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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. 18,973. Plough Gauge and Guide.

(*Jauge et Guide de Charrue.*)

William H. Ammons, Little Rock, and William J. Montgomery, Marion, S.C., U. S., 1st April, 1884; 5 years.

Claim.—1st. As an improvement in plow gauges and guides, a gauge and guide provided with a slotted convex bearing side, and a slotted wedge-block having a concave side adapted to serve as a seat for the convex side of the gauge and guide, as set forth. 2nd. The combination of the gauge E, having a convex side provided with a longitudinal slot E^r with the wedge-block D, provided with a longitudinal slot D^r, and having one of its sides made concave to form a seat for the gauge and guide, the whole adapted to be secured to the plow standard by the same bolt which secures the plowshare, as set forth.

No. 18,974. Roller Grinding Mill.

(*Moulin à Blé à Cylindre.*)

Thomas Pringle, Montreal, Que., (Assignee of Richard Birkhole, Milwaukee, Wis., U.S.), 1st April, 1884; 5 years.

Claim.—1st. The combination of the standard, the roll mounted in fixed bearings in the standard, the hopper-frame pivoted to the standard and the movable roll journaled in, and supported by the hopper-frame, as described and shown, whereby a proper relation is maintained between the hopper and rolls and the weight of the hopper applied to aid in forcing the rolls together. 2nd. The combination of the standard, the roll mounted in fixed bearings thereon, the swinging hopper-frame, the movable rolls sustained by the hopper-frame and a spring applied, substantially as described, to urge the hopper downward. 3rd. The combination of the standard, the fixed roll, the swinging hopper-frame, a second roll sustained by the hopper-frame and a stop device, substantially as shown, to limit the swinging motion of the hopper-frame. 4th. The combination of the standard, the roll mounted in fixed bearings therein, the hopper supporting frame having a pivoted connection with the standard, the second roll sustained by the hopper-frame, the spring tending to swing the hopper-frame downwards, and an adjustable device, substantially as shown, to limit the movement of the hopper under the action of the spring. 5th. The combination, with the standard, the stationary roll mounted therein, and the movable roll, and a pivoted hopper-frame or casing adapted to inclose the two rolls. 6th. The combination of the forked standard, the roller-casing mounted within the casing and supported one by the standard and the other by the casing, substantially as described and shown. 7th. In combination with the grinding-roll mounted in fixed bearings, the second roll mounted in a support which swings from the centre above the axis of the stationary roll, and pinions connecting the two rolls, as shown, whereby motion is imparted from the first roll to the movable roll downward. 8th. The combination of the standard, the fixed roll, the movable roll, the swinging roll-supporting frame encircling the shaft of the stationary roll, and the frame-supporting bolt E proportioned in relation to the other parts to break or give way, when the mill is subjected to excessive strain.

No. 18,975. Roller Grinding Mill.

(*Moulin à Blé à Cylindre.*)

Thomas Pringle, Montreal, Que., (Assignee of Hans Birkholz, Racine, Wis., U. S.), 1st April, 1884; 5 years.

Claim.—1st. The combination, substantially as before set forth, of the fixed roller-supporting standard, the movable roller-carrying casing pivoted thereto, the adjustable gauge-rod, the nut thereof held by the standard, and the spring connected with said rod and adjustable in tension independently thereof. 2nd. The combination, substantially as before set forth, of the fixed roller-supporting standard, the movable roller-carrying casing pivoted thereto, the adjustable gauge-rod, the swivelling nut thereof held by the standard, the spring, the sliding cap, the hand-lever for rotating the gauge-rod detachably locked to the sliding cap, and the nut for adjusting the tension of the spring.

No. 18,976. Grinding Roll and Method of Manufacturing the Same.

(*Cylindre de Moulin à Blé et Methode pour le Fabriquer.*)

Thomas Pringle, Montreal, Que., (Assignee of Richard Birkholz, Milwaukee, Wis., U.S.), 1st April, 1884; 5 years.

Claim.—1st. As an improvement in the art of manufacturing grinding-rolls, the method consisting in first casting the roll in a chill with teeth or ribs thereon, and subsequently grinding away the points or edges of the teeth to complete the roll. 2nd. As a new article of manufacture, a cast-metal grinding-roll having thereon chilled ribs or teeth portions of the edges of which are of softer metal than the remainder, as described and shown. 3rd. As a new article of manufacture, the cast-metal roll having thereon, and integral therewith, the chilled teeth or ribs with ground points or extremities.

No. 18,977. Coal Car.

(*Wagon à Charbon.*)

John D. Madeira, Chillicothe, Ohio, U. S., 1st April, 1884; 5 years.

Claim.—1st. A car-body having one or more discharge-openings, each of which has hinged respectively to its upper and under edges, two overlapping shutters of which the inner shutter is held by the outer one when closed, and of which the outer shutter becomes when open the floor of a discharge-chute, substantially as set forth. 2nd. In a railway car for transporting coal and like materials, and having one or more discharge-openings, two overlapping shutters at each opening of which the inner shutter is hinged by its upper edge to the top of the opening, so as to be capable of closing it, and of which the outer shutter is hinged to the bottom of the openings and is combined with external side wings, to form an extension platform or discharge-chute, substantially as set forth.

No. 18,978. Shot Case.

(*Boîte à Munition.*)

Quincy A. Ellis, Gatesville, Texas, U. S., 1st April, 1884; 5 years.

Claim.—1st. A case tapering toward its spout, a charger fitting said spout to slide therein, and a rod passing through said case to support it, the case being hung upon the rod to balance the spout upward, substantially as described. 2nd. The combination, with a case tapering toward its spout and means for hanging the same to balance the spout upward, of a drawer fitting said spout to slide therein, said drawer having a bottom, two sides and two ends and an opening in its top, said case having an offset in the upper side of its spout extending over the rear end of the drawer when inserted, as described, whereby communication is made between the interior of the case and the interior of the drawer.

No. 18,979. Street Car Fare Box.

(*Tronc de Char de Tramway.*)

John R. Hare, Baltimore, Md., U. S., 1st April, 1884; 5 years.

Claim.—A car-fare box which consists of the following essential elements in combination, viz: an inclosed casing having glass plates at the front and rear sides thereof, and an aperture in the rear side for the deposition of fares, a vertical inwardly-opening and gravi-

nation of the needle operating arm, the spring actuated lever, and means for connecting the said lever and arm, substantially as described. 7th. The combination of the needle operating arm, the spring actuated lever, and the link connection between the said arm and lever, substantially as described. 8th. The combination of the needle operating arm, the spring actuated lever, means for connecting said lever and arm, the guide rod for the lever, substantially as described. 9th. The combination of the hand piece, the air jet tube and pipe for supplying air through said tube to the needle, and the needle passing down from the upper part of the hand piece and connected with the plate carrying the needle, so as to adjust the same, substantially as described. 10th. The combination of the pigment receptacle, the tapering needle, the pipe for supplying an air jet to the needle, and means for projecting and guiding the needle in a straight line, substantially as and for the purpose set forth. 11th. The combination of the pigment receptacle, the bow-needle, a support for holding the pigment-carrying portion of said needle from contact with the pigment receptacle, a pipe supplying an air jet to the needle, and means for projecting the needle, substantially as described. 12th. The combination of the wind wheel, the needle operating arm, the pitman connecting the said arm and wind-wheel, the needle having an eye connection with said operating arm, an inclined rest for said arm, and the lever for varying the stroke and throw of the needle, substantially as described. 13th. The combination of the wind wheel, the needle operating arm, the pitman connection between said arm and wheel, the needle connected to said arm, and the support for the needle extending beyond the pipe for supplying an air jet to the needle, substantially as described. 14th. In a paint distributor, the bow needle having its shank flattened at an angle to the bow, substantially as described.

No. 18,988. Car Roofing. (*Toiture de Wagon.*)

Albert W. Gilmore, Chicago, Ill., U. S., 1st April, 1884; 5 years.

Claim.—1st. The ridge-plate G, provided with two horizontal grooves *a*, one in each side, substantially as and for the purpose described. 2nd. The sheet metal covering described, held in position above by the pinching action of the grooves in the ridge plate, and below by the stop blocks *s*, substantially as described. 3rd. The ridge-plate G having side grooves *a*, provided with cross grooves *c* at proper intervals corresponding to the ridges and grooves made by the corrugations of the metal sheets E, as described.

No. 18,989. Railroad Switch Point Mover.

(*Appareil pour Manœuvrer les Aiguilles de Chemin de Fer.*)

George W. Horne, New York, N. Y., U. S., 1st April, 1884; 5 years.

Claim.—1st. In a switch mover, with a spiral slot or grooved channel, with rotary and travelling nut or hub B, with projecting lug *m* and protruding lugs or ears *n, n*, embracing the sleeve *c* and moving the same in either direction, substantially as and for the purpose described. 2nd. In a switch mover, the case A with a spiral guide, the nut or hub B with lug or projection *m*, protruding ears *n, n*, the adjustable sleeve *c* and guide rod D, the whole combined and operated in the manner, substantially as and for the purpose described.

No. 18,990. Locomotive Lubricator.

(*Graisseur de Locomotive.*)

Clarence B. Hodges and Charles H. Hodges, Detroit, Mich., U. S., 1st April, 1884; 5 years.

Claim.—1st. In a locomotive lubricator, the combination, with the visible feed chamber G, and the condensing chamber E, of an extender, the top pipe connection between the upper portion of the condenser, the boiler, substantially as described. 2nd. The combination, with a locomotive, of a lubricator having a steam inlet pipe connected with the steam space of the boiler, an oil exit pipe leading from the top of visible feed-chamber into the tallow pipes, and a steam connection pipe connecting the top of the visible feed chamber with the steam inlet pipe or steam space above the water-level of the condenser, substantially as described. 3rd. A lubricator combining the following elements: first, an oil reservoir, a condenser, a steam inlet pipe, a visible feed-chamber in which the oil rises through the water, a steam pipe connecting the top of this chamber with the steam inlet or steam space above the water level of the condenser, and a throttling valve located in the said oil exit pipe, substantially as described. 4th. In a locomotive lubricator, the combination with the condenser E and the upper end of the visible feed chamber and the steam-space of the boiler, and a connection between the upper part of the condenser and the said steam pipe connection, substantially as described. 5th. The metallic extension I₂, adapted to maintain the packing at the top of the visible feed chamber always in contact with water, and out of contact with oil, substantially as described.

No. 18,991. Horse Shoe Nail Machine.

(*Machine à Clou à Cheval.*)

George J. Capewell, Cheshire, Ct., U. S., 1st April, 1884; 5 years.

Claim.—1st. In a machine for making horse-shoe nails or other metallic articles, a set of compressing rolls arranged in pairs, each pair having die-grooves which are formed with a very gradual inclination or shallowing at their small ends, to adapt them to reject any blank which may be presented to the small ends of the grooves, substantially as set forth. 2nd. In a machine for making horse-shoe nails, or other metallic articles, a set of rolls for compressing the blanks, each of these rolls having dies set into its periphery or fastened thereon, these dies having die-grooves in their faces, the line of junction or contact of the dies passing through the point in the groove where the pressure or pinch begins, or at any point between it and the large end of the pocket which receives the head of the blank. 3rd. A pair of compressing rolls provided with die-grooves, having at their large ends pockets which are deeper than the remaining parts

of said grooves and larger than the heads of the blanks. 4th. In a machine for making horse-shoe nails or other metallic articles, a clutch for engaging the driving wheel and thereby turning the driving shaft, in combination with a device for disengaging said clutch from said wheel, a dog or detent which normally prevents this disengagement, and devices which automatically remove said dog or detent when the blanks become clogged in the guide-way. 5th. In combination with a series of compressing die-grooved rolls and a guideway which conducts the blanks to and out of the said guide-way between each pair of said rolls and a series of cams and levers acting between said slides, each one of these levers being made in two sections which are adapted to yield on encountering a blank or other obstacle, substantially as set forth. 6th. In combination with a series of compressing die-grooved rolls and a guideway, which conducts the blanks to and from each pair of said rolls, a series of slides working into and out of the said guideway between each pair of said rolls, a series of sectional yielding levers for operating said slides, and devices which permit the automatic unshipping of the clutch, which drives the machine when a shaft or bar forming part of said devices is engaged by a shoulder on any one of said levers in the act of yielding, as aforesaid. 7th. In combination with the driving wheel, driving shaft and the clutch for connecting and disconnecting them, the shipping levers and notched connecting rod or bar for operating said clutch, the retracting spring for unshipping the same, the spring-pressed dog which engages with said notch to lock said clutch and arm the action of said unshipping spring, and a lever and a shaft and arm operated by said lever for removing said dog from said notch, substantially as set forth. 8th. In combination with a set of compressing devices for acting on metallic blanks, a pair of feed rolls which are grooved peripherally and have the bottoms of their grooves cut away except at two opposite parts thereof, the parts not cut away forming two pairs of bearing faces which will feed the metal twice during each rotation of said feeding rolls, substantially as set forth. 9th. In combination with the feeding rolls and compressing rolls, an interposed cutting-blade and sliding plungers, a pendant arm carrying a piece arranged to be forced against the outer end of said plunger, and a shaft carrying two horns or cams which act on said pendant arm, substantially as set forth. 10th. In combination with a pair of feed rolls, a set of compressing devices and a cutting blade or blades, operated as set forth, an adjustable finger which supports the end of the wire or bar and regulates the length of the blanks, substantially as set forth. 11th. A circular plate or wheel provided with cross passages having four equidistant openings in its periphery in combination with compressing-rolls and a guideway discharging into said passages as they successively assume a vertical position, and devices which give said wheel a step-by-step motion of one-fourth of a circle at each step, for the purpose set forth. 12th. A rotary wheel and devices for giving it a step-by-step motion of one-fourth of a circle at each step, in combination with devices for beveling, pointing and heading the blanks carried by said wheel, as they successively reach the points where said devices are respectively located. 13th. In combination with the two wheels which carry the blanks, as stated, a reciprocating plunger which enters the first wheel and forces the blanks into the dies of the other wheel, substantially as set forth. 14th. A wheel rotating with a step-by-step motion and adapted to carry the blanks with their end protruding, as stated, in combination with a beveling anvil and punch or plunger which bevel the end of the blank, substantially as set forth. 15th. A wheel rotating with a step-by-step motion and adapted to carry the blanks with their ends protruding, as stated, in combination with a stationary blade or stop and a plunger or blade, whereby the surplus metal is trimmed from the point after the latter has been bevelled, as set forth. 16th. A wheel provided with heading dies, which receive the blanks of metal and carry them around in a step-by-step motion, in combination with a heading die and a clamping die which are carried against said blanks, substantially as set forth. 17th. A wheel provided with heading dies which receive the blanks of metal, in combination with a slide carrying a heading die and a clamping die, and devices which give to said slide a compound lengthwise, and upward and downward motion, substantially as set forth. 18th. A set of beveling devices, a set of trimming devices, and a set of heading devices, in combination with the compressing rolls and guideway, and devices for transferring the blanks from said guideway to the beveling, trimming and heading devices, substantially as set forth. 19th. A feeding plunger which operates on the blanks after they have left the compressing rolls, in combination with unlatching mechanism for stopping the machine, a detent which prevents the operation of said unlatching mechanism and a device connected to said feeding plunger which removes said detent when said plunger meets with an obstruction, substantially as set forth. 20th. A feeding plunger and its operating lever, the latter being in two normally rigid sections which are adapted to yield and separate the upper end of the lower section when said plunger meets with resistance, in combination with a clutch and its unshipping spring, and devices for allowing said spring to operate, the latter devices being operated by the engagement of the lower section of said lever therewith when its upper end separates from the upper section, substantially as set forth. 21st. The compressing rolls, each having two die-grooves, in combination with cutting, feeding, beveling, trimming and heading devices, and the cams and cam-grooves arranged to operate all of said devices twice during each rotation of the rolls, substantially as set forth. 22nd. The wheels P and T and the shafts which operate them, in combination with the notched and toothed collar carried by one of said shafts, the retaining pawls which catch into the notches of said collar, the feeding dog and its actuating devices, whereby said collar and shaft are advanced a quarter of a circle at each forward movement of said dog, and the stud or pin which moves with said dog and lifts as the latter reaches the end of its rearward motion, the pawl which prevents the forward motions of said shaft, substantially as set forth. 23rd. A pair of compressing rolls, which are provided with die-grooves that gradually shallow at the small ends of said die-grooves in order that they may expel or refuse blanks which are presented to the small ends of said die-grooves, substantially as set forth. 24th. The combination of a pair of feed rolls, and a spring or springs for allowing them to yield, with a guideway for metal and a set of compressing rolls and cutting devices for the purpose, substantially as set forth. 25th. In combination with a set of compressing rolls, a

pair of feed rolls operating with a yielding pressure, substantially as set forth. 26th. In combination with a set of compressing rolls, a set of feed rolls arranged to supply one blank for each act of compression. 27th. In combination with a set of compressing rolls, cutting devices arranged to sever one blank for each act of compression. 28th. The compressing rolls, each having die-grooves, in combination with cutting, feeding, bevelling, heading and trimming devices, substantially as set forth. 29th. A set of compressing rolls having their first pair provided with die-grooves which are provided with inclined faces extending from the point where compression ends to the small end of the groove, for the purpose set forth.

No. 18,992. Dust Arrester. (*Garde-Poussière.*)

Absalom Backus, Jr., Detroit, Mich., U. S., 1st April, 1884; 5 years.

Claim.—1st. A dust-arrester, consisting of a series of cellular sections or burlaps, located beneath an open covering, within the influence of the exterior air, a closed space between said burlaps in which the discharge spouts lead from one or more rooms, substantially as and for the purposes described. 2nd. The combination, with a tower projecting through a building to the exterior thereof, and terminating at its top in a series of inverted V-shaped cellular sections of burlaps, an open cover for the same, which will permit the burlaps to be acted upon by the exterior air fans, located in one or more apartments of the said building, with discharge spouts leading into the said tower, and a chute for conducting the dust or shavings, etc., to a furnace room or other receptacle, substantially as and for the purposes described.

No. 18,993. Two-Wheeled Carriage. (*Voiture à Deux Roues.*)

George E. Spare, New Haven, Ct., U. S., 1st April, 1884; 5 years.

Claim.—The herein-described two-wheeled carriage, consisting of the axle carrying the two wheels, the half elliptical springs C attached to the axle and extending to the front and rear, the body hung by its front and rear end to said springs, the shafts attached to the axle by a bar extending to the front and rear of the axle, one end of said bar hinged to the shaft, the other secured by a vertical bolt *f* and two adjusting nuts *h*, *i*, substantially as described.

No. 18,994. Cant-Hook Lever. (*Levier de Renard.*)

Thomas Talbot, Mattawa, Ont., 1st April, 1884; 5 years.

Claim.—1st. In a cant-hook lever, the base *a* of the knuckle B extending from the pick or lever end of the lever to that part of it where the power is applied, so as to strengthen those parts exposed to strain, substantially as described. 2nd. The base *a* of the knuckle B extended past the pick end of the wooden body A and turned outward forming the horn *e*, substantially as described. 3rd. In a cant-hook lever, the bolt *c* having the nut *d*, in combination with the base *a*, substantially as shown and described and for the purpose set forth.

No. 18,995. Hanging Circular Saws. (*Suspension des Scies Circulaires.*)

Wallace D. Sherman, East Springfield, Pa., U. S., 1st April, 1884; 5 years.

Claim.—1st. In means for holding and fastening the loose or clamping collar on the arbor of a circular saw, the loose collar C fitted with a key *f*, in combination with the arbor A having a key-way *e* and fast collar B, the saw-driving pins *d*, *d* arranged to engage with the loose collar, and the nut E, substantially as and for the purposes specified. 2nd. The combination, with the loose collar C, of the key *f* of dovetail construction, where it fits or enters within said collar, the saw arbor A having a key-way *e* along its outer end portion, the saw-driving pins *d*, *d* and the fast collar B on, or forming part of, the arbor, essentially as shown and described.

No. 18,996. Tent Peg. (*Piquet de Tente.*)

Edward C. Dawson, New Glasgow, N.S., 1st April, 1884; 5 years.

Claim. The tent peg with head A and reduced part at neck, and cord catch groove B and hole C, the whole substantially as and for the purposes set forth.

