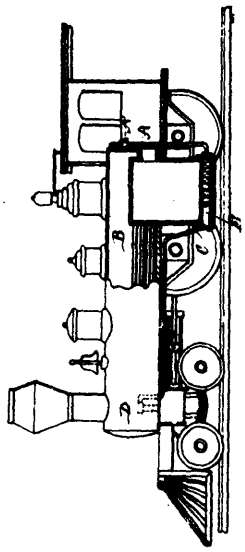
18178 McKay's Improvements in Snow Ploughs.



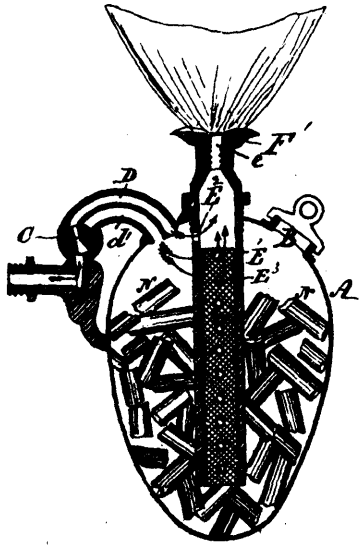
18179 Chamberlain's Method of Manufacturing Gas.



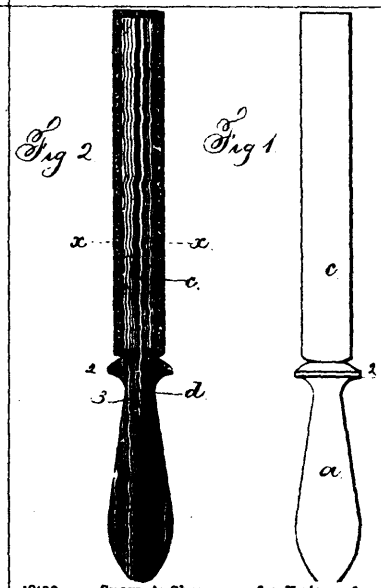
18180 Hamilton's Life Boat.



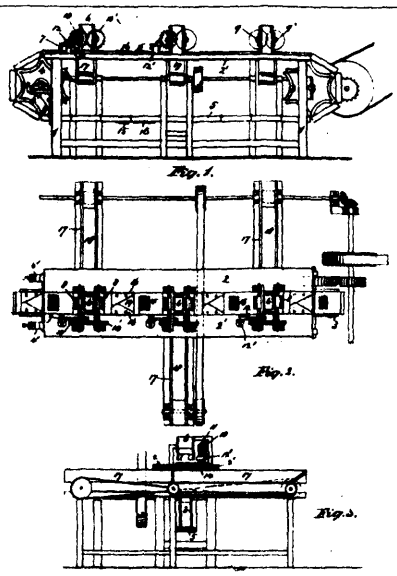
18181 Bignell's Locomotive Ash Pan.



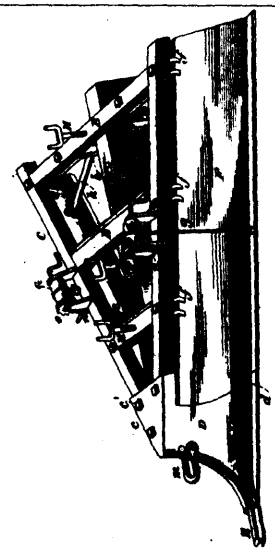
18182 Livesey & Kidd's Apparatus for Enriching Illuminating Gas.



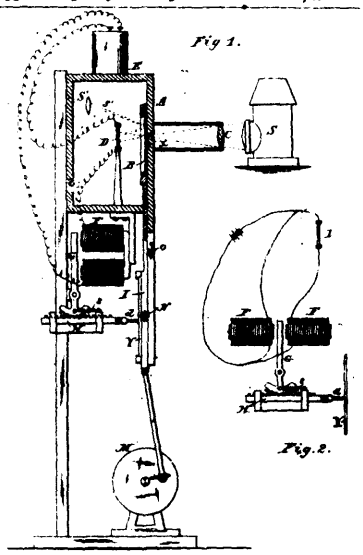
18183 Sperry's Sharpener for Knives, &c.