No. 18,997. Device for Cleaning Street Sewers. (*Appareil pour Nettoyer les Egouts.*)

Thomas Dark, Buffalo, N.Y., U. S., 1st April, 1884; 5 years.

Claim.—1st. The series of oval-shaped man-holes A, A, built vertically in the streets and widening from the top to the bottom, and leading into the street sewer S, and with a catch basin B beneath each man-hole, and a metal removable grating or cover at the top or street level, substantially as and for the purpose specified. 2nd. In combination with two or more man-holes A, A, and the set-off *d*, *d*, the cleaning devices consisting of the two geared windlasses, or winches D, D, the chain E connected therewith, the leg C with cross-beam and sheave therein, the plough *g*, scraper *f* and toothed scraper *h*, the two latter set back to back and united by a rule-joint and to a connecting rod *e* by rule joints (or equivalent joints), and by shackles and loops to chain E hooked at both ends of the scraping devices, and by the two winches drawn through a sewer both ways, substantially as and for the purpose specified. 3rd. The cup-shaped plough *g* having the inwardly curved teeth with open spaces between attached to the converting rod *e*, as described, followed by the cup-shaped scraper *f*, and the scraper *h* having its flanged edge formed into teeth acting as plough and scraper, so that the whole can be worked both ways in a sewer by the action of the winches, substantially as specified. 4th. The pointed rod or piercer I with other lengths screwed thereto and the last I provided with a ring or loop to hook to the winch chain, substantially as and for the purpose specified. 5th. In combination with the man-holes A of a

sewer, the set-off *d*, *d* or ledge therein to rest the cross-beam *p*, of leg C therein, or a workman to stand on, substantially as specified.

No. 18,998. Submarine Boat. (*Bateau Sousmarin.*)

Monroe Jopling (Executor of the will of Jesse Jopling), Longwood, Mo., U. S., 1st April, 1884; 5 years.

Claim.—1st. In combination with the vertically-moving cylinder or cap G, the flexible trunk or jacket F, secured thereto and to the body of the boat, substantially as and for the purpose specified. 2nd. In combination with the hull or body of a submarine boat, a vertically moving yoke extending through an opening in the top of the boat, a cap carried at the top of said yoke, a screw arranged as shown, to elevate and depress the yoke, and a flexible trunk connected at opposite ends with the cap and with the body of the boat, substantially as shown and described. 3rd. In combination with the boat having the vertically-moving cylinder G and trunk F, the guard or fender, *j*, surrounding said cylinder and trunk, as and for the purpose set forth. 4th. In a submarine vessel, a tank or vessel *v*, provided with flexible tubes and mouth-pieces *w*, and charged with lime-water, or equivalent chemical solution, as and for the purpose set forth. 5th. In combination with the boat A, having the curved rod or bar D extending from the keel upward on the outside of the boat, as shown, a chain applied to said rod, substantially as and for the purpose specified.

No. 18,999. Stable. (*Étable.*)

George A. Knight, Salem, Pa., U. S., 1st April, 1884; 5 years.

Claim.—1st. The combination, with the perforated uprights and the rails forming the rack partitions between the stalls, of the stop-bar and its fastenings, substantially as specified. 2nd. The combination, in a barn or stable, of the partition walls C, perforated uprights H, arranged as described, the rods or bolts K, the adjustable guard-bar M and mangers L, all constructed and adapted to operate substantially as specified.

No. 19,000. Device for Converting Motion. (*Appareil pour Convertir le Mouvement.*)

Amos M. Babcock, Nora Springs, Iowa, U. S., 1st April, 1884; 5 years.

Claim.—1st. In a device for converting motion, the rack bar connecting with the operating machinery, in combination with shafts carrying revolving sleeves adapted to rotate independently of each other, shafts, gear wheels on the ends of the shafts engaging with each other, and means, substantially as described, for permitting the revolution of one sleeve, while the other sleeve is held from turning independently, as and for the purpose set forth. 2nd. In a device for converting motion, the rack-bar connecting with the operating machinery, in combination with a pair of shafts, gear wheels on the shafts ends of the shafts engaging with each other, sleeves on the shafts rotating independently of the same, pawls adapted to engage with teeth on the ends of the sleeves, said pawls acting to alternately hold the sleeves from turning, as set forth. 3rd. The shafts A, B carrying gear wheels at one end engaging with each other, and sleeves D, *D* on said shafts, provided with gear wheels *d*, *d*, in combination with a rack bar engaging with the gear wheels, and pawls F, F, adapted to engage with ratchet teeth on the ends of the sleeves, as set forth.

No. 19,001. Felly Plate for Wheels. (*Plaque pour Jantes de Roues.*)

Patrick W. McGuire, Lacon, Ill., U. S., 1st April, 1884; 5 years.

Claim.—1st. The fellyes A, A, provided with mortises or recesses in the exterior periphery of their meeting ends, in combination with the securing and bracing plate B, of a length and width equal to the mortises, and provided with bolt-holes at, or near each end, and adapted to be secured in place, substantially as and for the purposes set forth. 2nd. In combination with the fellyes A, A, recessed as described, and the contained bracing and securing plate B, fitting snugly therein, the felly-plate D provided with projection tests *E*, all arranged to be connected in proper relation with one another by securing bolts, substantially as and for the purpose set forth.

No. 19,002. Hay Knife. (*Couteau à Foin.*)

John McMillen, East Brantford, Ont., 1st April, 1884; 5 years.

Claim.—1st. In a hay, straw, or manure knife, the blade A constructed in the form and angle, as shown, and having the shank C attached about the centre of it, and bent at right angles as at *x*, *x*, and terminating in a handle B affixed to the same, substantially as and for the purpose specified. 2nd. In a hay, straw, or manure knife, the combination of the blade A, the shank C and handle B, substantially as and for the purpose specified.

No. 19,003. Halter. (*Licou.*)

John C. Lighthouse, Rochester, N.Y., U. S., 1st April, 1884; 5 years.

Claim.—1st. In a halter, the clamp D made in two parts, constructed with the two sockets *g*, *h* standing at right angles to each other, for receiving the rope, and provided at the bottom with a loop *k*, to receive the strap of the removable bit, as herein shown and described. 2nd. In a halter, the combination of the clamps D, D, attached to the nose piece, provided with sockets *g*, *h*, to receive the rope, and with loops *k*, *k*, to receive a bit, and the bit E provided with buckles and loops *m*, *m*, to buckle into the loops of the clamp, as herein shown and described. 3rd. In a halter, the combination, with the rope body provided with a throat lash *b*, which forms a continuation downward and provided with a ring *p* at its lower end, through which the stall ends of the rope pass to form a noose, as herein shown and described. 4th. In a halter, the combination, with the billet G, provided with a ring *p*, through which the stall ends of the rope pass, of a ring H on the side of the billet, to which said stall ends and also a hitching strap are attached, as herein shown and described.

No. 19,004. Nut Lock. (*Arrête-Ecrou.*)

Willis L. Moore, Rochester, Minn., U.S., 1st April, 1884; 5 years.
Claim.—1st. A nutlock consisting of a rigid non-elastic locking plate, provided with slot jaws and shoulder at one end, the jaws being adapted to pass beneath the nut and on the respective sides of the nut-carrying bolt, and the shoulder being adapted to bear against and engage the nut, and the other extremity being adapted to bear against and hold in position, a second nut at a distance from the first nut, whereby both of said nuts are locked; said locking plate being capable of being removed and reapplied either in the same place or elsewhere, without change or injury to its form or structure, substantially as and for the purpose set forth. 2nd. The non-elastic locking plate A having slot B, jaws C, shoulder D and end E, in combination with the nuts F and G and their bolts, the fish-plate H and the rail I with its lever flange K, the jaws C being adapted to pass beneath the nut F and on its respective sides of the bolt, which carries nut F, and the shoulder D being adapted to bear against, and engage the nut F, and the end E being adapted to partially pass by and being supported in position by the flange K to bear against and hold in position the nut G, all substantially as and for the purpose specified.

No. 19,005. Heating, Tempering and Annealing Furnace, &c. (*Fourneau, &c., pour Chauffer, Tremper et Recuire.*)

Aaron J. Nellis, Pittsburg, Penn., U.S., 1st April, 1884; 5 years.
Claim.—1st. In a heating furnace, the combination, with a single heating chamber, of a group or series of small fire-chambers arranged directly beneath the heating chamber, and connected therewith on one side and at different points along its length by flues, said heating chamber being provided with a series of flues leading from the opposite side thereof, whereby the products of combustion from the different fires cross the heating chamber transversely at different points along the lengths thereof, substantially as and for the purposes specified. 2nd. In a heating, tempering, and an annealing furnace, the combination of a series of fire-chambers B, B', B'', provided with flues b, b', b'', with two overhead heating chambers C, C', and a superimposed annealing chamber D, encompassed by the flues d, d', d'', substantially as and for the purposes specified.

No. 19,006 Temporary Binder. (*Reliure Temporaire.*)

James S. Shannon, Chicago, Ill., U.S., 1st April, 1884; 5 years.
Claim.—1st. The paper file described, consisting essentially of a receptacle composed of the folding-lids A and back B, and a paper-holding device attached within said receptacle and constructed to allow the papers to be removably secured thereto, substantially as described. 2nd. In combination with the receptacle comprising a back B and lids A flexibly joined, as shown, a binder detachably secured to the receptacle in the interior thereof, substantially as and for the purpose set forth. 3rd. In combination with a binder having projecting edges c, c', and with the back B of the receptacle A B, of plates Bi secured to the back B and arranged to admit the edges c, c' of the binder beneath the edges of said plates Bi, substantially as and for the purpose set forth. 4th. The paper file described, consisting essentially of a receptacle composed of the folding-lids A and back B, a paper-holding device within said receptacle and an outer case E, substantially as and for the purpose set forth. 5th. The paper file described, consisting of a receptacle composed of the flexibly joined parts A, A', B, a receptacle E flexibly joined at its angles e, e', and provided with a folding part or parts adapted to close one end thereof, a paper-holder or binder for the receptacle A A', and means for securing the binder in the latter receptacle, the whole being constructed for transportation in "knockdown" form and adapted to be conveniently set up for use, substantially as described. 6th. In a binder of the character described, the tubes D, joined with the hinge-wire D' by being embraced within the coils of the latter, substantially as and for the purpose set forth.

No. 19,007. Apparatus for Purifying Air in Houses, &c. (*Appareil pour Purifier l'Air dans les Maisons, &c.*)

Louis B. Rodrigue and Enoch Loranger, Ste. Anne de la Pêrade, Que., 1st April, 1884; 5 years.
Reclames.—1o. Les appareils destinés a purifier l'air dans les maisons ou edifices, quelconques etel que décrits. 2o. La feuille de toile en forme de cône tronqué, en combinaison avec les portes ou trous aspirateurs de quelque forme qu'ils soient, tel que décrits et pour les fins indiquées.

No. 19,008. Car-Coupling. (*Accouplage de Wagons.*)

Joseph Letourneau, St. Pierre, Que., 1st April, 1884; 5 years.
Reclames. 1o. L'agrafe B avec son point d'appui C, tel que décrit et pour les fins mentionnées. 2o. La châsse D, munie de ses rainures L, permettant le fonctionnement de la coulisse E, le tout tel que décrit et pour les fins mentionnées. 3o. La traverse mobile J et les leviers lateraux K, tels que décrits et pour les fins mentionnées, le tout tel que ci dessus décrit et figure aux dessins ci-annexés et pour les fins indiquées.

No. 19,009. Steam Fire Engine. (*Pompe à Incendie à la Vapeur*)

William H. Havens, Paterson, N.J., U.S., 2nd April, 1884; 5 years.
Claim.—The combination, with a locomotive boiler, its tender and tank, of a jet-pump siphon or water elevator located within said tank in the rear portion thereof, and provided with suitable steam connections and hose within easy reach of the train-hands from the platform of the tender, whereby the water in the tank may be forcibly discharged and utilized to extinguish fires on the train, or in close proximity thereto, substantially as set forth.

No. 19,010. Thrashing Machine. (*Machine à Battre.*)

George W. Morris, Brantford, Ont., 2nd April, 1884; 5 years.
Claim.—1st. In a thrashing-machine provided with an ordinary drum cylinder, having grooved steel beaters of the usual description, the combination of a concave formed of bars C, with a grate D inserted between each pair of bars, substantially as and for the purpose specified. 2nd. In the concave of a thrashing-machine, the bars C, having tennon ends to fit into the sockets a, made in the curved end castings B, and bolt-holes b, at equal distances apart in the centre of the bar C, in combination with a grate D, inserted between each pair of bars C, and having bolt-holes corresponding with those through the bars C, substantially as and for the purpose specified. 3rd. In a thrashing-machine, an open-bottom straw-shaker F, supported at an angle extending upwardly from the cylinder to a point above the trail-rake by the slanting spring hangers H, in combination with driving mechanism arranged to impart a longitudinal reciprocating motion to the shakers, substantially as and for the purpose specified. 4th. In a thrashing-machine, an open-bottom straw-shaker F, having a longitudinally reciprocating motion, in combination with an inclined bridge f, formed across the upper surface of the shaker F, substantially as and for the purpose specified. 5th. In a thrashing-machine, a jog-tray or grain carrier E, having a close bottom formed as described, and deriving a longitudinally reciprocating motion, as specified, in combination with perforations made through the bottom of the carrier E, immediately over the dressing-shoe K, substantially as and for the purpose specified. 6th. In a thrashing-machine provided with a vibrating grain-carrier and a vibrating shaker, a series of spring hangers H, the bottom end of each being connected to a spool h, having a hole through it to permit the passage of the pivot-pin used in connecting the hanger to the shaker or carrier, in combination with the brackets g, fixed to the frame of the machine and arranged to adjustably hold the spring hangers, substantially as and for the purpose specified. 7th. In a thrashing-machine, a straw-shaker F, located above the grain-carrier E, both being supported from the frame of the machine by the spring hangers H, in combination with the double crank-shaft I, connected by the rods J to the carrier E, and shaker F, in order that the revolving of the crank-shaft shall impart a longitudinal reciprocating motion to the said shaker and carrier, the cranks being set so that the shaker and carrier shall travel in opposite directions to each other. 8th. In a thrashing-machine provided with a dressing-shoe K, at one end, and a combined smutter and fanning-mill at the other end, an elevator L arranged to convey the grain from the dressing-shoe K to the chamber N, in combination with the worm-conveyor O, arranged to carry the grain through the chamber N to the smutter, s substantially as and for the purpose specified. 9th. In a thrashing-machine, in which the grain is conveyed from the dressing-shoe K to the chamber N, by the elevator L, a revolving worm conveyor O, in combination with the slide T, substantially as and for the purpose specified. 10th. In a thrashing machine, a chamber N, provided with a worm conveyor O, in combination with the smutter barrel P, having a roughened interior surface and revolving beaters Q within it, substantially as and for the purpose specified. 11th. In a thrashing-machine, a smutter barrel P, provided with revolving toothed beaters Q, the teeth in the said beaters being set spirally, so as to convey the grain from the mouth of the conveyor to the port where it is discharged from the smutter to the finishing sieve B, in combination with the fan S, arranged to send a blast through the grain, as it falls from the smutter-barrel P to the finishing sieve P.

No. 19,011. Machine for Making Cigarettes. (*Machine à Cigarettes.*)

James Burns, Brooklyn, Alexander Buckman, Schodaek Depot, Frank P. Harder, James R. Downer, Castleton, Abram L. Schermehorn and John S. Baker, Stuyvesant, N. Y., U.S., 2nd April, 1884; 5 years.
Claim.—1st. In a cigarette machine, the combination of a reciprocating bed-die D and sliding plate d having a longitudinal groove d² whose transverse form consists of a segment of more than a semi-circle, as herein set forth, and a reciprocating upper die E having in its lower end a longitudinal concave groove e that will combine with the groove d² to form a complete circle, as herein described, with the means, substantially as specified, for reciprocating the said dies D and E toward and from each other, as and for the purpose herein set forth. 2nd. In a cigarette machine, the combination, with a vertically reciprocating bed-die D having a vertical sliding plate d which forms part of said die, the die and plate having a longitudinal groove d² consisting of more than a semi-circle, as herein described, the cams D¹ and D² and springs d³ for actuating said bed-die, of the folders P and mechanism, substantially as described, whereby the said folders are caused to turn over in consecutive order, first the pasted edge and then the unpasted edge of the wrapper, whereby the adhesion of the wrapper around the molded form of tobacco is effected, substantially as herein specified. 3rd. In a cigarette machine, the combination with a reciprocating bed-die D provided with a reciprocating sliding plate d and a tobacco feeding mechanism, substantially as described, for feeding the tobacco into the machine, of a vertically reciprocating upper die E arranged in relation to said bed-die and having on its lower end a cutting edge, as herein set forth, the cross bar F, and mechanism, substantially as described, for reciprocating the dies D and E, in the manner and for the purpose herein specified. 4th. In a cigarette machine, the combination, with the box F and bed-die D, the latter containing a sliding plate d, the said die and plate having a longitudinal groove d² formed therein, as herein described, and the said die being provided with a strip d³ of yielding material for clamping one edge of a wrapper between said box and die, as herein set forth, and mechanism, substantially as described, for feeding the tobacco into the machine, of the upper die E having a reciprocating movement and adapted to sever a charge of tobacco from the incoming supply and to force the said charge and its enclosing wrapper into the groove d² of the bed-die D and sliding plate d, as herein specified. 5th. In a cigarette machine, a reciprocating bed-die adapted to retain a molded charge of tobacco and its enclosing wrapper folders for turning over and causing the edges of

said wrapper to adhere, a reciprocating upper die adapted to cut off the required charge of tobacco and force it with its enclosing wrapper down into the groove of the bed-die, and a sliding plate adapted to reciprocate in the bed-die for the purpose of dislodging the finished cigarette from the groove in said bed-die, in combination with the mechanisms, substantially as shown and described, for reciprocating said bed-die, sliding plate and upper die and for actuating the said folders, in the manner and order herein specified. 6th. In a cigarette machine, the combination, with the reciprocating bed-die D, reciprocating upper die E and folders P, as herein shown and described, of the mechanisms, substantially as described, for feeding in the wrapper and fastening the edge thereof, in the manner herein specified. 7th. In a cigarette machine, the combination, with a pasting-wheel K and wrapper bed L, of the spring *l* arranged on the front edge of said wrapper bed for the purpose of raising the pasted edge of the wrapper, as herein specified. 8th. In a cigarette machine, the wrapper feeding device consisting of a sliding bar N, frictionally retarded, substantially as set forth, and a bifurcated lever N₁ pivoted to one end of the sliding bar N and provided with a pendent arm *n*₅, the said pendent arm being connected to mechanism for actuating the said wrapper feeding mechanism in such manner that a combined vibrating and sliding movement will be imparted to the said bifurcated lever, as and for the purpose specified. 9th. In a cigarette machine, the combination, with a wrapper-feeding device consisting of the sliding bar N, and a bifurcated lever N₁, pivoted to said sliding bar and adapted to operate, as herein set forth, the wrapper bed L and vibrating knife M, of the bed-die D, upper die E, folders P, and the several mechanisms, substantially as described, for actuating the said parts, in the manner herein specified. 10th. In a cigarette machine, the wrapper-feeding mechanism, herein described, consisting of a sliding bar N and a bifurcated lever N₁ pivoted to one end of said sliding bar and provided with a pendent arm *n*₅, for the purpose of giving to said bifurcated lever a combined vibratory and sliding movement, as herein set forth, in combination with an ejector *n*₇ attached to the bifurcated lever N₁ and adapted to effect the discharge of the cigarette, as herein specified. 11th. In a cigarette machine, the ejector *n*₇ provided with a facing *n*₈, as herein described, the said ejector being adapted to reciprocate and to effect the cleaning of the groove *d*² of the bed-die D, in the manner herein specified. 12th. In a cigarette machine, the combination, with a tobacco-feeding mechanism, a reciprocating upper die E, having the presser plate G attached directly thereto, and a cut-off I and box F, all arranged to operate as herein described, of the several mechanisms, substantially as described, for actuating the said upper die and cut-off, in the manner herein specified. 13th. In a cigarette machine, the combination, with a reciprocating upper die E, bed-die D having the groove *d*² and folders P, adapted to move consecutively, as herein set forth, of the sliding plate *d* adapted to discharge the finished cigarette from the groove *d*², and the ejector *n*₇, as and for the purpose herein specified. 14th. In a cigarette machine, the reciprocating bed-die D having a groove *d*² that consists of a segment greater than a semi-circle, whereby turned edges are formed at the opposite sides of said groove for the purpose of retaining the molded cigarette in place, and a sliding plate *d* adapted to dislodge the finished cigarette from the groove *d*², in the manner herein specified. 15th. In a cigarette machine, the wrapper-feeding mechanism, substantially as described, and consisting of a sliding bar N and a bifurcated lever N₁, having the free end of its limbs *n*₅ faced on the underside with rubber, or other elastic material, for producing a more perfect adhesion to the wrapper; the said bifurcated lever being pivoted to one end of the sliding bar N and having at its pivoted end a pendent arm *n*₅, as herein described, in combination with mechanism, substantially as described, whereby a combined sliding and vibrating movement is imparted to the bifurcated lever N₁, as and for the purpose herein specified. 16th. In a cigarette machine, the combination, with the lower die D and sliding plate *d* having a longitudinal groove *d*², as herein set forth, of the folders P and the mechanism, substantially as described, for actuating the said folders in such manner that they will first fold over one edge of the wrapper and hold it in place until the second edge is folded over and adhered to the first, in the manner herein specified. 17th. In a cigarette machine, the combination, with an upper die E having a groove *e* in the lower end, as herein described, of the reciprocating wiper Q adapted to clean the groove *e*, in the manner herein specified.