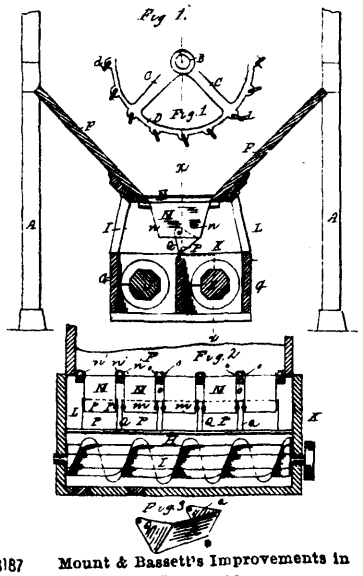
18184 Millen & Mousseau's Match Splint Machine.



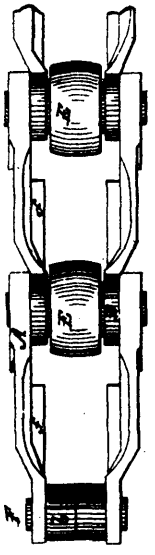
18185 Merrill's Means for unloading Platform Cars.



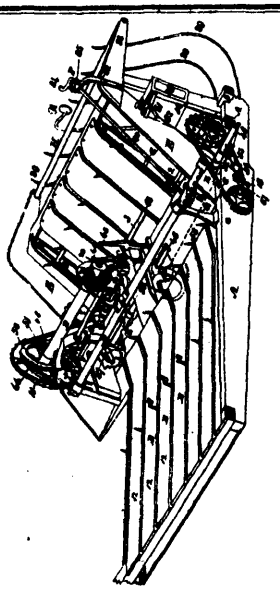
18186 Bain's Improvements in Controlling an Engraving or Cutting Tool by Light and Heat Rays.



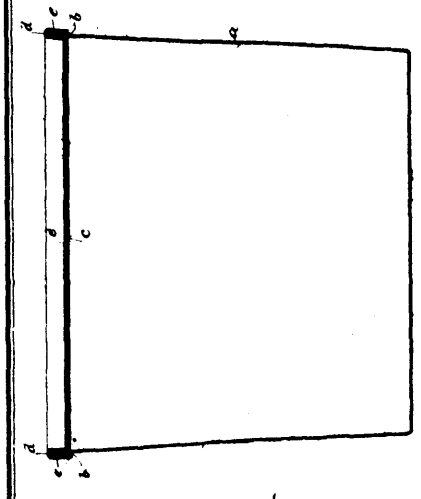
18187 Mount & Bassett's Improvements in Conveyers



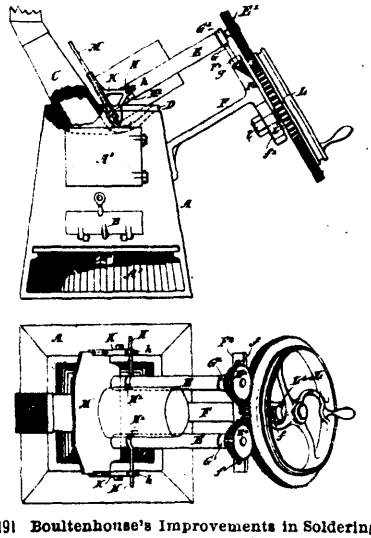
18188 Legg's Improvements in Chains.



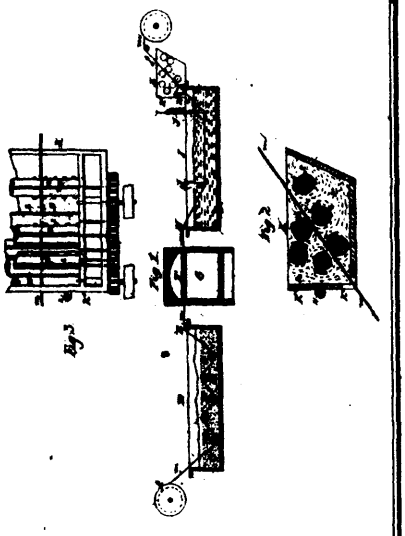
18189 Dewey's Improvements in Harvesters.



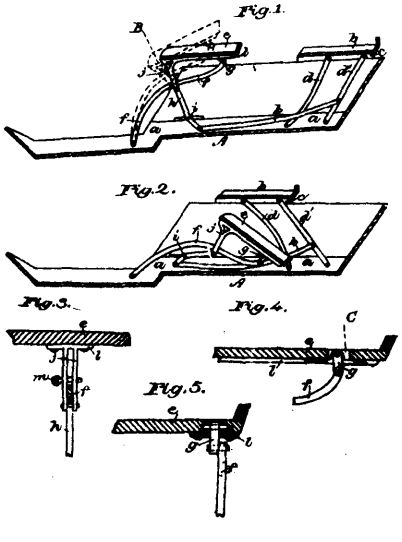
18190 Dolby's Means for Closing Cans.



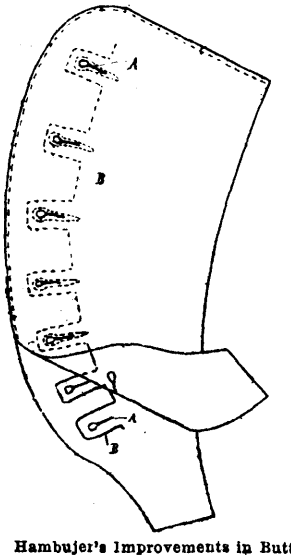
18191 Boultenhouse's Improvements in Soldering Furnaces.



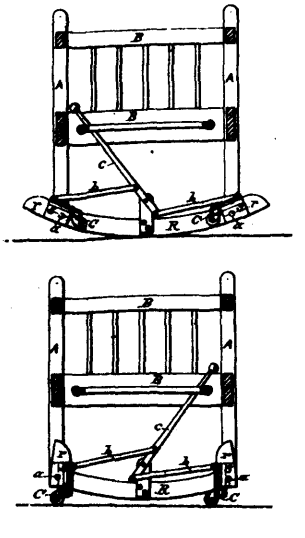
18192 Roberts' Apparatus for Coating Metals.



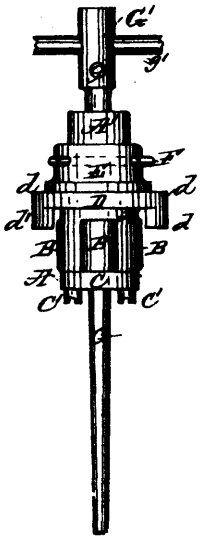
18193 Well's' Improvements in Carriages.



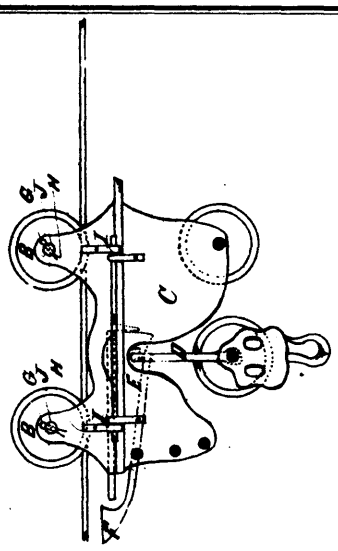
18194 Hambujer's Improvements in Button Hole Stays.



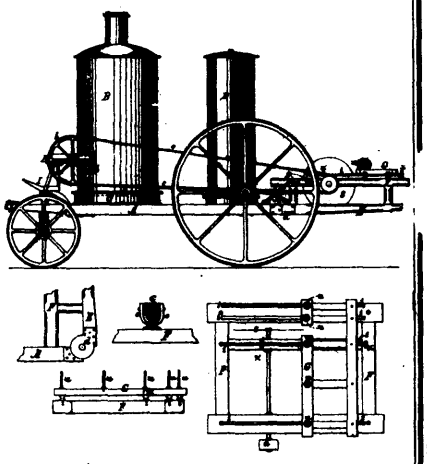
18196 Ranney's Improvements in Rocker Attachments.



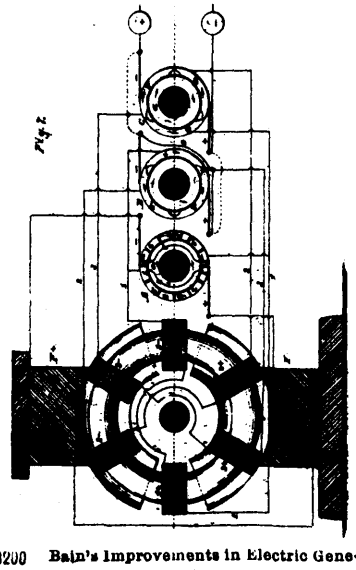
18197 Dettmarr's Tool for Expanding Tubes.