No. 19,012. Wire Fence. (*Clôture en Fil de Fer.*)

James B. Oliver, (Assignee of John Stubbe), Pittsburg, Pa., U. S., 2nd April, 1884; 15 years.

Claim.—1st. A wire for fences composed of strands twisted together, having sheet metal plates secured between them by cuts or notches formed in the edges of the plate, substantially as and for the purposes described. 2nd. The combination of twisted strand wires, sheet metal plates secured between them by cuts or notches formed in the edges thereof, and provided with turning out the points formed by cutting the edges, substantially as and for the purposes described. 3rd. The combination of the wires *a*, *b*, with sheet metal warming-plates cut diagonally at the corners, forming dovetailed sections and secured to the wires by passing the latter between opposite sections and the adjacent points of the intermediate sections, substantially as and for the purposes described.

No. 19,013. Churn. (*Baratte.*)

Samuel L. Nelson, Baldwyn, Miss., U. S., 2nd April, 1884; 5 years.

Claim.—In a churn, the combination of the casting B, having the extension C upon its top, and the support F, provided with the small projections *c*, with the clamping piece J, provided with notches, screw O, and the churn dashers, substantially as described.

No. 19,014. Fence Post. (*Pieu de Clôture.*)

Thomas S. Sharon, St. Thomas, Ont., 2nd April, 1884; 5 years.

Claim.—1st. A conical metallic fence post A, constructed substantially as shown and described and for the purpose specified. 2nd. The combination of a conical metallic fence post A, buckles B, B, barbed wire strands D, D and block C, substantially as shown and described and for the purpose specified.

No. 19,015. Rotary Steam Engine.

(*Machine à Vapeur Rotatoire.*)

William Duffield, London, Ont., 2nd April, 1884; 5 years.

Claim.—1st. The combination, with an outer cylinder A and an inner cylinder or drum E journalled eccentrically therein, of the wing J, shaped substantially as shown and described, moving partly in recess I, and provided with flange K and spring L, and pivoted at *c* near edge of said recess, substantially as shown and specified. 2nd. In combination with the wing J, of the arbour or guide N and pin or roller M, shaped substantially as shown and specified. 3rd. In combination with the outer cylinder A, of a following plate P screwed into said cylinder so as to bear against the face of the inner cylinder E, substantially as shown and specified. 4th. In combination with cylinder A and shaft C, of plugs R, R, bearing on ends of said shaft, and the set screws S, and plates T bearing upon top of said shaft C, substantially as shown and specified.

No. 19,016. Creamer. (*Boîte à Lait.*)

William Howes, Sussex, N.B., 2nd April, 1884; 5 years.

Claim.—1st. The combination, with a cylindrical can A provided with straight and level bottom B, having a pocket B₁ provided with tubular spout C and stopper C₁, the base provided with two legs D placed approximately in the centre line of the can, at a right angle to the centre line of the spout, a glass panel E placed in the side of the can between the tubular spout and one of the legs and the ventilated cover or lid G. 2nd. The combination, with a creamer, two legs D secured to the base and placed in a straight line running approximately through the centre of the can, and at a right angle to the centre line, of the tubular spout C, all substantially as set forth and for the purpose described.

No. 19,017. Wire Wheel. (*Roue Métallique.*)

James E. Ladd, Brume, Que., 2nd April, 1884; 5 years.

Claim.—1st. In a wheel, substantially such as described, the spokes being made from wire strands adapted to pass through holes in the rim and crossing thereat, and having one of their ends connected to a disc placed upon and rigidly attached at one end of the hub, and their other ends attached to another disc loosely mounted upon the hub at the other end, and adapted to be moved inwards or outwards, by means substantially as described and for the purposes set forth. 2nd. The combination, with the rim A, provided with holes *a*, *a*, of the wires E, discs C, E, hub B, and nut D, having an annular groove made therein, substantially in the manner and for the purposes described.

No. 19,018. Car-Coupler. (*Accouplage de Wagons.*)

Joseph K. Nye, Irwin C. Hunsicker, Skippackville, David D. Nye, William D. Heebner and Isaiah A. Anders, Lansdale, Pa., U. S., 2nd April, 1884; 5 years.

Claim.—1st. In a car-coupling, the combination, with the draw-head having the horn or hook B, and the sliding plate K, provided with the single cross-piece H, with its ends projecting through slots in the draw-head and beyond the sides of the latter, of the bail or frame C, pivoted to the sides of the draw-head and having ends *C*₁ projecting beyond its pivot and adapted to be acted upon by the ends of the cross-piece H, as shown and described and for the purpose set forth. 2nd. The combination, with the draw-head A, having a projection B, and provided with side slots F, and a bottom slot G, of the cross-piece H, projecting through the slots F and from the sides of the draw-head the bottom guide projection J, on the cross-piece the plate K, secured to the cross-piece and of the bail-shaped frame pivoted to the sides of the draw-head and having its ends *C*₁ extending beyond its pivotal point and acted upon by the ends of the cross-piece H, substantially as herein shown and described.

No. 19,019. Lock-up Safety Valve.

(*Souape de Sûreté Sous Clé.*)

Robert Mitchell, (Assignee of John Porteous), Montreal, Que., 2nd April, 1884; 5 years.

Claim.—The ball joint C, in combination with the regulating screw B and the long spindle O, in combination with the ring E, the valve G and the brass ring F, also the spring chamber L, for the purpose described.

No. 19,020. Chimney Top and Ventilator.

(*Tête de Cheminée et Ventilateur.*)

John D. Wright, London, Eng., 2nd April, 1884; 5 years.

Claim.—1st. An improvement in the construction by strong-shaped continuous stays running from top to bottom of a spiral chimney top and ventilator, which accelerate the up-currents without noise or motion thus insuring a strong and durable article. 2nd. The lever or cover, which allows the sweep's brush to pass up without injury to the top, and on being drawn back, causes the cover to close again. 3rd. The ornamental top for ventilator, which whilst it prevents down-draught, or rain and snow from entering, has through being a fixture, great advantages over all movable covers and greatly promotes steady and constant up currents. This ventilator can be modified, as desired, for any purposes of ventilation.

No. 19,021. Dumping Bottom.

(*Fond à Bascule.*)

William H. D. Newth, Detroit, Mich., U. S., 2nd April, 1884; 5 years.

Claim.—1st. The bottom of a car, wagon, or cart body, or ash-pan, formed of a series of overlapping slats eccentrically journalled in the sides or ends thereof, the journal of one end of said slats projecting through one of the walls of said body, and each of said journal ends projecting provided with a crank arm, all of said crank arms being pivotally connected with a common lever, in combination with a

stop adapted to lock the slats in position, substantially as described. 2nd. The bottom of a car, wagon, or cart body, or ash-pan partially formed of slats eccentrically journalled in the sides or ends of such boxes, and overlapping the imperforated portions of said buttons, in combination with means, substantially as described, for simultaneously dumping or partially rotating such slats, and means for locking said slats in position, substantially as specified.

No. 19,022. Metallic Railroad Tie.

(*Traverse Métrallique de Chemin de Fer.*)

Charles H. Van Orlen, Catskill, N. Y., U. S., 2nd April, 1884; 5 years.

Claim.—1st. The combination of the metallic tie A, provided with the flanges B, with the block C, held in place by the U-shaped bars E, G, placed upon either side of said block, the arms of said U-shaped bars being attached to the flange B by bolts, keys, or other suitable means, passing through said arms and flanges, substantially as set forth. 2nd. The combination of the tie A B, having the rail supporting block C, provided with the wear plate I, resting against the shoulder M, of bolts for securing said wear plate and the rail in place on the tie, substantially as set forth. 3rd. The combination of the flanged and shouldered tie A B M, with the rail chairs J, J, the outer ones of which are secured by bolts passing vertically through them and the tie, and the inner ones of which are secured by bolts passing through them and the tie in an inwardly inclined direction, whereby a firm support against lateral strain is afforded the rails, substantially as described.

No. 19,023. Furnace for Reducing Ores and Metals.

(*Fourneau pour Réduire les Minerais et Métaux.*)

Victor Collian, Detroit, Mich., U. S., 2nd April, 1884; 5 years.

Claim.—1st. In a furnace for reducing ores and metals, the combination of chamber D, exterior chamber A, a common combustion chamber below the two chambers, the flues D₂ communicating with said chambers, fan for creating a draft down the flues D₂, and the tank H having spouts H₂ opening into flues D₂, substantially as described. 2nd. In a furnace for reducing ores and metals, the combination of chamber D, chamber A, a common combustion-chamber below said chambers, a revolving hopper E for feeding ore to chamber D, flues D₂ communicating with chambers A and D, and a device for creating a downward draft through said flues, substantially as described. 3rd. In a furnace for reducing ores and metals, the combination of chambers A and D, a common combustion-chamber below said chambers, and a sliding lining to the chamber D, substantially as described. 4th. In a furnace for reducing ores and metals, the combination of chambers A and D, the flues D₂ contracted at their upper ends, and the tanks H having spouts H₁ communicating with flues D₂, substantially as described.

No. 19,024. Stove Pipe Thimble.

(*Double de Tuyau de Poêle.*)

Michael McClure, Syracuse, N. Y., U. S., 2nd April, 1884; 5 years.

Claim.—1st. The combination of the head A provided with the collar a, the cylinder C provided with the flange c and the rivets r passing through the head outside of the flange of the cylinder and shown. 2nd. In combination with the telescopic cylinders C, C, and springs s, the head A provided with the aperture c and the sunken for the purposes set forth. 3rd. In combination with the telescopic cylinders C, C, and springs s, the head A provided with the aperture c, and the lug or hook g projecting across said aperture, substantially in the manner described and shown, and for the purposes set forth.

No. 19,025. Fence.

(*Clôture.*)

John Newton, Clifford, Ind., U. S., 2nd April, 1884; 5 years.

Claim.—1st. In a fence, the combination of the slotted posts secured at the bottom between strips E and having stakes F, with the fence-rails suitably connected together, the bottom rails being made other than the others and abutting against said strips E, while the other rails pass through the slots of said posts and have their adjacent ends fitting together, all substantially as shown and described. 2nd. In a fence, the combination of the slotted posts with the fence-rails suitably connected together, the bottom rail being made shorter to abut against the base-piece of said posts, and the other rails projecting through the slot of the posts and provided with the pieces c, c, secured together so as to leave a space c₂, the edges of the posts fitting in this space, as set forth.

No. 19,026. Brush.

(*Brosse.*)

Charles W. Meakins, Hamilton, Ont., 2nd April, 1884; 5 years.

Claim.—1st. A brush made in sections, for the purposes specified. 2nd. A brush made in sections and hinged together, for the purposes specified. 3rd. In a sectional brush, the combination of the sections and the wire springs C, for the purpose specified.

No. 19,027. Car-Coupler and Buffer.

(*Accouplage et Tampon de Chars.*)

Clinton Browning, Shousetown, and Lindsay V. McCutcheon, Alleghany, Pa., U. S., 2nd April, 1884; 15 years.

Claim.—1st. A combined car buffer and platform having bearing faces at or near the ends thereof, and depressed in the centre between them, substantially as and for the purposes set forth. 2nd. The combination of the buffer-platform and yielding pressure-bar, the pressure-bar being pivoted to the platform close to the bearing-face thereof, substantially as and for the purposes set forth. 3rd. In yielding car-platforms, the combination of the buffer-platform, central buffer bar pivoted thereto, and spring mechanism around said bar

for projecting the buffer-platform, substantially as and for the purposes set forth. 4th. In yielding car-platforms, the combination of the buffer-bar C having the oblong pivot-hole c₂, and the buffer-platform pivoted to said bar through said pivot-hole, substantially as and for the purposes set forth. 5th. In yielding car-platforms, the combination of the buffer-bar C provided with the oblong pivot-hole c₂, and T-head t₁ having a flat bearing-face, with the buffer-platform pivoted to said bar through said hole, substantially as and for the purposes set forth. 6th. In yielding car-platforms, the combination of the buffer-platform B having the pivotal flanges b₂, and buffer-bar C pivoted thereto, and the transverse beam A₂, mortised for the reception of said flanges, and having the plate w₁, substantially as and for the purposes set forth. 7th. In yielding car-platforms, the combination of the buffer-platform B, buffer-bar C pivoted thereto, spring mechanism for projecting the buffer-platforms, and the cover a₁ on the car-platform, substantially as and for the purposes set forth. 8th. In combination with the draw-head and buffing apparatus, supported independently above the same, and having the resistance-plate e supported in the stop-brackets e₁ of the standard or frame E carrying said resistance-plate and extending down therefrom, and so connected with the neck of the draw-head as to permit the draw-head to slide back independently in buffing, but to be drawn forward with the draw-head on draft strain, substantially as and for the purposes set forth. 9th. The combination, with the draw-head and buffing apparatus supported independently above the same and having the resistance-plate e, of the standard or frame E carrying said resistance-plate and extending down therefrom, and provided with the rings f, f, fitting around the neck of the draw-head, the key f₂ passing through the said neck and stop brackets e₁, substantially as and for the purposes set forth. 10th. In combination with the buffer-platform B, pivoted to the buffer-bar C, and spring d, the stop brackets e₁ and the standard or frame E carrying the resistance-plate e and connected to the draw-head by a sliding connection, substantially as and for the purposes set forth. 11th. In combination with the draw-head having the jaws G, G₁ and the interlocking lever H journalled in the entering jaw G, of the bent or coiled spring r confined in said entering jaw and pressing against said lever, substantially as and for the purposes set forth. 12th. In a double-jawed draw-head, the entering-jaw G having a nose y, pivoting leaves p₁ and curved flange or flanges p₃, for protecting the pivoting leaf or leaves of the interlocking-lever, substantially as and for the purposes set forth. 13th. In combination with the double-jawed draw-head having the nose y, pivoting leaves p₁, recess p and curved flanges p₃, the interlocking lever H having the pivoting leaves a₁ fitting between the leaves p₁, back of the curved flanges p₃ and on either side of the recess p, and the pivoting pin p₂, substantially as and for the purposes set forth. 14th. In combination with the double-jawed draw-head having the recess p₁ in the pivoting jaw G, the interlocking lever H having the operating arm h extending within the draw-head, and the leaves n having the flanges n₂ extending over said recess, substantially as and for the purposes set forth. 15th. The draw-head having the jaws G, G₁, the horizontal strengthening ribs m, m₁ and the vertical walls formed of the plates m₂ supported by said ribs, substantially as and for the purposes set forth. 16th. The combination of the railing t having the slot t₁ and shouldered space t₂, with the operating lever S and pivoted block u, substantially as and for the purposes set forth. 17th. The combination of a bifurcated draw-head, interlocking lever journalled therein having the arm h, operating-lever S, and connecting bar s having the slot v, substantially as and for the purposes set forth.

No. 19,028. Car-Coupling.

(*Accouplage de Wagons.*)

Clinton Browning, Shousetown, and Lindsay V. McCutcheon, Alleghany, Pa., U. S., 2nd April, 1884; 15 years.

Claim.—1st. In combination with a double-jawed draw-head, a shouldered interlocking lever journalled or otherwise pivoted at the end of one jaw, and having an operating arm extending back within the body of the draw-head spring, mechanism pressing against said arm for holding the lever in its locking position and apparatus for withdrawing the lever, substantially as set forth. 2nd. In combination with a double-jawed draw-head, a shouldered interlocking lever journalled or otherwise pivoted at the end of one jaw and having an operating arm extending back within the body of the draw-head, a spring confined between said arm and the body of the draw-head, and apparatus for withdrawing the lever connected to the end of said arm, substantially as set forth. 3rd. In twin couplings, the combination of the pivoted interlocking lever B having the shoulder b with the double-jawed draw-heads A, where the pivoting jaws a of said draw-heads are bevelled or cut away as at a₁, for the reception of the face of the shoulder b of the lever in the opposite draw-head, substantially as and for the purposes set forth. 4th. In car couplings, the combination with the double-jawed draw-head having a recess in the entering jaw back of the end thereof, of a locking lever working in said recess and having a journal face adapted to work against or within one face thereof, substantially as and for the purpose set forth. 5th. In car couplings, the combination, with double-jawed draw-head having a recess in the entering jaw back of the end thereof, of a locking lever working in said recess against one face thereof, and ribs or lugs to hold the lever within the recess, substantially as set forth. 6th. In car couplings, the combination, with the double-jawed draw-head having the entering-jaw a, convex face c and recess c back of the end of said jaw, of the locking lever B having the concave journaling face e and lip or lips f₂, substantially as and for the purposes set forth. 7th. In car couplings, the combination, with the double-jawed draw-head having the entering jaw a, recess c back of the end of said jaw, and slot d, of the locking lever journalled within said recess and having the operating arm b fitting within said slot, and the pin or stop t₁, substantially as and for the purposes set forth. 8th. In car couplings, the combination, with the double-jawed draw-head having the entering jaw a, recess c and slot h, of the locking lever working in said recess, and having the journal face e, and ribs or lugs e₁, and operating arm b₁ and the pin or stop t₁, substantially as and for the purposes set forth. 9th. The bifurcated draw-head having the entering jaw provided with an opening for a coupling link, and a coupling pin hole in the nose thereof, in combination with an interlocking lever journalled in said jaw back, of said coupling pin

hole and independent thereof, substantially as and for the purpose set forth. 10th. The bifurcated draw-head having the entering jaw provided with the opening *d*, and recess *c* having the journaling face *c*, and ribs *c* extending across said recess, in combination with the interlocking lever *j* journalled in said recess across said face *c*, and having grooves *b* fitting over said ribs, substantially as and for the purposes set forth. 11th. The bifurcated draw-head having the entering jaw *a* provided with the opening *d*, and the journaling recess *c* having the curved faces *c*, in combination with the interlocking lever journalled in said recess and having the operating arm *h* and shoulders *e*, substantially as and for the purposes set forth. 12th. The combination of the bifurcated draw-head, the interlocking lever journalled in the entering jaw and having the operating arm *h*, and the spring *g* having one or more coils *g* and secured within the draw-head, and pressing against said arm *h*, substantially as and for the purposes set forth. 13th. The combination of the bifurcated draw-head provided with teats or lugs *g* in the neck thereof, the interlocking lever journalled in the entering jaw thereof and provided with the operating arm *h*, and the spring *g* having the coils *g* fitting over said teats, and extending back of said operating arm, substantially as and for the purposes set forth. 14th. In combination with a bifurcated draw-head and interlocking lever journalled therein, an operating bar supported in or on said draw-head and extending out on each side thereof, and connected with said interlocking lever, substantially as and for the purposes set forth. 15th. In combination with the bifurcated draw-head and an interlocking lever journalled therein, a sliding bar passing transversely through said draw-head and extending out on either side thereof and connected with said interlocking lever, substantially as and for the purposes set forth. 16th. In combination with the bifurcated draw-head and interlocking lever journalled therein and having the arm *h*, the sliding bar *k* extending transversely through said draw-head, and having slot *m* in which said arms *h* fits, substantially as and for the purposes set forth. 17th. In combination with the bifurcated draw-head and interlocking lever journalled therein, the sliding bar *k* extending transversely through the draw-head and connected with the lever and provided with suitable stop apparatus engaging with the draw-head to hold the lever in its uncoupled position, substantially as and for the purpose set forth. 18th. In combination with the bifurcated draw-head having the shoulder *q* thereon and the interlocking lever journalled therein, the spring *p* and sliding bar extending through the draw-head and connected to the lever and having the shoulder *r* on the upper edge thereof, substantially as and for the purposes set forth. 19th. In combination with the bifurcated draw-head and the interlocking lever journalled therein and having the arm *h*, the sliding bar *k* extending through the draw-head, and having the slot *m* and lug *t*, and the pin *u*, substantially as and for the purposes set forth.