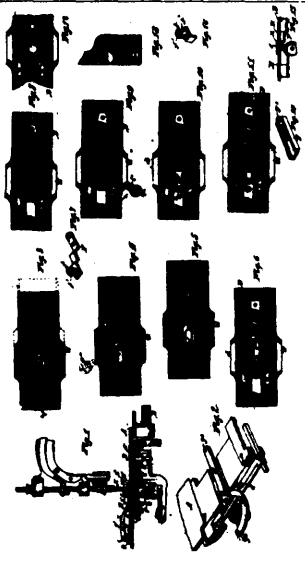
18198 Hall's Machine for Unloading Hay in Barns



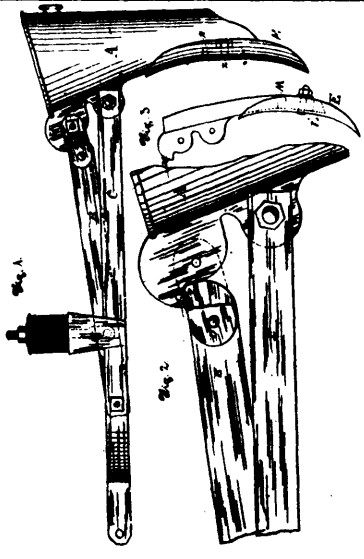
18199 Dunckel's Portable Steam Sawing Machine.



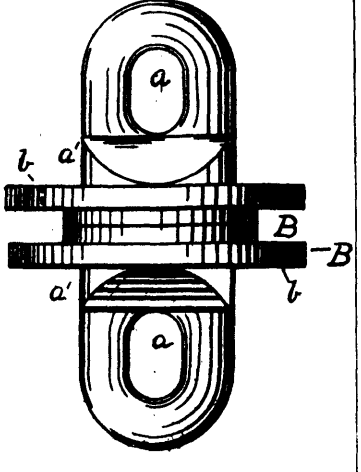
18200 Bain's Improvements in Electric Generators.



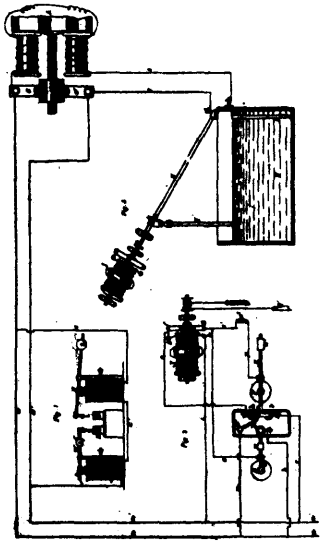
18201. Banks' Button Hole Sewing Machine.



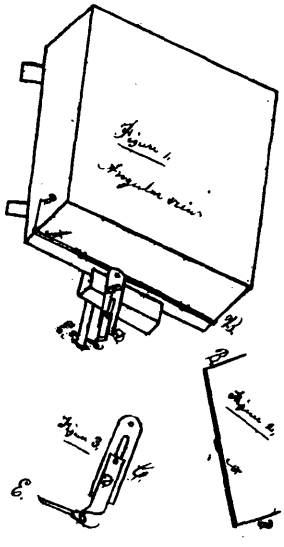
18202 Keller's Improvements in Flexible Hoes.



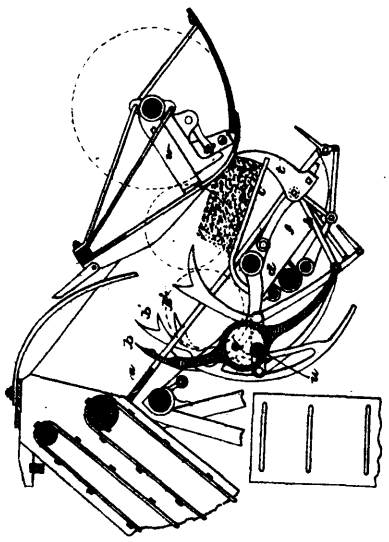
18203 Wadham's Chain Pump Bucket.



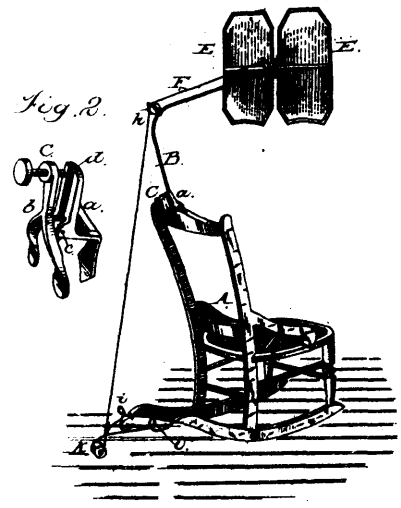
18204 Beeman, Taylor & King's Electric Current Governor.



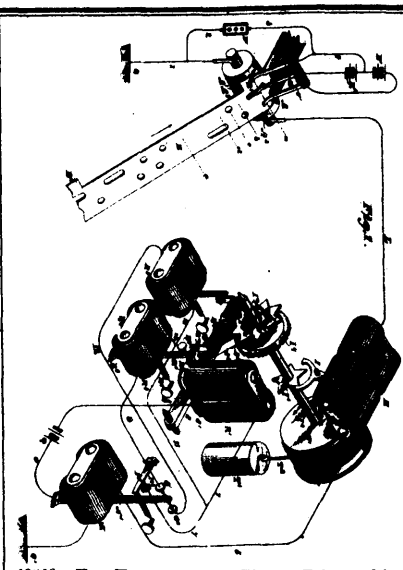
18205 Marr's Improvements in Car-Couplers.



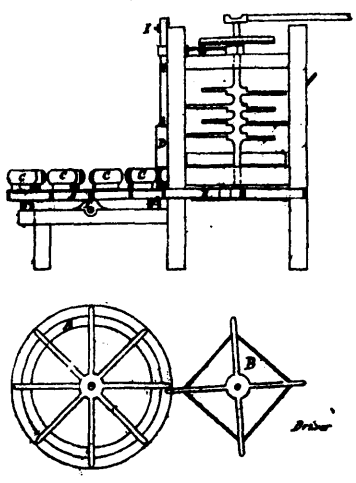
18207 Whitely, Bayley & Lee's Improvements in Grain Binders.



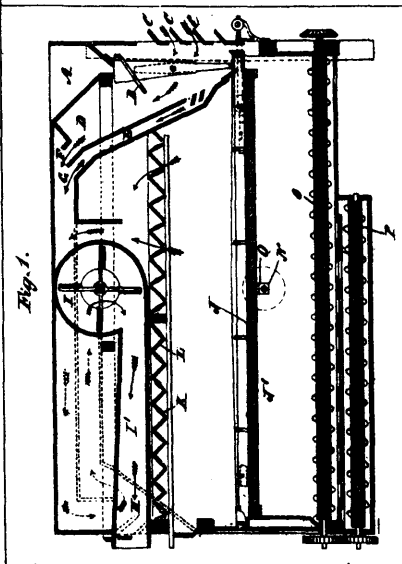
18208 Roberts' Rocking Chair Fan.



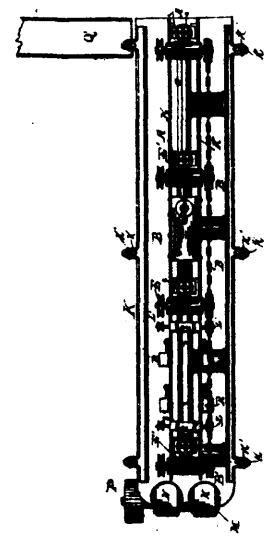
18209 Van Hoevenbergh's Electro-Telegraphic Printing Instrument.



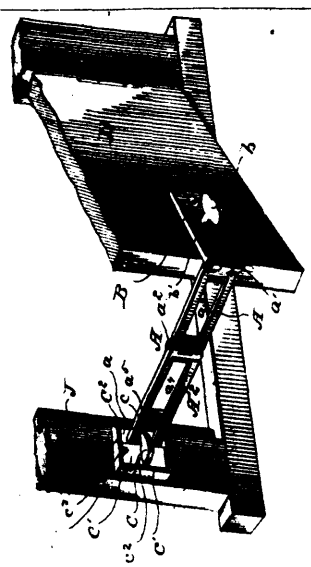
18210 Hales' Machine for Making Pressed Bricks.