No. 19,029. Electric Arc Lamp.

(*Lampe Electrique à Arc.*)

Elihu Thomson, Lynn, Mass., U. S., 2nd April, 1884; 5 years.

Claim.—1st. The combination, with the device controlling the separation and feed of the carbons in an electric lamp, of main and derived circuit coils or helices acting in conjunction, to impart movement to a core or armature in the same direction, and intermediate mechanism between the core or armature and said controlling device for imparting movement thereto, in one direction, upon a moderate pull of the core or armature, and a reverse or return movement of said device upon a stronger pull and continued movement of said core or armature. 2nd. The combination, with a carbon carrier, of mechanism for lifting and controlling the feed of same, main and derived circuit coils re-enforcing one another directly or indirectly in their pull upon a core or armature, and intermediate mechanism for reversing the movement of the lifting and controlling mechanism where said core or armature has passed a certain point in its movement under the influence of the derived circuit coil. 3rd. The combination, with a lifting and releasing clutch, of main and derived circuit coils re-enforcing one another in their action upon the clutch, and intermediate reversing mechanism for causing the release of the clutch upon an increased pull due to an increased flow of current in the derived circuit coil. 4th. In an electric lamp, two solenoids or electro-magnets acting conjointly upon one or more cores or armatures, in combination with a clutch and suitable intermediate mechanism for first raising and locking said clutch upon the carrier, and afterwards lowering and releasing the same upon a continued movement of the core or armature in the same direction. 5th. The combination of a carbon carrier, main and derived circuit coils, a lifting clutch for separating the carbons by the combined and conjoint action of the direct and derived circuit coils, and means for causing the release of said carbon upon an increased action of the derived circuit coil. 6th. The combination, in an electric lamp, of a clutch, a toggle or knee joint, one or more cores or armatures connected directly or indirectly with said knee joint, and main and derived circuit helices acting directly or indirectly but conjointly upon said cores or armatures. 7th. The combination of the toggle or knee *n*, or its equivalent, with the separating and feeding mechanism for the carbon, and two electro-magnets or solenoids exerting attracting forces in the same direction to actuate said knee or toggle joint, whereby said separating and feeding mechanism is made to adjust the carbon.

No. 19,030. Cultivator. (*Cultivateur.*)

Elliott T. Gregg, Marshall, Mich., U. S., 2nd April, 1884; 5 years.

Claim.—1st. In a cultivator, the rubber or pulverizer *d* having a series of teeth, in combination with the knife or cutter *a* connected by arms or brackets to the rubber or pulverizer, arranged and operating, so that the knife or cutter will cut slightly below the surface of the ground, and the rubber, with its teeth, will pulverize the loosened earth, for the purpose set forth. 2nd. In a cultivator, the combination of the pulverizer *d*, having teeth, of the knife or cutter *a* connected to the rubber or pulverizer by arms or brackets, a hand truck *f*, and standards or uprights *g* connecting the said pulverizer to the said truck, as and for the purpose set forth.

No. 19,031. Stove Grate. (*Grille de Poêle.*)

Edgar W. Anthony, Boston, Mass., U. S., 2nd April, 1884; 5 years.

Claim.—1st. In combination with a rectangular or square grate *a*, constructed and adapted to be operated, substantially as and for the purposes described. 2nd. A stove or furnace provided with a rectangular or square grate, consisting of the fingered bars *a*, *a*, surrounding the opening *B*, adapted to be reciprocated as specified, and the grate *C*, below said opening *B*, capable of being tipped towards the ash pit door, and a clearing space *D*, between the upper surface and the lower surface of the upper grate, substantially as and for the purposes specified. 3rd. The combination, in a rectangular or square grate of the grate bars *a*, *a*, pivoted to each other and to the grate frame, as specified, and having fingers *a*⁵, *a*⁶, all substantially as and for the purpose described. 4th. In a square or rectangular grate, the combination of the bars *a*, *a*, pivoted to each other and to the grate frame, and having fingers *a*⁵, *a*⁶, the fingers of the back bar being more inclined than those of the front, all substantially as and for the purposes described. 5th. The combination, in a square or rectangular grate, of the bars *a*, *a*, pivoted to each other and to the grate frame, as described, and having the fingers *a*⁵, *a*⁶, the corner or end ones of which are shaped to prevent clogging at the corners of the grate, all substantially as described.

No. 19,032. Cover and its Attachment for Sap Buckets. (*Couvercle et son Ajutage pour Seaux à Sève.*)

Richard D. Wells, East Farnham, Que., 2nd April, 1884; 5 years.

Claim.—The combination, of the cover *B*, constructed without flanges, with its comb or hood *F*, when required and its securing wire rod *C*, with a sap bucket, substantially as and for the purposes hereinbefore set forth.

No. 19,033. Process for the Manufacture of Dextrine, Glucose, Maltose and Grape Sugar from Wheat, Corn, etc. (*Procédé de Fabrication de la Dextrine, Glucose, Maltose et du Sucre de Raisin, avec du Blé, Maïs, &c.*)

Thomas P. Kingsford, Oswego, N. Y., U. S., 2nd April, 1884; 5 years.

Claim.—The process applicable to manufacturing dextrine, glucose, maltose, and grape sugar, herein described, which consists in soaking wheat, corn or other starch producing substance in lime water, then grinding, then treating with sulphurous acid gas, then applying nitric acid, and finally subjecting to steam pressure according to the product desired.

No. 19,034. Process for the Manufacture of Starch from Wheat, Corn, etc. (*Procédé de Fabrication de l'amidon avec du Blé, Maïs, &c.*)

Thomas F. Kingsford, Oswego, N. Y., U. S., 2nd April, 1884; 5 years.

Claim.—1st. In the art of manufacturing starch, the employment successively in the order named, of water saturated with hydrated lime, and (after grinding) sulphurous acid gas for treating starch producing substances, substantially as set forth. 2nd. The process of manufacturing starch, herein described, which consists in soaking and softening grain, or other starch producing substance in water saturated with hydrated lime, then grinding it in the presence of water, then treating the ground mass with sulphurous acid gas, and then separating the freed starch from the mass, substantially as set forth.

No. 19,035. Railway Torpedo.

(*Torpille de Chemin de Fer.*)

Cyril B. Cole, Seymour, Ind., (assignee of James H. Bevington, Cleveland, Ohio.) U. S., 2nd April, 1884; 5 years.

Claim.—The combination, with a fork provided with the recess *e*, of a torpedo provided with the spring *B*, the ends of which are adapted to be secured in the recesses of the fork, substantially as set forth.

No. 19,036. Pendulum Level.

(*Niveau à Pendule.*)

Charles J. Parkhurst, (Co-inventor with Albert W. Parkhurst.) North Adams, Mass., U. S., 2nd April, 1884; 5 years.

Claim.—1st. In a pendulum level, plumb or inclinometer, the shaft or pivot of the index hand connected with the pendulum shaft as described. 2nd. In a pendulum level, the combination of the index hand, the pendulum, and multiplying bevel gears connecting said pendulum and index hand, and adapting said index hand to be moved over a greater distance than the pendulum, substantially as described. 3rd. In a pendulum level, the pendulum and the index hand arranged on axes at right angles one with the other, and combined, substantially as described, whereby the index hand is made to move through an entire circle, in the movement of the pendulum, or through an arc of ninety degrees. 4th. In a pendulum level, plumb or inclinometer, the pendulum suspended between elastic plates or springs, adapted to grasp and hold said pendulum at any desired point. 5th. The pendulum actuating the index hand pivoted in any desired position, in combination with means for forcing said plates apart and freeing the pendulum, substantially as described. 6th. In a pendulum level, plumb or inclinometer, the pendulum supported between yielding side plates, in combination with the slide for separating said plates, and the plumb shaft and level for operating said slide, substantially as described. 7th. The combination, in a pendulum

lum level, plumb or inclinometer, of the pendulum, the index hand with its pivot at right angles to the pendulum shaft, and geared thereto the elastic plates or springs for holding said pendulum at any desired point, and means for adjusting said plates, all substantially as described.

No. 19,037. Baling Press, (*Presse d'Emballage.*)

James McIver, Houston, Texas, U. S., 2nd April, 1884; 5 years.

Claim.—1st. The combination of the base, the press box, the frame at the front end of the base, the vertical shaft journalised in said frame, the horizontal wheel or disk having upwardly projecting pins or studs, the longitudinally reciprocating follower having a pivoted stem, and the lever pivoted to the front end of said stem and to the base of the machine, as set forth. 2nd. The combination of the base, the press box, the longitudinally reciprocating follower having a pivoted stem, the horizontal wheel having upwardly projecting arms or studs, a bracket projecting laterally from the base, a lever pivoted to said bracket by a vertical pin, and having its inner end pivoted to the follower stem, and a brace connecting the upper end of the pivoting pin with the base of the machine, as set forth.

No. 19,038. Window Bead Fasteners, (*Mode d'ajustage des Baguettes de Fenêtres.*)

Horace F. Newmeyer, Macungie, Pa., U.S., 2nd April, 1884; 5 years.

Claim.—1st. A device for fastening window-beads, comprising a bolt provided at its inner end with two hook shanks, substantially as herein shown and described. 2nd. In a device for fastening window stop-heads, the bolt A, provided with a milled head and a head C, the latter having two hooks E, and the shoulders a, b, for the purposes set forth. 3rd. The combination, with a screw held in the end of an aperture in the sash frame, and provided with a cross-head, of a bolt passed through the bead, which bolt is provided at its inner end with two hooks, for the purposes set forth. 4th. The combination, with a screw K, having a head L, and held in the end of an aperture in the window casing, of the bolt A provided with hooks E at its inner end, and with shoulders a, b, and the brad or pin M passed through the bead G, for the purpose set forth.

No. 19,039. Cheese Bandage and Box Combined, (*Bandage et Boîte à Fromage Combinés.*)

Francis W. Brenton, Foxboro, Ont., 2nd April, 1884; 5 years.

Claim.—1st. A cheese bandage and covering made of strong paper or straw board, and which serves both as a cheese bandage and a cheese packing box, substantially as herein described and for the purpose set forth. 2nd. A cheese covering or casing composed of the bandage A made of stiff paper or straw board, having the tongue a, slit b and notches c, and the face pieces B, substantially as shown and for the purpose set forth. 3rd. The strong stiff paper, a straw board A, surrounding a cheese and having its edges notched so that they may be turned over the face of the cheese, in order to protect its corners, and the face pieces B, applied so as to cover the flat faces of the cheese, all substantially as described and for the purpose set forth.

No. 19,040. Composition of Matter for making Soup, (*Composition de Matières pour faire de la Soupe.*)

Thomas Fuller, Colborne, Ont., 2nd April, 1884; 5 years.

Claim.—1st. The method of preparing the oyster by evaporation and grinding, substantially as set forth. 2nd. The composition used in making the crackers, namely, in using oyster's liquor in doughing up the flour in place of any other liquid, as set forth and described. 3rd. The combination of the ingredients, consisting of oyster powder and oyster cracker powder, substantially in the proportions and for the purpose set forth.

No. 19,041. Lubricator, (*Graisneur.*)

John E. Bell, Quebec, Que., 2nd April, 1884; 5 years.

Claim.—1st. The combination, in a lubricator, of a chamber connected with steam condenser and receiving the water from same, a valve for controlling flow of same, and an oil-holder into which such water passes, displacing the oil or other lubricant which rises up from the holder into the chamber, thence passing off, all substantially as herein set forth, and for the purpose described. 2nd. The oil holder E, provided with recesses F, as and for the purpose described. 3rd. The combination, with the chamber C, of the oil holder held by rings H, carried by fork G, and screw K, regulating position of same.

No. 19,042. Slate Cleaner, (*Torchon d'Ardoise.*)

John Burling, Milburn, N.J., U.S., 3rd April, 1884; 5 years.

Claim.—As an improved article of manufacture, a slate-cleaner, consisting of a hollow, comparatively thin, and flat receptacle supporting a water exit, and covered with a suitable soft water absorbing material, all substantially as shown for the purposes described.

No. 19,043. Centre-Board for Vessels, (*Semelle de Dérive des Vaisseaux.*)

William O. Christensen, Marshfield, Oregon, U. S., 3rd April, 1884; 5 years.

Claim.—1st. The combination, with the well C, the keelson B and the keel A, of the tube a extending to the deck, the rods b, c connected above the keelson, by bars c, and at the bottom of the keel, and the rods d extending from the cross-bars c up through tube a, as set forth. 2nd. The board d having oblong holes and thereby being provided with

play on the lower bolts e, when either end is raised independently of the other, as set forth.

No. 19,044. Process and Apparatus for the Manufacture of Gas, (*Procédé et Appareil pour la Production du Gas.*)

James E. Leadley, Camden, N.J., U.S., 3rd April, 1884; 5 years.

Claim 1st. In combination with the generating furnace and the charging apparatus, the short cylinder M, having a stirring rod passing through its cover, and mounted upon a pivoted revolving plate with the coal cylinders, whereby it may be brought into position over the charging chute, so that the rod may be thrust into the coal for stirring and breaking it up, and then turned away from heated opening. 2nd. In combination with the generator, the commingling and vaporizing chamber having a central cylinder or retort open at top and provided with a distributor C, and the cellular commingling devices c, and the oil supply pipe, as and for the purpose described. 3rd. In combination with a generator and a commingling and vaporizing chamber, the fixing chamber connected to the vaporizer by a tube at bottom, and having a central cylinder open at the top, and provided with a spiral flange extending between it and the wall of the chamber, as and for the purpose described. 4th. The fixing chamber having an inlet flue at the bottom and a stack and tight fitting cap at the top, and having a central flue or cylinder open at the top, and having a discharge pipe passing through the outer wall of the chamber at the bottom, and provided with a spiral flange forming a spiral passage between the cylinder and the wall of the chamber, in combination with a generator. 5th. The combination of the generator, the commingling and vaporizing chamber having a central cylinder open at the top, the fixing chamber having a central flue and spiral flange, and a steam boiler having a central flue and the connecting pipes, as and for the purpose described. 6th. The combination of the generator and vaporizer with the oil supply tank, the air cylinder, the air pump, and connecting pipes, and the meter and valve in the oil supply pipe, as and for the purpose described.

No. 19,045. Running Gear for Carriages, (*Train de Voiture.*)

James Field, Ancaster, Ont., 3rd April, 1884; 5 years.

Claim.—1st. In combination with the running gear of buggies and carriages, the cross centre bar D, constructed as shown, and the springs made to cross said bar at their centre and attached thereto, and the front ends of the lower springs G, G secured to the fifth wheel, substantially as and for the purpose specified. 2nd. The construction of the fifth-wheel in three parts j and m, and u, the upper and lower portions J and u being stationary, and the centre one movable with the axle, substantially as and for the purpose specified. 3rd. The centre portion m of the fifth-wheel is constructed with a pivot pin n on the axle made to enter a hole v in the lower portion u of the fifth-wheel, by which the centre one m is pivoted to upper and lower portions, also the holes b to allow the bolts g to pass through and allow it to move with the axle A, and the bevelled recess t, all arranged substantially as and for the purpose specified. 4th. The lugs y, v cast on the underside of the lower part w of the fifth-wheel, and attaching the front end of the lower spring G to the same, near the centre of the front axle, and crossing the side springs at the points a, a, in rear of the centre bar D, all arranged substantially as and for the purpose specified. 5th. The combination of the centre-bar D, constructed as shown, with the springs G secured to the fifth-wheel and crossing the side springs behind the centre-bar D, substantially as specified.

No. 19,046. Scale, (*Balance.*)

Alfred A. Houghton, Buffalo, N.Y., U.S., 3rd April, 1883; 5 years

Claim.—1st. A pivoted weight or latch, in combination with a scale beam for balancing the beam when the scoop is either on or off, as specified, or to act as a weight, as described. 2nd. The combination, with a scale-beam, of a pivoted weight or latch c3, provided with the words "Scoop on" and "Scoop off" for balancing the beam and indicating when the scoop is on or off, substantially as described. 3rd. A scale beam provided with a poise or weight capable of being moved in one direction, so as to balance the beam with the scoop on, and in the opposite direction, so as to balance the beam when the scoop is off, in combination with the words "Scoop on" and "Scoop off" or words to that effect, stamped or otherwise placed in such position as to indicate, in connection with the poise, whether the scoop is on or off.

No. 19,047. Running Gear for Vehicles, (*Train de Voiture.*)

Chauncey M. Murch, Cincinnati, Ohio, U.S., 3rd April, 1884; 5 years

Claim.—1st. In combination, with the spring A B attached to the axle H, and having its forward extension I elevated and coupled to the splinter bar K, the semi-elliptic spring L joined to said extension and a shackle C, and supporting a fifth-wheel frame, substantially as described. 2nd. In combination with the composite spring A B D E I, the semi-elliptic spring L coupled thereto, in the manner described, and supporting a fifth-wheel frame, as set forth. 3rd. The combination, in a running gear, of the X-shaped frame Z terminating with curved portions P, P' made of angle iron, said frame being pierced at its centre to receive the king-bolt O, and having the lower ring N of the fifth-wheel secured thereto, for the purpose described. 4th. The combination, in a running gear, of springs A, B, D, E, I, L, shackle C, frame Z P P', fifth-wheel N T and king-bolt O, for the purpose described. 5th. In combination with the lower spring A B, having its forward extension I elevated and connected to the splinter bar B, the upper spring L, whose front or longer portion is attached to said extension I, while its rear or shorter portion is loosely coupled by a shackle C to the upwardly-curved termination B of the aforesaid lower-spring A, as herein described.

No. 19,048. Process and Apparatus for the Manufacture of gas. (*Procédé et Appareil de Production du Gaz.*)

James A. Leadley, Camden, N.J., U.S., 3rd April, 1884; 5 years.

Claim.—1st. The process of manufacturing gas, which consists in raising a body or bodies of fuel to an incandescent temperature by blasts of air, and burning the resulting gaseous products, and storing the heat in the fixing chamber containing refractory material, and also heating oil retorts, then dropping a charge of bituminous coal upon the bed of hot fuel and distilling it by the direct heat, and at the same time decomposing steam in the bed of incandescent fuel and passing the resulting gases up through the distilling coal, conducting a portion of the gas to the oil retorts, and thereby carrying the oil into the retort and the vapours through the retorts into the fixing chamber, and finally combining the water gas, the coal gas and the oil gas, and converting them into a fixed homogeneous gas, in the heated fixing chamber. 2nd. The generator having a hollow wall C, having baffle-plate C, forming an air heater, in combination with an air pipe entering the top of the air chamber and the pipes or flues c, c', connecting the base of the air heater with the ash pit and a gas escape flue. 3rd. The generating furnace having air and steam inlet pipes at or near its base, and the connected oil vapourising retort placed in its upper part, in combination with a fixing chamber, and pipes connecting the generating chamber and the retort with the fixing chamber. 4th. The connected retorts placed in the top of the generating chamber, in combination with the pipes g', g'', connecting the chamber with the side retorts, and the oil supply pipe connecting with the gas pipes entering the retorts. 5th. The charging apparatus consisting of two or more cylinders secured to a revolving pivoted base plate having openings corresponding to the cylinders, and a supporting base having an opening and discharge pipe, in combination with the generating furnace having the chute f connecting with the discharge pipe of the charging cylinders. 6th. The charging apparatus, consisting of the cylinders mounted on a revolving plate, as described, in combination with the hollow supporting base having inlet and outlet water pipes, and a discharge chute leading into the furnace. 7th. The generating furnace having inlet air and steam pipes connecting with both sides thereof, in combination with a fixing chamber, a gas pipe F connecting the upper portion of the generator with the fixing chamber, and the gas flues I, II, connecting the ash pits of the generator with the fixing chamber. 8th. In combination with the generator and its eduction gas pipes, the water cooled valves having hollow slides or gates, and circulating tubes, connected as described, and the surrounding water box. 9th. The single chambered decomposing and generating furnace, having two ash-pits, in combination with the hollow wall C, rising a short distance into the decomposing chamber and having baffle plate c forming a zig-zag air heating passage, and air flues c', c' connecting with the ash pits, the air blast pipe connecting with the top of the air passage and a gas escape flue, as described. 10th. The process of generating gas, which consists in charging bituminous coal into a heated generating chamber containing two bodies of fuel at an incandescent heat, and thereby distilling the rich gas from the coal and reducing it to coke, then decomposing steam by passing it up through one body of the hot coke, and converting any carbonic acid in the resulting gases into carbonic oxide by passing such gases down through the other body of hot coke, and at the same time passing a portion of the hot gas to a heated retort, and thereby spraying oil into such retort and carrying forward the resulting vapours preventing the formation of carbon, and finally combining and fixing all the resulting vapours and gases, in a heated chamber, as described.