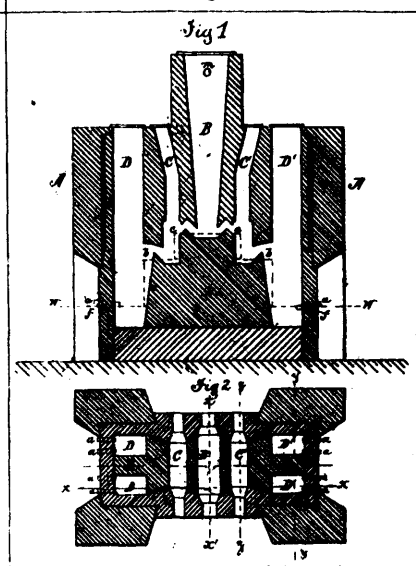
18211 Goldie and McCulloch's Improvements in Middlings Purifiers



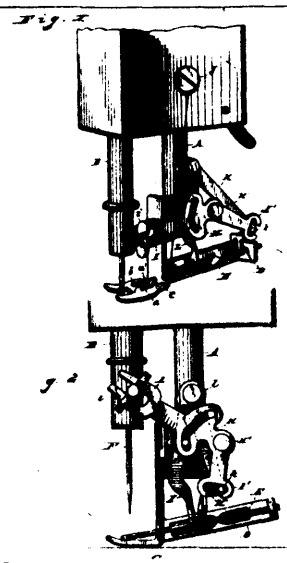
18212 Norton's Improvements in Soldering Cans.



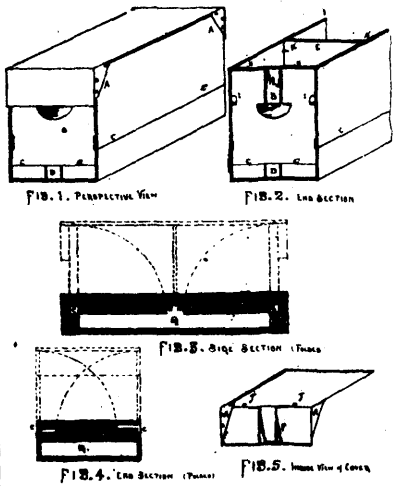
18213 Phillips' Improvements in Door Checks.



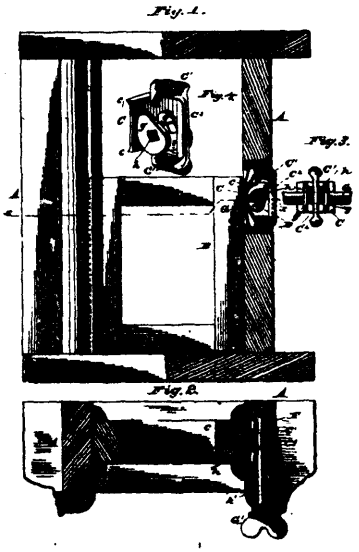
18214 Tourangin's Process and Apparatus for the Reduction of Iron Ore.



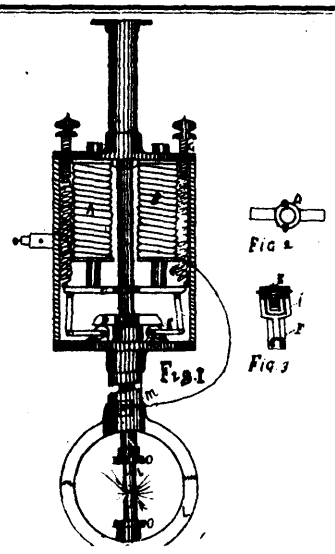
18215 Baker's Embroidering Attachment for Sewing Machines.



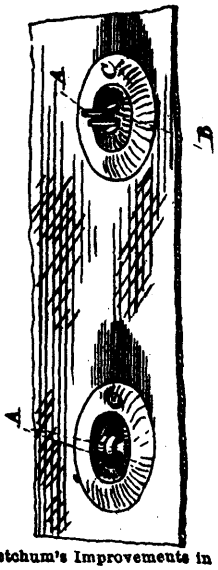
18216 Emery's Improvement in Egg Cases.