No. 19,049. Churn. (*Baratte.*)

Robert R. Shive, Oxford, Miss., U.S., 3rd April, 1884; 5 years.

Claim.—1st. The combination of the cylindrical churn body having a suitable cap or cover, with the dasher, having its staff passing through the cover and formed with perforations, the butter lifter comprising the perforated disk adapted to rest upon the bottom of the churn body, and having its lifting rod passing up through one of the perforations in the dasher and out through the cover, as set forth. 2nd. In a churn, the body A having a flaring mouth B and a cap or cover C, of the base E, chamber G, chambers H, H' and openings I, I', and a cock or faucet K arranged and operating so that the hot or cold water, supplied to the chambers H, will communicate with the chamber G beneath the churn, and be drawn off, as desired, with the chamber set forth. 3rd. The combination of the churn body A, of a casing J secured to the same and having an open or transparent face M, and a thermometer N placed within and protected by the casing, as and for the purpose set forth. 4th. In a churn, the combination of the churn body A, the dasher Q provided with a staff O and formed with perforations, and the butter lifter resting on the bottom of the churn and having its lifting rod arranged parallel with the dasher-staff, arranged and operating, so that the lifter will raise the butter to the top of the churn while the milk will be strained back into the body, as set forth.

No. 19,050. Railway Rail Chair.

(*Coussinet de Rail de Chemin de Fer.*)

George Weeks, East Oakland, Cal., U.S., 3rd April, 1884; 5 years.

Claim.—The combination, with the rails A, A', ties B, B' and fish-plates C, C', of the side plates D, D' having apparatus I, F, chair E having upwardly-extending ends and provided with apertures H, H', locking-block G having aperture K, and angle locking-block F provided with apertures J, J', and having its outer surface at either end bevelled or rounded, and its sides of such a height that when placed in aperture position, its upper edge will be flush with the top of the rails A, A', all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

No. 19,051. Loom. (*Métier de Tisserand.*)

Arthur M. Rice, Toronto, Ont., 4th April, 1884; 5 years.

Claim.—In a weaving loom, a belt E made of canvas or other suitable material, connected at one end to the beam A, and having hooks

F attached to its other end, in combination with a rod G, arranged to form a connection between the warp D and belt E, substantially as and for the purpose specified.

No. 19,052. Machine for Holding Coal Oil Cans While in Use. (*Machine pour Soutenir les Bidons à Pétrole en Usage.*)

Henry G. Waterson, Victoria, B.C., 4th April, 1884; 5 years.

Claim.—The combination of tilting box F, with pivots C, C' and hook B. The adjustable spring strap A, which holds the oil-can in the tilting box. The combination frame J to be used as a frame for supporting tilting box F, and as a stand or table, substantially and for the purpose hereinbefore set forth.

No. 19,053. Process and Apparatus for the Manufacture of Gas. (*Procédé et Appareil de Production du Gaz.*)

James E. Leadley, Camden, N.J., U.S., 4th April, 1884; 5 years.

Claim.—1st. The process of generating gas, which consists in superheating steam, then passing it down through a body of incandescent or highly heated fuel where it is decomposed, resulting in the production of hydrogen, carbonic oxide and a small per cent. of carbonic acid, then passing these gases up through a separate body of heated fuel, thereby converting the carbonic acid into carbonic oxide and passing them through a charge of distilling soft coal for carrying off the rich gases therefrom, and finally converting them into a homogeneous fixed gas in a heated chamber. 2nd. The process of manufacturing gas, which consists in decomposing and superheating steam by passing it through a bed of heated iron scrap and heated brick work, and then down through a body of incandescent or highly heated fuel, then passing the resulting gases through a second body of heated fuel for converting any contained carbonic acid into carbonic oxide, then enriching the gases by passing them through a charge of distilling soft coal and by mixing with them the vapors of liquid hydro-carbon, and finally converting them into a fixed gas by passing them through a heated fixing chamber. 3rd. In a gas generating apparatus, a generator having a fuel chamber in its base, and a superheating chamber filled with brick work, and a body of iron scrap in its upper part, and having a coal chute passing through its upper heater, in combination with the blast pipes, the steam and oil inlet pipes, connected as described, and the coal charging apparatus, as and for the purpose described. 4th. The generator constructed with a fuel chamber, a superheating chamber, as described, and having the connected air blast steam and oil inlet pipes, in combination with the fixing chamber, the connecting pipe water box and water cooled valve, as and for the purpose described. 5th. A gas generating chamber having a fuel chamber in its base, and a superheating chamber containing refractory material in its upper part, in combination with steam and oil pipes and a coal charging apparatus connecting with the superheater at the base and, a gas eduction pipe connecting with the superheater, as and for the purpose described. 6th. The combination of two generators, each having a fuel chamber in its base, a superheater and charging chute in its upper portion with a pipe connecting them at the base, gas outlet pipes having valves connecting the superheaters with the fixing chamber, means for charging coal and the air and steam connecting pipes, as and for the purpose described. 7th. The two fuel chambers connected by a pipe at their base, and each having steam inlet pipes connecting with them at their charging above the fuel, in combination with the chutes and coal charging apparatus, the gas fixing chamber and the connecting gas pipes from each fuel chamber, as and for the purpose described. 8th. The combination of the two fuel chambers connected by a pipe at their base and each having air and steam inlet pipes, with the chutes and coal charging apparatus, the gas fixing chamber and the connecting gas pipes from each fuel chamber, as and for the purpose described.

No. 19,054. Process and Apparatus for the Manufacture of Gas. (*Procédé et Appareil de Production du Gaz.*)

James E. Leadley, Camden, N.J., U.S., 4th April, 1884; 5 years.

Claim.—1st. The process of generating gas, which consists in, first, raising a body of fuel to an incandescent state by a blast of air, heating a separate body of bituminous coal by the resulting hot gaseous products, and burning the gaseous products in the mixing and fixing chambers, then decomposing steam in the first body of incandescent fuel, passing the resulting hot gases through the body of bituminous coal and thereby distilling and carrying off the carburetted hydrogen and therefrom, carburetted the gases with liquid hydro-carbon and finally converting them into a fixed gas in a separate heated fixing chamber. 2nd. The generating furnace, consisting of the lower decomposing chamber B, the upper distilling chamber B', the perforated pipe for partition between them, in combination with connecting pipes for the steam and air, and an eduction pipe for gas, as described. 3rd. The generating furnace, consisting of the upper and lower fuel chambers separated by a perforated partition in combination with the mixing chamber, and the two connecting pipes H and I, one from each chamber, as described. 4th. The generating furnace supply pipes, the lower decomposing chamber, having air and steam supply pipes, the upper distilling chamber and a perforated arch or partition between them, in combination with a fuel charging apparatus connected with the upper chamber, and a gas outlet pipe, as and for the purpose described. 5th. The generating furnace divided into an upper and lower chamber by a perforated partition, in combination with mixing and charging apparatus connected with each, the vapourising and mixing chamber having an oil inlet pipe, and a pipe connecting the latter chamber with one of the chambers of the generator, as described. 6th. The generating furnace constructed with two chambers and provided with air and steam inlet pipes, in combination with the charging apparatus, the mixing and vapourising chamber, the fixing chamber and the connecting pipes, as described.

No. 19,055. Machine for Making, Repairing and Cleaning Roads. (*Machine pour faire, réparer et nettoyer les Chemins.*)

George W. Taft, Abington, Ct., and Charles H. Burleigh, Worcester, Mass., U.S., 4th April, 1884; 5 years.

Claim.—1st. In a road machine, the combination of a supporting wagon or body mounted on wheels, a vertically swinging frame hinged at its rear end beneath said body, a scraper or blade hinged to a semi-circle support piece pivoted to the forward part of said frame, a pair of independently supported swinging cranes or arms, vertically adjustable on guides or supports mounted on said body, and suitably connected for the suspension of the respective ends of said blade, and means for the independent elevation or depression of said cranes, and for the retention of the parts at their several positions of adjustment, substantially as and for the purpose set forth. 2nd. The combination of the scraper or blade D, the swinging arms or cranes J, arranged for independent elevation and depression of their supports, and the suspension rods K connecting said blade and cranes, substantially as set forth. 3rd. The combination of the vertically swinging frame C, the scraper or blade supported on said frame and pivoted for angular adjustment, the vertically adjustable swinging cranes J, connected to said blade by suspension rods or chains, and means for securing the parts at their positions of adjustment, substantially as set forth. 4th. The combination, with the adjustable scraper or blade, and blade elevating mechanism, of the crane arms J, provided with rectangular end sockets Ji, the suspending rods K, having regular-shaped top ends passing through and non-rotative in said sockets, and means for retaining said rods in connection with said arms, substantially as and for the purpose set forth. 5th. The arm J, provided with the rectangular end or socket Ji, in combination with the suspending rod K, having a rectangular recessed end passing through said socket, and the retaining pin K arranged therein, substantially as shown and described. 6th. The combination of the scraper or blade D, the adjustable swinging arms or cranes J, the connections K suspending said blade from said arms, the racks I and the operating levers L, or means for independently elevating and depressing said cranes and the respective ends of said blade, as set forth. 7th. The combination, with the body frame A, of the upright frame Ac supporting the guide bars I, and recessed segments Ni, the movable racks I, and the swinging cranes or arms J, adjustable on said guides, the hand levers L fulcrumed at M, and having segment geared heads I meshing with said racks, and the lever locking devices N, substantially as and for the purposes set forth. 8th. The combination of the frame C, adapted for vertical adjustment, the semi-circular frame E, pivoted thereto for horizontal rotative adjustment, and the blade D, hinged to said semi-circular frame for backward and forward inclination, and means for securing said parts at their respective positions of adjustment, as set forth. 9th. In a road machine having a scraper blade mounted on a vertically movable frame or support, and adapted for angular and inclined adjustment, and hinged for backward and forward tipping action, an actuating lever as F, or means for effecting or controlling such tipping action of the blade, conveniently under control of the attendant at his position upon the platform of the machine, substantially as set forth. 10th. The combination, with the blade D, hinged as at d, for forward and backward inclination, of the lever F, the fulcrum support F, engaging therewith, and means for suitably connecting the blade with said lever for effecting adjustment thereof, substantially as set forth. 11th. The combination, with the vertically adjustable frame C, the horizontally adjustable frame E, pivoted thereto, and the blade D, hinged as at d, for backward and forward inclination, of the bar f connected to said blade by universal joint, and the locking lever F, or means for adjustably securing said bar, substantially as set forth. 12th. The combination, with the scraper or blade D, adapted for horizontal angular adjustment, of the recessed segmental flange E, and the locking bolt G, substantially as and for the purpose set forth. 13th. The latch bolt lever G, fulcrumed at G, and extending upward through the platform A, as shown, in combination with the latch bolt G, and semi-circular notched plate E, and supporting frame C, for the purpose set forth. 14th. The combination, with the frame C and rotatively adjustable blade supporting frame E, of a ball and socket pivot connection e for the purpose set forth. 15th. The guide piece E2 for the lock bolt, provided with lugs for embracing the flange E, in combination with the frame C, semi-circular frame E, and blade D, as and for the purposes set forth. 16th. The combination, with the hand levers L, fulcrum bar M, and segment flanges Ni, of retaining pieces lever and allowing their geared ends f to be unmeshed from the racks I, substantially as and for the purpose set forth. 17th. A land side plate or wing provided with means for effecting its adjustment to different degrees of lateral inclination, in combination with the scraper or blade in a road machine, substantially as set forth. 18th. The combination, with the scraper or blade in a road machine, of a land side plate or wing attached to, and extending backward from the end of said blade with an outward inclination or curve, and adapted for exerting, by pressure against the bank, a lateral force in counter action to the tendency of lateral movement occasioned by the diagonal before of the blade, when the machine is in use, substantially as hereinbefore set forth. 19th. The combination, with the scraper or blade in a road machine, of an adjustable hinged land side plate or wing detachably connected to said scraper, in a manner to permit its ready removal, substantially as set forth. 20th. The combination, with the end of the curved metal scraping blade in a road machine, of an attached wing or plate extending beyond the working line of said blade, and adapted for action as a guard against kerbing stones for preventing contact of the end of the blade therewith, substantially as hereinbefore set forth. 21st. The combination, substantially as described, of the curved metal plate D, provided with a double series of holes w, and the steel re-enforce Ds, having centrally located holding bolts or studs h, adapted and fitted in connection therewith, as set forth, whereby adjustment of said re-enforce, to compensate for wear, can be effected in the manner specified. 22nd. The combination, with a curved scraping blade in an adjustable road machine, of the detachable pilot iron S, having lateral and vertical out-

ting edges s, s2 and provided with lips S3 and fastening device u, whereby ready and convenient attachment and detachment with the blade can be effected, substantially as hereinbefore set forth. 23rd. In a road machine, the combination of the pilot iron or share S, having the curved back plate S1 and projecting cutting angles s, and s2 with the blade D, and adjustable land side or wing plate W, substantially as shown and described. 24th. The combination, with the adjustable scraper blade D, of detachable side plates as X, connected to project forward from said blade at or near the ends thereof, for retaining the collected material in front of said blade when the machine is used for street clearing purposes, with the blade adjusted at right angles, or nearly so, to the line of draft, substantially as hereinbefore set forth. 25th. A detachable side guard plate as X, provided with attaching ears z and braces z', adapted for use in combination with the scraping blade D, in an adjustable road machine, substantially as and for the purpose set forth.

No. 19,056. Machine for Pressing Cloth.

(*Machine Pour Presser les Draps.*)

Robert Patrick, Jr., and Joseph Wilson, Galt, Ont., 4th April, 1884; 5 years.

Claim.—1st. A cloth pressing machine, constructed substantially as herein shown and described, and consisting of three or more press-plates forced together against resisting springs by cam-operating toggle bars, and the driving mechanism, as set forth. 2nd. In a cloth pressing machine, the combination, with the frame A, the base-plate S and the guide rods V having collars W, of the three or more press plates T, X, Xi, X2, Y, the toggle-bars R, the cams O and the driving gear, substantially as herein shown, whereby the press-plates will be successively forced together and released, as set forth. 3rd. In a cloth pressing machine, the combination with the cam-shaft N and its driving mechanism, and the roller i of the wheel t having gear segments s and the gear-wheels r, r, p, o, m, l, whereby the said roller will be revolved intermittently substantially as set forth. 4th. In a cloth pressing machine, the combination with the wheel t having gear segments s and recess v, and the shaft q carrying the gear wheel r, of the locking block n, substantially as herein shown and described, whereby the said shaft is held stationary, except when revolved by the action of the said gear segment upon the said gear wheel, as set forth. 5th. In a cloth pressing machine, the combination, with a lay roller i, of the recessed wheel w and the roller arm and spring Y Z I, substantially as herein shown and described, whereby the movement of the said lay roller mill will be checked at the proper points, as set forth. 6th. In a cloth pressing machine, the combination, with the eccentric gear-wheel r driving the cloth moving mechanism, and the wheel t, of the eccentric gear-segment s, substantially as shown, whereby the said mechanism will be started and stopped with a comparatively slow motion, as set forth. 7th. In a cloth pressing machine, the combination, in the roller actuating mechanism, of the recessed wheel t carrying the segment s and the brake-block n, and gear r upon the shaft q, substantially as described and for the purpose set forth. 8th. In a cloth pressing machine, the combination of the blower H having the branched pipe 3, 4, with the press-plates T, X, Xi, Y, &c., and their operating mechanism, substantially as shown and for the purpose specified. 9th. In a cloth pressing machine, the combination, with the roller i and its actuating mechanism, of the eccentric gear-wheel r and the wheel t carrying the eccentric gear segment s, substantially as described and for the purpose specified. 10th. In a cloth pressing machine, the combination, with the cams O, toggle levers R, pivots Q carrying the rollers P, and the press plate T, in such relation to each other that the said press-plate T will return automatically to its initial position, substantially as shown and for the purpose specified. 11th. The combination, in a cloth pressing machine, with the toggle levers R and their operating mechanism, of the press plates T, X, &c., &c., arranged one above the other upon the guides V, provided with stop nuts a and springs Z, substantially as described and for the purpose specified. 12th. The combination of the arm f and ratchet wheel f3 and tension regulating device, as shown, with the bars f and frame A, for the purpose specified. 13th. The frames 10 and 11, in combination with the plates X, &c., &c., as a device for regulating the width of pressure, as set forth and described.

No. 19,057. Automatic Grain Weighing Apparatus. (*Balance-Bascule pour les Grains.*)

David D. Kuhlman, New York, N.Y., U.S., 4th April, 1884; 5 years.

Claim.—1st. The combination, with a grain bucket, of a feed pipe, a hopper-throatway, a swinging section pivoted at the lower end thereof, of a stationary cut-off plate arranged at one side of the passage-way, which conducts the grain from the feed pipe to the bucket, a rising and falling secondary hopper or grain-receiver arranged below the grain bucket, and means for connecting the secondary hopper with the pivoted swinging section under the feed pipe, to swing the lower end of the said section over the stationary cut-off plate by the falling movement of the secondary hopper, substantially as described. 2nd. The combination, with the grain bucket, of a stationary-curved cut-off plate arranged at one side of the passage-way leading to the bucket, a feed-pipe or hopper-throatway, a section pivoted at the lower end of the latter and adapted to swing, to cause its lower end to pass over the stationary cut-off plate, and mechanism actuated by the weight of the grain discharged from the bucket, to swing the movable section over the cut-off plate, of a passage-way 17, above the same, a stationary cut-off plate 18, at one side of the upper end of the passage-way, a feed pipe, a hopper throat-way 6, a swinging section 7, pivoted at the lower end of the latter, and means for swinging the said pivoted section to move its lower end over the stationary cut-off plate, substantially as described. 4th. The combination, with a grain bucket, of a stationary cut-off plate 13, a feed-pipe or hopper-throatway 6, a section 7, pivoted to swing at the lower end of the feed pipe, a rising and falling secondary hopper below the grain bucket, and the bar 8, bell-crank lever 9, upright rod 12, and pivoted arm 14, for connecting the swinging sections with the secondary hopper, to swing

said section over the stationary cut-off plate by the falling movement of said hopper, substantially as described. 5th. In a grain weighing machine, the combination of a bucket, a scale beam, an oscillating partition dividing the bucket into two compartments, and a dog pivoted to the bucket for holding the partition to close the bottom of one or the other compartment, substantially as described. 6th. In a grain weighing machine, the combination of a bucket, a scale beam, an oscillating partition dividing the bucket into two compartments, a movable feed spout and means connecting the spout with the partition, for moving the spout by the swinging of the partition, substantially as described. 7th. The combination, in a weighing machine, of a bucket, a scale beam, an oscillating partition in the bucket, brackets secured to the end of the latter, and a weighted dog journaled in the brackets for locking the partition, substantially as described. 8th. The combination, in a weighing machine, of a scale beam, a bucket, a rock shaft therein, a partition on the rock shaft for dividing the bucket into two compartments, a movable feed spout and means connecting the spout with the rock shaft, substantially as described. 9th. The combination, in a weighing machine, of a scale beam, a bucket, a rock shaft therein, a partition attached to said shaft, a lever connected with the shaft, a bent arm operated by the lever, and a hinged feed spout connected with the bent arm, substantially as described. 10th. The combination of the chute, the sliding gates, the pivoted bell crank-levers, a rising and falling grain bucket having attached vertical rods projecting above its upper end for operating the levers, and means for arresting the descent of the weighted ends of the levers, substantially in the manner and for the purpose described. 11th. The combination, in a weighing machine, of a scale beam, a grain bucket suspended therefrom, a stationary partition arranged centrally with relation to the receiving mouth of the bucket, an oscillating partition pivoted directly beneath the stationary partition and devices carried by the ends of the grain bucket for automatically locking and unlocking the partition at either side of the discharge mouth of the bucket, substantially as described. 12th. The combination, in a weighing machine, of a grain bucket suspended from a scale beam and having receiving and discharging mouths, a partition arranged to oscillate within said bucket to move first from one side to the other of the discharging mouth, and a dog pivoted on the end of the bucket and having at its inner end the oppositely-arranged lugs for locking the partition against one or the other side of the discharge mouth of the bucket, substantially as described.

No. 19,058. Combined Harrow and Seeder.

(Herse-Semoir.)

Jay S. Corbin, Gouverneur, N. Y., U.S., and Andrew G. Hill, Prescott, Ont., 4th April, 1884; 5 years.

Claim.—1st. The combination, substantially as set forth, of the harrow pole, frame and disk-gangs, the seeder-sulky, the seed box thereon, and draft devices connecting the seeder sulky with the draft pole of the harrow. 2nd. The combination, substantially as set forth, of the harrow frame, the disk gangs carried thereby, the seeder-sulky and the seed box mounted on the sulky in advance of the disk gangs. 3rd. The combination, substantially as set forth, of an independent separable disk-harrow, the driver's seat mounted thereon, the seeder-sulky which straddles the harrow and is connected therewith, and a seed box carried thereby. 4th. The combination, substantially as set forth, of the harrow, the seeder-sulky, the seed box mounted on the sulky, and detachable or unmovable connections between the harrow and sulky, whereby the seeding devices may be separated from the harrow. 5th. The combination, substantially as set forth, of the harrow, the seeder-sulky, the swiveling draft connection between the seeder sulky and harrow, and means for limiting the lateral play or vibration of the sulky and harrow relatively to each other. 6th. The combination, substantially as set forth, of the seeder-sulky, the harrow frame and the disk gangs carried by the harrow frame, with their gang shafts, in substantially the same vertical plane as the axle of the seeder sulky. 7th. The combination, substantially as set forth, of the harrow frame, the disk-gangs carried thereby, and a lever for adjusting the gangs to vary their angle to the line of draft located at the rear of the machine. 8th. The combination, substantially as set forth, of the seeder sulky, the seed box carried thereby, the harrow frame with which the seeder sulky is connected, the disk gangs arranged in rear of the seed box, and a lever for varying the angle of the gangs relatively to the line of draft, also in rear of the seed box. 9th. The combination, substantially as set forth, of the harrow frame, the disk gangs, the adjusting lever pivoted at or about the rear of the draft pole, the swinging link pivoted on the tongue, the rod connecting the adjusting lever and link, and the rods which connect the link and the disk gangs. 10th. The combination, substantially as set forth, of the harrow frame, the opposing disk gangs carried thereby, arranged on opposite sides of the pole or central draft line, a lever for adjusting the angle of the gangs relatively to the line of draft, located substantially between the adjoining ends of the opposing gangs and the cultivating or harrow tooth, also operated by said lever to cut out the space between the gangs. 11th. The combination, substantially as set forth, of the harrow frame, the disk gangs carried thereby and arranged on opposite sides of the central line, a lever pivoted on the frame, and a harrow or cultivating tooth carried on the end of the lever, so as to be raised or lowered to cut out the space between the gangs. 12th. The combination, substantially as set forth, of the harrow frame, the disk gangs arranged on opposite sides of the central line, the adjusting lever pivoted at the rear of the frame or pole, the swinging link pivoted on the pole in front of the gangs, the rod connecting the adjusting lever and said link, the rods connecting the disk-gangs and said link, and the cultivating or harrow tooth connected with and actuated by said lever. 13th. The combination of the pole, the opposing gangs and the adjustable cultivating or harrow tooth located between the gangs. 14th. The combination, substantially as set forth, of the harrow-frame, the disk gangs carried thereby, scraper-beams carried above the disk-gangs, levers for operating the scraper-beams pivoted on the frame of the harrow in permanent relation to the driver's seat, and swiveling or yielding connections between the scraper-beams and said levers. 15th. The combination, substantially as set forth, of the disk-gang, the scraper beam, the supports on which it is mounted so as to move with the gang, when its angle to the line of draft is changed, a lever for reciprocating the

beam, pivoted on the frame of the harrow in permanent relation to the driver's seat, and a swivel connection between said lever and scraper beam. 16th. The combination, substantially as set forth, of the frame, the disk gang, the slotted scraper beam, the scraper beam support rigidly mounted upon the disk gang, the scraper-beam pivoted pivoting bracket carried by the hanger, the adjusting lever pivoted upon the frame, and the swivel connection between said lever and the beam. 17th. The combination, substantially as set forth, of the gang of cutting disks, the scraper-beam, a series of scrapers, one for each disk, carried by said beam, and means for independently adjusting each scraper relatively to its disk. 18th. The herein described spacing thimble, having a detachable flange or collar, and for the purpose specified. 19th. The combination, substantially as set forth, of the spacing thimble, the removable flange or collar and the sectionless journal-box. 20th. The herein-described spacing thimble, having a removable flange or collar formed of harder metal than the body of the thimble, for the purpose specified. 21st. The combination, substantially as set forth, of the spacing thimble, its removable flange or collar, the sectionless journal box and the sand bands, with notch or recess at their lower sides, which fits on the ends of the journal box and over the flanges of the thimble.

No. 19,059. Two-Wheeled Vehicle.

(Voiture à deux Roues.)

William F. Robb (Assignee of Fisher Dogerty and Enos L. Sies) Crawfordsville, Ind., U.S., 4th April, 1884; 5 years.

Claim.—1st. The combination of the axle, the thills secured thereto and projecting in rear thereof, a cross-bar connecting the rear end of the thill blocks carrying the body, and plates secured to the under-sides of these blocks and bearing upon the axle at their front ends, and adjustably connected to the cross-bar at their rear ends, substantially as set forth. 2nd. The combination of the axle, the thills secured thereto and projecting in rear thereof, a cross-bar connecting the rear ends of the thills, the plates having their front ends bearing upon the axle and provided with the slotted rear extensions, and the set screws securing these plates to the cross-bar, substantially as set forth. 3rd. The combination of the axle, the thill plates having a bearing on the axle and connected with the thills, and adjustable on said bearings, the body and devices connecting the body with the plates, substantially as set forth. 4th. As an improvement to the body of the combination, with the body, of a seat swung or pivoted to the body of its side so as to have a free and independent swinging movement on the body from front to rear, substantially as set forth. 5th. The combination, with the sides of a vehicle body, of a seat having longitudinal strips secured upon its under sides and formed with bearings at their ends, and transverse swing rods having upturned ends seated in bearings in the sides of the vehicle body, substantially as set forth.

No. 19,060. Treatment of Leather, &c.

(Traitement du Cuir, &c.)

Thomas Gare, Stockport, Eng., 5th April, 1884; 5 years.

Claim.—The mixture or compound composed of unwrought wood resin, gumthuis, or frankincense, boiled or linseed oil, india-rubber solution and petroleum, benzoline, or bi-sulphite of carbon for treating leather and leather substitutes, for the purposes and in the manner hereinbefore described.

No. 19,061. Cinder Sifter.

(Crible à Cendres.)

James Carmichael, Oshawa, Ont., 5th April, 1884; 5 years.

Claim.—1st. As an improved cinder sifter, a box C divided by the partition E having a hole e and hopper-shaped towards the said hole, with wire netting F located as indicated, in combination with mechanism arranged to hold the ash pan H against the partition E, substantially as and for the purpose specified. 2nd. As an improved cinder sifter, the box C pivoted within the chamber A and having one of its sides formed of wire netting F, in combination with the chutes K flaring from the sides of the chamber A, substantially as and for the purpose specified. 3rd. The box C, divided at or about its centre by the partition E and having one of its sides formed by the netting F, in combination with the board L pivoted on the block M and arranged with the wedge O to hold the ash pan H against the partition E, so that its contents shall fall through the hole e into the netting F, substantially as and for the purpose specified.

No. 19,062. Flour Bolt.

(Blutoir.)

Joseph E. Fiske, Jamestown, N. Y., U. S., 5th April, 1884; 5 years.

Claim.—1st. The combination, of the bolt frame or reel, the extensions rigidly secured to the arm of said reel and extending outwardly therefrom, the spring hammer, a support to which said hammer is secured, the yoke and the regulating screw, substantially as shown and described, and for the purpose set forth. 2nd. In a flour-bolt, the combination of arms C, C, hammer Y, spring handle D, a support to which said handle is secured, screw E and yoke b, all arranged to operate substantially as and for the purpose set forth.

No. 19,063. Self-Oiling Axle.

(Essieu à Gaiissage Continuu.)

Charles W. Carrier, Levis, Que., 5th April, 1884; 5 years.

Claim.—1st. An axle provided with an oilway made diagonally downwards from the upper and outward end of the axle through to the surface of its underside, and made to receive a lubricating pin, substantially as and for the purposes hereinbefore set forth. 2nd. The axle A, having the oily E, diagonally downwards with the lubricating pin G, shoulder F and recess D, substantially as and for the purposes hereinbefore set forth. 3rd. The oil reservoir H, when screwed on the axle A, having oily E, with lubricating pin G, substantially as and for the purposes hereinbefore set forth.

No. 16,064. Car-Coupling.

(*Accouplage de Wagons.*)

John D. Kiely, Toronto, Ont., 5th April, 1884; 5 years.

Claim.—1st. In combination with a draw-head, a counterbalanced coupling device provided with a removable coupling arm, substantially as and for the purposes described. 2nd. In combination with a draw-head, a counterbalanced coupling device hung upon a transverse rock shaft, and provided with a jointed coupling arm, substantially as and for the purposes specified.

No. 19,065. Scarfed Joint for Timber Beams. (*Joint à Mi-bois pour Poutres.*)

Jean B. Bélanger, St. Charles of Caplan, Que., 5th April, 1884; 5 years.

Claim.—1st. A joint for connecting end to end timber beams which are intended to resist a transverse strain, consisting of a wedged interlocking scarf having bevelled ends fitting into undercut shoulders such scarf enforced by a fish-plate or bolster locked to the scarfed beam by a pair of valved double dovetail keys fitted into corresponding mortises in beam and fish-plate, and securely wedged and locked therein, substantially as described, and for the purposes set forth. 2nd. In combination with a scarfed lock joint for wooden beams, a fish-plate or bolster extending beyond the scarfing and locked thereto by keys and wedges, substantially as described, and for the purposes set forth. 3rd. In combination with a wooden fish-plate C, the keys D, D', fitting into corresponding mortises and locked therein by a wedge E, substantially as described, and for the purposes set forth. 4th. In a jointed timber beam A, the scarfing having interlocking jaws a, a', and bevelled joints fitting into undercut shoulders locked by a wedge B, in combination with the fish-plate C locked to each end of the beam by halved double dovetail keys D, D' and wedge E, all substantially as described, and for the purposes set forth.

No. 19,066. Leggin. (*Grande Guêtre.*)

Julian A. King, Chicago, Ill., U.S., 5th April, 1884; 5 years.

Claim.—1st. As an improved article of manufacture, an elastic leggin extended to cover the upper surface of the foot, and provided with a partial sole B, and heel-opening at B', substantially as described. 2nd. The combination, with the elastic leggin extended to cover the upper surface of the foot, of a partial sole B, and a facing or binding at about the heel-opening B', substantially as and for the purposes set forth. 3rd. The combination, with the elastic leggin extended to cover the upper surface of the foot, of a partial sole B affording a heel-opening, a facing at about the heel-opening and a facing continuous with the facing a, substantially as and for the purpose set forth.

No. 19,067. Mechanical Movement.

(*Mouvement Mécanique.*)

William R. Park, Taunton, Mass., U.S., 5th April, 1884; 5 years.

Claim.—1st. The combination of the rotary disc provided with a series of pins projecting from its face, a reciprocating tappet having both ends cut in an incline to the line of its reciprocation, and adapted to engage with the pins and impart rotary motion to the disc in its reciprocation, and means for reciprocating the tappet, substantially as having the purpose set forth. 2nd. The combination of the disc having a series of pins equidistant from each other, arranged concentric with the axis of rotation of the disc, with the reciprocating tappet having its ends cut on an incline to the line of its reciprocation and parallel to each other, all so arranged that the tappet will turn the disc an equal distance in the same direction at each reciprocation. 3rd. The combination of the rotary disc, the series of pins the tappet and parallel inclined ends, and the reciprocating bar, substantially as having the purpose set forth. 4th. The combination of the shaft F, pins G, G', and bridge E with its supports H, H', formed with bearings for bar F, substantially as and for the purpose described. 5th. The combination of the reciprocating bar provided with stop-pins to limit its motion in either direction, bearings for the bar tappet, with ends formed at an inclination to the line of its movement but parallel pins, substantially as and for the purpose set forth. 6th. The combination of the rotary disc provided with a concentric series of equidistant pins uneven in number projecting from its face, and the double-acting reciprocating tappet engaging said pins and having a width nearly equal to the distance between two adjacent pins, and a length such that one end does not pass out of engagement with one pin until the opposite end goes into engagement with another, all so arranged that the tappet not only serves to turn the disc, but locks the same against independent movement.

No. 19,068. Machine for Forming Tenons on Spokes and Boring and Drilling. (*Machine pour Tailler les Tenons des Rais de Roues et pour Percer et Forer.*)

William H. Hosler, Petoskey, Mich., U.S., 5th April, 1884; 5 years.

Claim.—1st. In a machine for forming tenons on spokes, the combination of the stock A, having one end curved downwardly, to which holder c is secured cylinder box a in sleeve at by means of plate b, chucked in connection with spindle B, having handle B', bar C projecting through slot d of stock A, and having rest C', lever D for supporting stock A, and strap E for holding the parts E to the wheel-hub, substantially as shown and for the purpose described. 2nd. The combination of stock A, having tool or chuck holder spindle B, with handle B', and holder c secured to spindle B by plate b', lever D securing to stock A, bar C for supporting stock A, and strap E for securing the parts to the wheel-hub, substantially as shown and described. 3rd. A tenon-boring machine consisting of a stock or brace,

a chuck-holder comprising, a spindle operated by a crank and secured to the stock by plate b', bar C having foot C', lever D and strap E, substantially as shown and for the purpose described.

19,069. Car-Coupler. (*Accouplage de Wagons.*)

Charles E. Mark, Flint, Mich., U.S., 15th April, 1884; 5 years.

Claim.—1st. In a car-coupling and in combination with a draw-bar and buffer, a swinging bale or gate pivotally pendant from the end of the car and pivotally connected to said draw-bar or buffer, whereby a swinging support for said draw-bar and buffer is provided, which will not interfere with their reciprocating movement, substantially as specified. 2nd. In a car-coupling, a swinging bale or gate pendant from the front end of the car, and supporting the projecting end of a metallic box, which encloses the hooked end of the draw-bar and allows such box to have a slight vertically radial movement, and a horizontal reciprocating movement to the limit of the compression or extension of the buffer spring, substantially as described. 3rd. The combination with the hooked end of the draw-bar and with an enclosing metallic case, a cam eccentrically secured to a shaft which is pivotally secured to the lower side of said case and working in a slot therein, said cam being operated from either side of the car by means of crank arms secured in suitable boxes to the bottom of the car, the inner ends of said crank arms connecting with the cam shaft by means of diagonally located connecting-rods and universal joints, substantially as and for the purposes specified. 4th. In combination with the hooked end of the draw-bar and with an enclosing metallic case, a cam, the periphery of which is flattened opposite to or at the point farthest from the shaft to which said cam is eccentrically secured, said shaft being pivotally secured to the lower side of said case with the cam working in a slot therein, and operated from either side of the car by means of crank-arms secured in suitable boxes to the bottom of the car, the inner ends of said crank-arms connecting with the cam-shaft by means of diagonally-located connecting-rods and universal joints, substantially as and for the purposes set forth.

No. 19,070. Fire-Escape and Fire-Escape Support. (*Sauveteur d'Incendie et Support de Sauveteur d'Incendie.*)

The New England Fire-Escape Company, (Assignees of Harlem Fairbanks,) Boston, Mass., U.S., 5th April, 1883; 5 years.

Claim.—1st. In a fire-escape, the combination, with a canvas chute A, of a curved stay piece D, substantially as and for the purposes hereinbefore set forth. 2nd. In a fire-escape, the combination of a chute A, curved piece D and rounds B, B', substantially as and for the purposes hereinbefore set forth. 3rd. In a fire-escape, the combination, with the chute A, of the curved piece D and the supporting ropes E, E', G, G', substantially as and for the purposes hereinbefore set forth. 4th. A fire-escape protector and supporter of the character described, provided with an automatic kneec-down part I and a removable cover J, and suitable means for securing the supporting ropes of the escape, all substantially as and for the purposes hereinbefore set forth. 5th. The combination, with a fire-escape protector and supporter of the character described, of suitable brackets or braces, whereby it is attached to and supported upon the outside of a building, all substantially as and for the purposes hereinbefore set forth.

No. 19,071. Pulley. (*Poulie.*)

Frank C. Caldwell, Chicago, Ill., U.S., 5th April, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a pulley, the rim and disk or body of which consists of a plurality of veneers, substantially as set forth. 2nd. A pulley, the rim and disk of which consists of a plurality of veneers, the periphery of the disk being turned outward forming a flange to which the rim is secured, substantially as set forth. 3rd. In a pulley, the combination of rim A made of a plurality of veneers, disk or body B made of a plurality of veneers, hub C and plate D, all made, constructed and arranged substantially as specified.

No. 19,072. Creamer. (*Boîte à Lait.*)

George F. Simonson, St. John, (Assignee of Stephen F. Kierstead, Gagetown,) N.B., 5th April, 1884; 5 years.

Claim.—1st. In a creamer, the cover H provided with the strainer I, tube h with screw-thread formed the cap it, and the roll J, substantially as described. 2nd. A revolving faucet having the main plate A, projecting rim b, revolving plate c turning on the stud d, washer C, screw f, packing D, outlet pipe E and aperture g, substantially as described. 3rd. In a creamer, or milk can, the combination of a faucet arranged to be turned within the area of the can when not in use, with a mica indicator G soldered to the wall of the can and the cover H provided with the strainer I, tub h, cap it, and rolls J', substantially as shown and described and for the purpose set forth.

No. 19,073. Fire-Escape and Life-Preserver. (*Sauveteur d'Incendie et Appareil de Sauvetage.*)

Marshall B. Ingersoll, Regina, Ass'ne., 7th April, 1884; 5 years.

Claim.—In a fire-escape, or life-preserver, the shaft D provided with the hand wheel F, and having a ladder G provided with guys H attached thereto, standards E, with steadying blocks E' pivoted in sockets C, a shown and described, substantially as and for the purpose hereinbefore set forth.

No. 19,074. Inking Pad. (*Balle d'Imprimerie.*)

Charles W. Cruisinger, St. Louis, Mo., U.S., 7th April, 1884; 5 years.

Claim.—1st. In a pad, the combination of a body having a base and elastic walls forming recesses, and a porous cover to rest on the body and tops of the walls, the walls forming a firm support, as set forth. 2nd. A pad cast of elastic material, the said material forming an

ink chamber and supports in said chamber, as set forth. 3rd. The combination of the elastic body, feed-mouth to receive a stopper, an ink chamber with elastic supports being formed in the body, and a porous cover, as set forth.

No. 19,075. Toboggan. (*Traine Sauvage.*)

Albert T. Lane, Montreal, Que., 7th April, 1884; 5 years.

Claim.—1st. A toboggan made up of main body A, longitudinal strips B firmly fastened thereto, cross-bars D, D and rails E, E, substantially as set forth. 2nd. A toboggan made up of two or more pieces composing the main body A and extra strips B, covering the joints and passing around the inside of the curved front, substantially as described. 3rd. The combination, in a toboggan, of the main body A, strengthening strips B and cross-bars D the same being fastened together by rivets, as and for the purpose described.