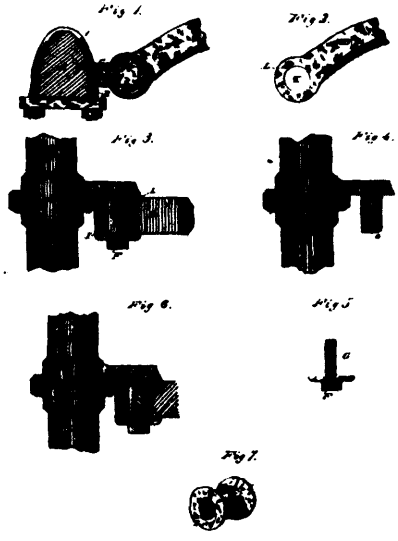
18217 Rosentreter's Sash-Holder and Lock.



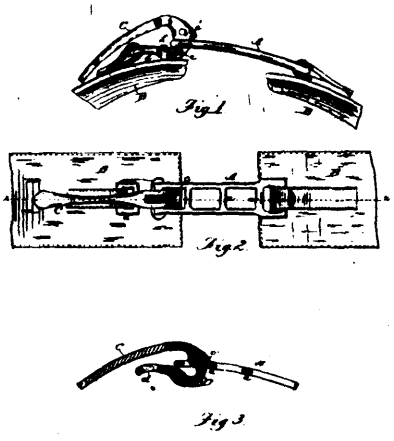
18218 Kay's Electric Arc Lamp.



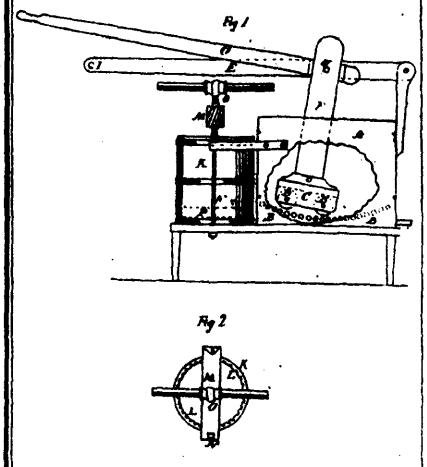
18219 Ketchum's Improvements in Button Fasteners.



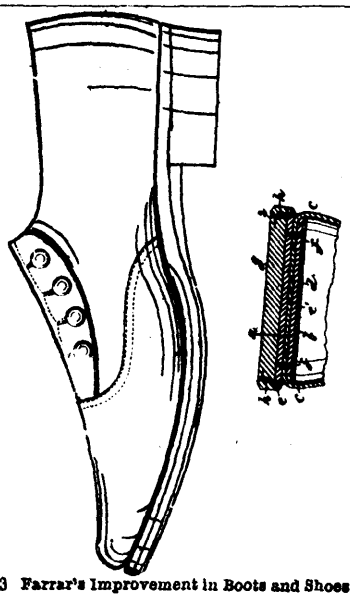
18220 Elting's Improvement in Thill-Couplings.



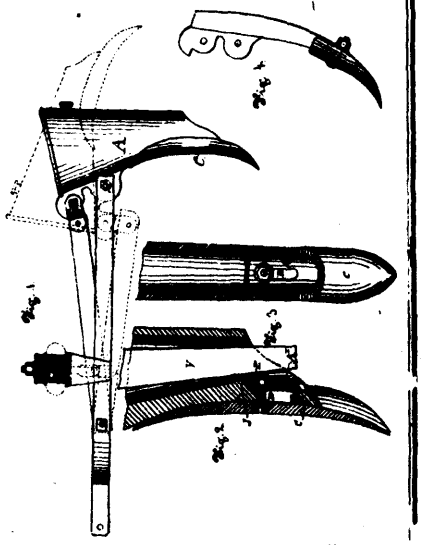
18221 Hayton's Improvements in Horse Collar Fasteners.



1222 Van Norman's Improvement in Washing Machines.



18223 Farrar's Improvement in Boots and Shoes.



18224 Keller's Improvements in Seeding Machines.