No. 19,076. Combined Bathing Apparatus and Commode. (*Appareil de Bain et Latrines Combinés.*)

Quimby S. Backus, Winchendon, Mass., U. S., 7th April, 1884; 5 years.

Claim.—1st. The combination of a cabinet, a bath-tub located in the base thereof, a tank arranged in the upper part of the cabinet, an intermediate boiler having means for heating its contents, and suitable pipes and connections, all substantially as shown and described. 2nd. The combination, with a cabinet inclosing a tank or reservoir to supply water, of a swinging commode adapted to be closed within the cabinet and provided with a trap having a pivotal connection with a soil or drain-pipe, substantially as shown and described.

No. 19,077. Egg Carrier. (*Boîte à Oeufs.*)

Richard H. Harris, Petersburg, Va., U. S., 7th April, 1884; 5 years.

Claim.—1st. In egg-carriers, a rigid hollowed base in combination with a yielding egg-encircling surface projecting from the roof of each tier, for the purpose specified. 2nd. In egg-carriers, the combination, with a perforated rigid hollowed base, of a spiral yielding surface concentric with the axis of the former, substantially as herein described. 3rd. In egg-carriers, the combination, with rigid hollowed bases D, D having perforations D₁, D₁, of spiral springs A, A, projecting from roof B concentric with the axis of the base and that of the egg inserted between them, for the purpose herein set forth. 4th. The ventilating openings d, d made between the tiers of the crate for the admission and circulation of air to and from the eggs, as set forth. 5th. In egg-carriers, the combination, with the roof B, from which projects springs A, A, and perforated horizontal bases D, D, forming an unyielding support for the eggs, of rods H, H, adapted to guide and connect the independent tiers having buttons G, G inserted therein, and hasps F, F projecting from the roof of the upper tier, whereby a secure fastening is obtained and the independent tiers virtually made a unit for the purposes herein fully set forth.

No. 19,078. Millstone Pick. (*Marteau à Meules.*)

John Granger, Dunbarton, Ont., 7th April, 1884; 5 years.

Claim.—1st. A millstone-pick, constructed as described, of any suitable material composed of a centre piece provided with two prepared seats, one on each end, and a steel chisel secured on each seat by means of a cap and bolt, and operated by the wooden handle in common use, or other handle, substantially as shown and described. 2nd. In combination with the centre piece A provided with the seats a, a, having dovetail recesses therein, the chisels B, B, with dovetail portions b, b fitting the recesses in the seats, the caps c, c and bolts D, D, substantially as and for the purposes set forth.

No. 19,079. Harvester Rake. (*Râteau de Moissonneuse.*)

The McCormick Harvesting Machine Company, (Assignee of Henry E. Pridmore,) Chicago, Ill., U. S., 7th April, 1884; 5 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of the gate or switch, the gate-latch, the trip-lever arranged to be depressed by a lug or tappet upon one or more of the rake-arms as they pass, and a pendent pivoted catch upon said trip-lever having an offset at its lower end, which shuts underneath the end of the latch when the catch is in its normal position. 2nd. The combination, substantially as hereinbefore set forth, with the gate, the gate-latch by which it is latched or shut, the pivoted trip-lever by which said latch is released to permit the gate to open, and tappets of varying superficies upon the rake-arms, of an adjustable finger upon the upper end of the trip-lever adapted to be set radially upon its fastening bolt to come in contact with one or more lugs or tappets. 3rd. The combination, substantially as hereinbefore set forth, of the trip-lever, the catch pivoted thereto and the single spring serving to hold said lever and catch at once in their normal positions. 4th. The combination, substantially as hereinbefore set forth, of the gate-latch, the trip-lever normally in position to be actuated by tappets on the rake-arms, so as to be depressed invariably by tappets on the proper tappet, the pendent catch pivoted to said lever and having a shoulder or offset at its lower end, which shuts beneath the end of the latch, and means whereby said catch may be opened away from the latch, in order that said latch may not be released by the depression of the trip-lever unless so desired. 5th. The combination, substantially as hereinbefore set forth, of the trip-lever, its discoid head having peripheral notches, the finger secured to said head by a bolt passing axially therethrough, and the lug upon the base of said finger adapted to be brought into engagement with any one of said notches to adjust the finger radially about the bolt. 6th. The combination, substantially as hereinbefore set forth, of the trip-lever, its pivot pin, the spring coiled thereabout the catch pivoted in a heel extension of said lever, and the extended arm of the spring bearing against a heel projection from said catch to hold both lever and catch in their normal position.

No. 19,080. Spring Bed Bottom. (*Sommier Elastique.*)

Jesse M. Keith, Maiden Rock, Wis., U. S., 7th April, 1884; 5 years.
Claim.—The spring bed-bottom consisting of the double helical springs A, slats B having holes E, wire-netting C having eyes F for the reception of hooks D, and inward-bent eyes G, and hooks D, all substantially as and for the purpose shown and set forth.

No. 19,081. Washing Machine. (*Machine à Laver.*)

Joseph O. Hardwick, Colorado, Col., U. S., 7th April, 1884; 5 years.
Claim.—In a washing machine, the opposite rubbers B consisting of flexible bars b having horizontal rounded slats attached thereto, in combination with the block d and staples f, whereby the vertical bars are held in position, as described.

No. 19,082. Self-Closing Hatchway. (*Escouille à Fermeture Automatique.*)

Richard D. Thackston, St. Louis, Mo., U. S., 7th April, 1884; 5 years.
Claim.—1st. In a self-closing hatchway, a door pivoted at one corner, so as to be swung in, or nearly in, a horizontal plane to open or close the hatchway, as set forth. 2nd. In a self-closing hatchway, a pair of doors, each pivoted at one inner corner, so as to swing open, as set forth. 3rd. In a self-closing hatchway, the door or doors hinged or pivoted at one corner so as to be swung open, in combination with suitable cams on the elevator cage, substantially as set forth.

No. 19,083. Curry-Comb. (*Etrille.*)

Henry H. Warren, Cote St. Paul, Que., 7th April, 1884; 5 years.
Claim.—1st. The art or process of manufacturing curry-combs by casting the frame ribs and comb-plates in one piece, and forming the serrations on the edges of such ribs or comb-plates by means of a revolving serrated or toothed wheel, substantially as herein set forth. 2nd. As a new article of manufacture, a curry-comb with the frame ribs and comb-plates cast in one piece, and the serrations of such comb-plates formed by a revolving grooved or serrated wheel, all as herein set forth.

No. 19,084. Wheelwright's Tool. (*Outil de Charron.*)

Alexander Wright, Potsdam, N. Y., U. S., 7th April, 1884; 5 years.
Claim.—A tool or implement for forming and reducing the shoulders of wagon spindles, as set forth, consisting of the frame A with arms a, a, base B screw-threaded as shown, and end clamp C, and V-shaped openings, in combination with the hollow set screw D, and rotary shaft F provided with end socket for the reception of a burr E, the parts being organized, substantially as shown.

No. 19,085. Grain Binding Harvester. (*Moissonneuse-Lieuse.*)

John F. Seiberling, Akron, Ohio, U. S., 7th April, 1884; 5 years.
Claim.—1st. In a grain-binding harvester, in which the driver's seat is located on the outside of the drive-wheel, with the binding mechanism and cutting apparatus on the inner side of the said wheel, the combination of a bundle-carrier pivoted outside of the drive-wheel behind the driver's seat, and provided with mechanism by which the driver can dump it at will. 2nd. In a grain-binding harvester, in which the main frame is supported by the drive-wheel axle in bearings located on either side of the drive-wheel, the cutting apparatus and binding mechanism being on the inside of the drive-wheel, a driver's seat located on the outside of the drive-wheel, and over the drive-wheel axle, in combination with a bundle-carrier pivoted on the rear of the frame outside of the drive-wheel, substantially as and for the purpose specified. 3rd. A bundle-carrier C, pivoted on the lug D, on the frame E and extending behind the said frame, in combination with the pivoted lever F, connected to the front end of the bundle-carrier and located in proximity to the driver's seat, substantially as and for the purpose specified.

No. 19,086. Sewing Thimble. (*Dé à Coudre.*)

Elizabeth F. McCarney and Daniel J. O'Donahoe, Omaha, Neb., U. S., 7th April, 1884; 5 years.
Claim.—1st. The sewing thimble described, having a raised portion A₃ extended partially or entirely around, adapted to relieve the spot of the finger nail from pressure, as herein specified. 2nd. A thimble having a portion A₃, both raised and furnished with five perforations a, adapted to relieve the nail from pressure, and to ventilate the space, while completely protecting it from the needle, as herein specified.

No. 19,087. Sash-Holder. (*Arrête-Croissée.*)

Alfred H. Hartson, (assignee of Henry H. Asimont,) Duluth, Minn., U. S., 7th April, 1884; 5 years.
Claim.—1st. In a sash-holder, the combination, with the sash and sash frame, a bracket or plate secured to the sash frame, and an operating lever pivoted in the bracket or plate and provided with heads at the ends, the upper head being heavier than the lower head, in order to give a tendency for the upper end of the lever to drop down against the sash, as set forth. 2nd. In a sash-holder, the combination, with the operating lever formed with heads at each end, of L-shaped plates secured to the sash, the heads of said lever being adapted to bear against the plates, for the purposes set forth. 3rd. In a sash-holder, the combination of x with the operating lever formed with heads at each end, the upper head having a block F, and the lower head being formed with serrations I, of the plates G, H, the

block F being adapted to bear against the corner *g* of plate G, and the serrated lower end of the lever engaging with the serrations on the inclined face of plate H, for the purposes set forth.

No. 19,088. File for Papers.

(Boite pour Dousters.)

Horace J. Hoffman, Milwaukee, Wis., U.S., 7th April, 1884; 5 years.

Claim.—1st. A file-holder covering having sides *b, b* and hinged to the upper edge of the inside portion *c* of the end head C, in combination with file box having the sides *a, a*, whereby said cover can be turned back and made to rest on the upper rear edge of said head, so as to support the papers in a convenient position for inspection, as described. 2nd. In a file-holder, the bottom, sides and cover, combined with and secured on the reduced portion *c* of the head C, as shown and described. 3rd. The hinged cover B having sides *b, b* extending down over the box and to the rear of the pivot or hinge, whereby the cover will be guided in opening and closing as well as prevented from swinging laterally, when papers are on it for inspection.

No. 19,089. Improvements in Manufacturing Shoes. (*Perfectionnements dans la Fabrication des Souliers.*)

George W. Sleeper and William A. Reed, Westborough, Mass., U.S., 7th April, 1884; 5 years.

Claim.—1st. The hereinbefore described method of forming the upper of a shoe, consisting in first, cutting a blank, in substantially the form shown and described, then splitting the leather and forming the counters out of the split portions, all substantially as described. 2nd. A shoe upper formed of one piece split in the rear portion, the split portion being cut to form the counters, substantially as described.

No. 19,090. Harvester. (*Moissonneuse.*)

A. Harris, Son & Co., (assigness of John Harris), Brantford, Ont., 7th April, 1884; 5 years.

Claim.—In a harvester, in which the reel is journaled on a pivoted arm adjusted by a lever, and held at different altitudes by a notched quadrant or other device, a joint formed between the lever and arm, in combination with a device by which a rigid connection may be formed between the arm and lever while permitting the angle to be altered between the two, substantially as and for the purposes specified.

No. 19,091. Hydro-Carbon Vapour Stove.

(*Foyer à Gaz d'Hydrocarbures.*)

Adelbert M. Brainard and The Cragin Manufacturing Company, Chicago, Ill., U.S., 7th April, 1884; 5 years.

Claim.—1st. In a hydro-carbon vapour stove, the combination of a frame, an elevated burner, a reservoir below the burner and in communication therewith, and an air pump connected by a valved passage with the reservoir, said reservoir being supported by the frame which carries the burner, substantially as described. 2nd. The combination, in a hydro-carbon vapour stove, of a frame, an elevated burner, a liquid reservoir arranged within and supported by the frame, an air pump, a pipe arranged to receive from the air pump and to discharge into the reservoir, a valve in said pipe accessible to the operator, and a valved pipe leading from the reservoir to the burner, substantially as described and for the purposes set forth. 3rd. In a hydro-carbon stove, the combination, with the stove frame and an elevated burner or burners, of a reservoir for hydro-carbon liquid located wholly beneath the burner, said reservoir being supported by the frame and provided with an inlet for the hydro-carbon liquid located at a considerable distance below the top, so as to have a relatively large air space above the liquid therein when fully supplied, means for compressing air into said air-space, means for retaining the air when so compressed, and a pipe leading from the bottom of the reservoir to the burner or burners provided with a suitable cock or cocks, whereby sufficient air may be compressed and retained in the reservoir when fully supplied with liquid to force all of said liquid to the burners *a, a*, substantially uniform pressure. 4th. In the hydro-carbon gas stove described having the cast-iron frame A A', elevated burner or burners B, reservoir R, pump P and the connections described, the reservoir and pump rigidly secured to the frame beneath the top A and between the legs A', substantially as and for the purposes set forth.

No. 19,092. Harvester Rake.

(*Râteau de Moissonneuse.*)

The McCormick Harvesting Machine Company, (assignee of Henry E. Pridmore), Chicago, Ill., U.S., 7th April, 1884; 5 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, with the gate-latch which holds the switch or gate positively closed against the stress of its controlling spring, of a jointed trip rake adapted to be rocked upon its main pivot by the tappets on the rake arms as they pass to release said latch, and a connection between the one member of said lever and a hand lever or treadle under control of the driver or attendant, whereby said lever may be swung out of the path of the tappets on the rake arms that the latch may not be released by them. 2nd. The combination, substantially as hereinbefore set forth, of a switch or gate, a gate latch which holds it positively closed against the stress of its spring, a jointed trip lever actuated by the upper member of said lever may be rocked upon its pivotal connection with the other to remove it from the effective path of said arms. 3rd. The combination, substantially as hereinbefore set forth, of the switch or gate, the gate latch which holds it positively closed against the stress of its spring, a lever arm to release said gate latch, a laterally adjustable stop on the free end of said lever, and tappets of varying lateral length on the successive rake arms, whereby the lever may be arranged to be operated by any one or more of said rake arms by adjusting the stop. 4th. The combination, substantially as here-

inbefore set forth, with the gate latch, of the slotted casting pivoted to the pin over which the latch takes and serving as a keeper or guide for its free end, and the lever arm pivoted to the top of said casting with its upper end arranged to be actuated by tappets on the rake arms, and its lower end provided with a lug which comes beneath the end of the gate latch to release it as said lever arm is moved by the tappets. 5th. The combination, substantially as hereinbefore set forth, with the gate latch, of the slotted casting pivoted to the pin over which the latch takes to serve as a keeper to its free end, a spring acting upon said casting to hold it in a normally vertical position, an arm pivoted to the upper end of said casting and held normally alongside thereof by spring pressure and having its upper end projected into the path of tappets on the rake arms, and its lower end provided with a lug which comes beneath the end of the gate latch, whereby said arm and casting will be moved bodily together on the pivot of the casting by the contact of a tappet upon a passing rake with the upper end of said arm and the gate latch will be lifted and released. 6th. The combination, substantially as hereinbefore set forth, with the gate latch, of the slotted casting moving pivotally upon the pin over which said latch takes, the lever arm pivoted to the upper end of said casting, the spring coiled about the pivot of the casting with one end seated against the rake cam and its other end extended and coiled about the lever arm pivot and finally bearing against the upper end of said lever-arm, whereby the casting is held in a normally vertical position with the lever arm alongside thereof, and the two will be moved together as of one piece by the contact of a tappet on a passing rake and the upper end of the lever arm. 7th. The combination, substantially as hereinbefore set forth, with the gate latch, of the slotted casting pivoted to the pin over which it takes, the stop on said casting to bear against the rake cam, the lever arm pivoted to the upper end of the casting and stopped by a projection thereover with a lug at its lower end extending beneath the end of the gate latch, and the spring which normally holds these parts in position determined by their respective stops. 8th. The combination, substantially as hereinbefore set forth, with the gate latch, of the slotted casting pivoted to the pin over which said latch takes and forming a keeper for its free end, the lever arm pivoted to the upper end of said casting and projecting thereabove into the path of the tappets upon the rake arms, the lug on said lever arm to disengage the gate latch, the spring holding said casting and lever arm in a normally upright position, one alongside the other in position for action, and the link or equivalent connection with mechanism controlled by the driver, whereby the lever arm can be rocked upon its pivot without disturbing the casting to throw its free end out of the effective path of the tappets on the rake arms. 9th. The combination, with the gate latch, of the casting pivoted to the pin over which said latch takes, the lever arm pivoted to the upper end of said casting projecting thereabove into position to be operated upon by tappets on the rake arms in their passage, the lug on the lower end of said lever arm coming beneath the end of the gate latch, stops for said casting and lever arm, and a single spring holding them together one alongside of the other in operative position determined by their respective stops, so that they may move as one when the lever arm is pushed by a rake arm.

No. 19,093. Sap Spout. (*Bec de Sucrierie.*)

Charles C. Post, Burlington, Vt., U.S., 8th April, 1884; 10 years.

Claim.—1st. A metallic sap-spout provided with an inclined shoulder D upon its top, and the point *d* upon its lower part, whereby when the spout is being driven into the hole B the inclined shoulder D will force the point *d* downward into the bark, substantially as shown. 2nd. A sap-spout, provided with a trap for the purpose of excluding the passage of air through the orifice for the escape of the sap, substantially as set forth. 3rd. A sap spout having its end closed or partially closed, and provided with a trap *g* and the opening *f*, substantially as described. 4th. In a sap-spout, the combination of the trap *g*, the partially closed end having the opening *f* through it, and the fins *e* which project into the hole in the tree, substantially as set forth. 5th. A metallic sap-spout provided with one or more ribs *i*, which extend lengthwise from its outer end, substantially as and for the purpose set forth. 6th. A metallic sap-spout having suitable fins *e*, for sustaining it in the tap hole, strengthened by suitable braces *o* near the outer extremities, substantially as shown and described.

No. 19,094. Torsion Spring for Vehicles.

(*Ressort à Torsion pour Voitures.*)

Daniel Budd, Penn Yan, N.Y., U.S., 8th April, 1884; 5 years.

Claim.—1st. The torsion-spring B, bent so as to form inverted U-shaped side springs *b*, and having its ends lapping and confined in the brackets *a, a*, at opposite sides of the bottom of the body, as set forth. 2nd. The spring B, bent so as to form inverted U-shaped side springs *b*, and having its ends secured in the brackets *a, a*, in combination with the rigid frame F G H, substantially as described. 3rd. In a wagon, the diagonal braces K, K holding the king-bolt *i* and attached to the side bars G, substantially as and for the purpose set forth. 4th. In a wagon, the flat spring J attached to the under side of the rear axle, hinged to the wagon body and provided with the knee *d*, substantially as and for the purpose set forth.

No. 19,095. Axle and Axle Box.

(*Essieu et Boite à Huile.*)

Robert C. Parvin, Mount Holly, N.J., U.S., 8th April, 1884; 5 years.

Claim.—1st. A metallic axle box with an inner central annular enlargement formed integrally with the box, and retained upon the axle by a collar *c*, and linch-pin, in combination with a series of loose or iron-journaled friction rollers extending nearly the entire length of the box and having central recesses, substantially as shown and specified. 2nd. The combination of the axle-box A, the internal annular central rib *f*, the friction rollers *g* having recesses *g'*, with the axle arm B having central collar *b*, the washer *c* and the collar *p*, all arranged and operating substantially as shown.

No. 19,096. Toy Blocks. (Blocs Jouets.)

Seth R. Scott, Orange, N.J., U.S., 8th April, 1884; 5 years.

Claim.—1st. The toy blocks in sets, each of which blocks is a portion of a cube, and the cubes formed by blocks of one set are half the measurement of cubes formed by blocks of another set, substantially as set forth. 2nd. The toy blocks, each made as a portion of a cube and having letters or figures on one or more of the surfaces, in combination with a table or board having grooves and the metal strips fitting into such grooves and made removable, substantially as set forth. 3rd. The toy blocks in sets, the larger blocks all being multiples of the smaller blocks, substantially as and for the purposes set forth. 4th. The toy blocks, having undercut channels or grooves, in combination with the interlocks v that are wider near the ends or edges than in the middle and fit into such undercut grooves, substantially as set forth. 5th. The toy blocks having lines upon their surfaces, for the purposes and as set forth.

No. 19,097. Embroidering Machine.*(Machine à Broder.)*

J. L. Parks, Wansoon, Ohio, U.S., 8th April, 1884; 5 years.

Claim.—1st. As an improvement in embroidering machines, the section A provided with the bar C, formed with an elongated slot b , and button-opening c , and adjustable flat spring e , the section B provided with bar C, having headed stud h , elongated slot i and adjustable flat needle m , and a connecting screw for coupling the lower ends of the bars C and C₁, substantially as and for the purposes set forth. 2nd. In an embroidery machine, the combination, with the needle-bar C₁, provided with a flanged recess k in its inner face, at its lower end, in which the needle is secured, said flanges projecting above the needle, of the bar C having the flat spring e curved inwardly so that it enters between the flanges of the recess k , whereby the flat spring will be guided and lateral movement of the same prevented, substantially as specified.

No. 19,098. Preparing Hides for Tanning.*(Préparation des Peaux pour le Tannage.)*

John Palmer, Blackfriars Road, Eng., 8th April, 1884; 5 years.

Claim.—1st. Treating hides and skins for the removal of the hair and wool therefrom, by repeatedly immersing them in water and exposing them in the open air until the hair or wool will separate therefrom, substantially as herein described. 2nd. Treating hides preparatory to tanning, by repeatedly immersing them in water and exposing them in the open air until, by the application of pressure, a dark fluid is removed therefrom, substantially as herein described. 3rd. As a new article of manufacture, hides prepared for tanning that are perfectly swollen and free from smell, without having been treated with lime or acids.

No. 19,099. Hoisting Bucket. (Godet d'Élévateur.)

George P. Brown, Montreal, Que., 8th April, 1884; 5 years.

Claim.—1st. A hoisting bucket having suitable bail B, and formed with scoop shaped front A₁, with wheel C, attached to said front wheels C₂, C₃, arranged near the rear, and trunnions a, a , for attachment to a truck, substantially as and for the purpose described. 2nd. The combination of a hoisting bucket A, having trunnions attached thereto, with a truck D provided with cheeks or recesses for such trunnions, and means for locking or holding same together, substantially as described. 3rd. The combination, with bucket A having trunnions a, a , and truck D having cheeks or recesses b, b , of a locking device for holding said trunnions in place while the bucket is tilted forward and downward, substantially as described. 4th. The combination, with the bucket A having trunnions a, a , and truck D having cheeks or recesses b, b , and eyes f, f , of the bent looking bar F and rear catch or locking device G, substantially as and for the purpose specified.

No. 19,100. Cover for Sap Bucket.*(Couvercle de Seau de Sucrierie.)*

George S. Wood, Cowansville, and Guy R. Potter, Sweetsburg, Que., 8th April, 1884; 5 years.

Claim.—The combination of the detached sap bucket cover B, and the securing spring C, the ends of which are bent into hooks F and sharpened, substantially as and for the purpose hereinbefore set forth.

No. 19,101. Weighing Machine.*(Balance à Bascule.)*

Eugen Wolner, Liverpool, Eng., 8th April, 1884; 5 years.

Claim.—1st. The combination of the platform A, resting by means of stool B, legs and round shafts e_3 on the hooked stirrup-links e_1 , with saddle links e_2 , mounted on the knife edges of the levers and sustaining the links e hooked into them, by which means the links can be unhooked and dismantled without disturbing the knife edges. 2nd. In a weighing machine, the combination of the series of stirrup-links e_1 supporting the weight of a series of saddle links e_2 carrying same, the knife edges e_3 , load arms e_4 and lever beams e_2, e_3 linked together, by which means the load is well and evenly distributed. 3rd. The lever beams C₂, C₃ of cruciform section with hanger-shaped ends, provided with knife edges G upon which they are supported on their central axis of gravity, whereby a swinging or rocking motion in stable equilibrium is produced. 4th. The lever beams C₂, C₃, having load-arms C₅ armed with knife edges on the inner side of the fulcrum, knife edges G, in combination with a connecting link E between the lower beams, whereby the entire load is divided between the fulcrum supports and tipping action of the lever beams prevented. 5th. The combination of the lever beams C₂, C₃ having their respective arms C, C₁, under and the other above said beams respectively, and carrying knife edges F, F with the adjustable link E. 6th. The major lever beam C₃ provided with a circular rim C₆, substantially as and for the

purposes described. 7th. The compound lever consisting of the major lever beam C₃ having circular rim provided with slotted holes, in combination with the lever arm C₄ with circular flange fitting the circular rim and holes to correspond with its holes, by which means the lever C₄ can be made to stand at any required angle with the said major lever beam C₃, for the purposes described. 8th. The diagonal lever C₄ having circular flange fitting circular rim on major lever beam and formed with upper and lower sides alike, so that it is reversible and capable of being placed at any required angle to the right-handed or left-handed machines. 9th. The combination, of the diagonal lever C₄, with the loose muff carrying suspension knife edge and fitting over the end of said lever, and capable of being moved along the end of said lever and of being adjusted to screw C₇, by which means the point of suspension can be very easily adjusted. 10th. The loose muff C₈, having a rim and short piece for carrying the suspension knife edge bolted to said rim, substantially as and for the purposes described. 11th. In a weighing machine where the weight to be weighed is suspended from a lever and counterpoised and indicated by the varying angle at which the counterpoise stands, the combination, with said lever, of a sliding weight adjustable in position and in scale for weighing off the tare, substantially as described. 12th. In a weighing machine for weighing articles by the difference of angular position of the counterpoise, a fluid cushion formed by confining fluid in a chamber with limited outlet, having in it a loosely fitting piston that moves relatively with the chamber at every oscillation of the counterpoise. 13th. The combination in a weighing machine, of the counterpoise arm h_2 with the box K, the loosely-fitting piston L₁ and the chamber of liquid J, substantially as and for the purposes described. 14th. In combination with a weighing machine, a steadying apparatus consisting of a piston L₁ and chamber K of a little larger sectional area, one of them being made to follow the oscillations of the weighing machine, and consequently having a motion relative to the other and a fluid inside said chamber with not sufficient escape or area of passage round the piston to admit of the quick relative motion between the two, for the purposes described. 15th. The combination of the counterpoise cylinder oscillating on lever arm h_2 , the curved piston rod L and the piston L₁ fitting loosely in the counterpoise cylinder, but rigidly attached to the piston rod L, with the cylinder of liquid J, substantially as described. 16th. The relieving apparatus consisting of the hand wheel R₂, shaft R₁, crank and crank-pin R capable of engaging into hook r as the hand wheel is actuated, whereby the hook r is raised and brought forward till the hook r hooks into shackle g, g where it is left, when the crank pin containing its forward revolution, falls again and the reverse action takes place when the crank is turned the reverse way. 17th. The combination of the suspension rod G₁ having two hooks, one the terminal or suspension hook, and the relieving hook with a device for lifting the rod G₁ out of position by lifting hook r , and a stop R₃ for holding said device in any position. 18th. The compound lever carrying on its respective arms a balance weight and scale for showing tare, a set of indicator scales, the pull of a system of levers from the platform, and the lastly a compensating weight hanging at a steep inclination below the axis of the lever. 19th. In combination with a compound lever carrying the pull of a system of levers of the weighing scale on one arm, a compensating weight on a nearly vertical arm, and a series of scales attached to an arm, the finger wheel w worked by gear from said indicator, and so geared that each of the fingers of the wheel shall indicate, in succession, on the moving scales, the smaller increments of weight, while a stationary pointer S shall indicate the large weight, substantially as set forth infg. 6. 20th. The combination of lever h_2 , weighted chain M and finger wheel O, with the series of scales P, and stationary pointer S, substantially as and for the purpose described. 21st. In a weighing machine, the combination, with an arm h_2 oscillating (with the difference of weights to be weighed) beside a stationary frame, the one (arm or frame) carrying a pointer and the other a scale for that pointer, of a conductor of motion such as chain M, giving motion to the axle of a wheel revolving alongside of the lever, so as to greatly multiply the motion of the wheel relatively to the lever, by which means with a pointer or series of pointers on one and a series of scales or a scale on the other, the minor weights can be read off through the movement of the wheel in reference to the lever and the major weights by the movement of the lever in reference to the stationary frame.

No. 19,102. Press Roller Gear of Gang Saw Mill. (Rouleau de Charriot de Scierie.)

Henry D. Wickes and Edward N. Wickes, East Saginaw, Mich., U.S., 9th April, 1884; 15 years.

Claim.—In a gang saw mill, the combination, with the frame carrying the pressure roller B, and its vail C, of the right hand and left hand screws A, A₁, attached at their lower ends to said frame, the bevel gears at their upper ends operated upon by bevel gears and power shaft, the friction gear for reversing the motion of the screws, the sliding boxes I, levers J, for operating the same, spiral springs L, L₁, and nuts P, P₁, arranged upon the screws within the grooved bearings z , substantially as specified.

No. 19,103. Lubricating Oil.*(Huile à Lubrification.)*

John E. Gill, Franklin, Pa., U.S., 10th April, 1884; 5 years.

Claim.—1st. In the manufacture of lubricating oils, composed of mineral oil added to a compound of animal or vegetable oil and an oxide or a carbonate of lead, the process of, first raising said compound to, and holding it at a temperature of about 480 degrees Fahrenheit, and then by adding a flow of mineral oil reducing said temperature about twenty degrees, and then raising same to said high temperature, then holding the mixture at said temperature for several minutes, for the purpose set forth. 2nd. A lubricating oil composed of a compound of mineral or vegetable oil, and either oxide or a carbonate of lead, to which mineral oil is subsequently added, said compound being first raised to a temperature of about 480 to 500 degrees Fahrenheit, then reduced by adding mineral oil about 20 degrees, and then raised again to the first high temperature before the rest of the mineral oil to be added is introduced. 3rd. In the manufacture of lubricating oils composed of the elements named

the said compound being subjected to heat which will raise its temperature by regulating the applied to 475 to 500 degrees Fahrenheit, and of holding it at that high temperature for fifteen minutes or more according to the consistency desired, all before the mineral oils is introduced and as and for the purposes set forth. 4th. A lubricating oil composed of a compound of animal or vegetable oil and an oxide or a carbonate of lead, said compound being forced to a temperature of 475 to 500 degrees Fahrenheit, and held at that high temperature for fifteen minutes or more according to the consistency desired, and then united with mineral oil, substantially as and for the purpose described. 5th. In the manufacture of lubricating oils from the elements named, the process of treating said compound with a strong inflow of mineral oil of a temperature of 80 to 150 degrees F., substantially as and for the purpose described. 6th. In the manufacture of lubricating oils from the elements named, the process of stopping said inflow of previously heated mineral oil when the temperature of said compound and added oil shall have been reduced to 340 to 320 degrees F., and maintaining about said temperature for about ten or fifteen minutes, substantially as and for the purpose set forth. 7th. The improvement in the process of preparing lubricating oils, which consists in maintaining the fire during the addition of the cooling oil, whereby the cooling of the mixture is effected gradually. 8th. In the manufacture of lubricating oils from a compound of animal or vegetable oil with an oxide or a carbonate of lead to which after treatment mineral oil is added, the process of first forcing the temperature of said compound to 475 to 500 degrees F., of holding it at that high temperature for fifteen minutes or more according to the consistency desired, then adding a strong inflow of mineral oil previously heated to 80 to 150 degrees F., until the fire being maintained and regulated the temperature shall be reduced to 340 to 320 degrees F., and maintaining said last mentioned temperature for about ten or fifteen minutes, and then adding mineral oil as desired, all substantially as and for the purpose set forth. 9th. A lubricating oil composed of animal or vegetable oil and an oxide or carbonate of lead and mineral oil produced by the following processes, substantially as herein described, to wit: making a compound of the animal or vegetable oil with the oxide or carbonate of lead, and by regulating the applied heat, forcing the temperature thereof to 475 to 500 degrees F., and holding the mixture at that high temperature for fifteen minutes or more according to the consistency desired in the resulting oil, and then treating said compound before it is allowed to cool to any considerable extent with a strong flow of mineral oil at a low temperature the applied heat being retained until the temperature shall be reduced to 340 to 320 degrees Fahrenheit, and stopping said inflow and maintaining said last mentioned temperature for about ten or fifteen minutes, and in then introducing the desired quantity of mineral oil, the cooling of the compound and mixture being made gradual and being regulated, substantially as and for the purpose described.

No. 19,104. Riding Saddle. (Selle.)

Samuel Payette and Edward N. Heney, Montreal, Que., 10th April, 1884; 5 years.

Claim.—1st. The combination of the leather piece A and D, configured as described, and provided with a filling of felt, &c., to form a saddle, substantially as described. 2nd. The combination of the leather pieces A and D, configured as described, and provided with a filling of felt, &c., and with stiffening iron E, the whole substantially as described. 3rd. As a new article of manufacture, a riding saddle having a blocked or pressed stiff leather bottom, provided with a blocked or pressed top, and further provided with a filling between the top and bottom, substantially as described.

No. 19,105. Process for Manufacturing Steel. (Procédé de Fabrication de l'Acier.)

James J. McTighe, Pittsburgh, Pa., U.S., 10th April, 1884; 5 years.

Claim.—1st. The process of manufacturing steel, consisting in subjecting iron while in a molten state to the action of a hydro-carbon gas or vapour, substantially as described. 2nd. The process of manufacturing steel, by first melting cast iron, then burning out its silicon and carbon with air, and finally, while still molten, recarburizing the iron by subjecting it to the action of a hydro-carbon vapour or gas, substantially as described. 3rd. In the manufacture of steel, the process of recarburizing iron by forcing a hydro-carbon gas or vapour through the iron while the latter is in its molten state, substantially as described.

No. 19,106. Stove. (Poêle.)

John H. Keyser, New York, N.Y., U.S., 10th April, 1884; 5 years.

Claim.—1st. The combination, with a stove, of a ring B provided with holes or openings and a foot rest, substantially as set forth. 2nd. In a stove, the upper and lower flanges C, to receive the sheet iron upon the upper and lower surface of said ring section to attach the ring to the two sections of the stove, substantially as set forth. 3rd. The combination, with a stove, of the double rings E, E, substantially as set forth. 4th. The combination, with a stove, of a ring B, having openings, as shown, and made smaller at the top than at the bottom, substantially as set forth.

No. 19,107. Manufacture of Gelatine Capsules. (Fabrication des Capsules en Gélatine.)

John Krehbiel, Detroit, Mich., U.S., 10th April, 1884; 5 years.

Claim.—1st. The process, substantially as herein described, of manufacturing gelatine capsules consisting of immersing mold pins projecting from the face of a circular base-plate and which have been lubricated to facilitate the removal of the capsules when finished, and such immersion being had in a vessel, substantially as described, adapted to keep the gelatine in a suitable limpid condition, without drawing such mold pins from such immersion, rolling the base-plate to which they are attached along an inclined plane to a revolving rack, cutting the capsules upon the pins to any equal but desired

length, and then removing the same from the pins by a pinching mechanism, substantially as described. 2nd. As one of the means for carrying out the hereinbefore described process, a device adapted to hold the gelatine in proper condition consisting of a vertically moving supporting frame, carrying stirrers adapted to recede and advance as the molds are immersed, and provided with mechanism, substantially as described, by means of which such stirrers are rotated or partially rotated within the dipping vessel, substantially as specified. 3rd. As one of the means for carrying on the above described process in manufacturing gelatine capsules, a circular plate provided with mold pins projecting from one of its faces, and with a handle projecting from the axis of said plate at its rear and adapted to be rolled upon its edge along an inclined plane, substantially as and for the purposes described. 4th. As one of the means for carrying on the above described process in the manufacture of gelatine capsules, a lubricating device consisting of a series of slotted thimbles within the bare of which are secured cloths saturated with the lubricating material, such thimbles being arranged in a yielding bed-plate by means of which they are adapted to adjust themselves and register with the pins of the mold plate to be lubricated, substantially as set forth. 5th. As one of the means for carrying on the hereinbefore described process of manufacturing gelatine capsules, a polygonally-shaped rack, each of the faces of which are provided with locking devices adapted to secure the circular mold plates as they are delivered to such rack from an inclined plane extending from such rack to a joint near where the dipping part of the process is carried on, substantially as and for the purposes specified. 6th. As one of the means for carrying on the hereinbefore described process in the manufacture of gelatine capsules, a cutting device consisting of hollow or ring cutters secured between rigid front and rear plates, and within a spring plate between such front and rear plates through which are co-incident holes, and provided with stops and guide rods, whereby when the ring cutters in their plates are passed over and upon the mold pins hereinbefore described, an eccentric rotary motion given by the hand of the operator will cut the capsules upon the mold plates into desired and uniform lengths, substantially as set forth. 7th. As one of the means for carrying on the hereinbefore described process of manufacturing gelatine capsules, a device for removing said capsules from the mold pins after such capsules have been cut to the desired and uniform lengths, consisting of a series of sliding jaws actuated by levers that first clamp the jaws upon the mold pins upon which the capsules are formed, and then, by means of cams striking the face of such mold plate, push such capsules from the mold pins, substantially as described. 8th. As a means for completing the capsules and making them ready for market, a device, substantially as herein described, by means of which a conjunction is effected between the capsule body and its cap, the parts being constructed and operating substantially as herein described.

No. 19,108. Harrow Tooth. (Dent de Herse.)

Philena Stanton, Sand Lake, Mich., U.S., 10th April, 1884; 5 years.

Claim.—1st. A flat spring harrow tooth, twisted at or about a right angle at its upper and lower part, turning the middle part of the tooth edgewise in the direction of the draft. 2nd. The reversible point B having its underside recessed at J, forming shoulders I corresponding in shape to the end of the tooth, and secured to the lower end of the same by a screw passing through the centre of the point. 3rd. The combination of the curved spring tooth A, with the reversible point B having recess J screwed to the end of the tooth, all substantially as and for the purpose set forth.

No. 19,109. Advertising Device. (Appareil de Publicité.)

Thomas H. Bowles, Atlanta, Ga., U.S., 10th April, 1884; 5 years.

Claim.—1st. A moving advertising device, constructed as described, adapted to be connected with, and to be operated by, the axles or operating shafts of driven machinery, substantially as shown and described. 2nd. The combination with vertical shafts operated by the axle of a car, of pulleys situated respectively within and without the car, and endless advertising aprons or bands, substantially as shown and described. 3rd. In a car or other vehicle, an endless apron or band having advertisements on its surface, arranged longitudinally of the vehicle upon supporting rollers, in combination with suitable gearing positively connecting one of the rollers to one of the car axles, whereby a continuous longitudinal movement is imparted to the apron when the car is in motion, substantially as described. 4th. In combination, in a car, an endless apron or band, an axle, and means for conveying motion from the axle to the apron, as described. 5th. In a car, and in combination with a supporting case for such mechanism, an endless band provided with advertisements, rollers supporting the same, an inclined shaft connected by a universal joint with one of said rollers, bearings *a, b*, supporting the shaft, and means for operating the same, substantially as described. 6th. The rollers B, and *m*, the band mounted thereon, and means for moving the same continually, said rollers being combined with a case formed of upper and lower strips, and a longitudinally dividing board forming a support for said strips, and located between the parallel portions of the band, thereby preventing rubbing of such portions against each other, all as set forth. 7th. The combination of the supporting and driving rollers B and *m*, carrying an endless band, the case composed of upper and lower strips, and the supporting and dividing board, together with the guide rollers *p, p*, supported in such case between the advertising band and the frame of the car, whereby such band deflected and freed from friction against the car frame, all as set forth.

No. 19,110. Button and Stud. (Boutons.)

Thomas W. F. Smitten, Brooklyn, N. Y., U.S., 10th April, 1884; 5 years.

Claim.—1st. A button or stud having a flattened post and a back-plate or shoe eccentric thereto, or offset to one side thereof, and with the post contracted between the head and shoe so that it may be turned in a button-hole to facilitate the insertion of the button or

stud into a button-hole and its removal therefrom, substantially as herein set forth. 2nd. The improvement in making the post of a button or stud and a shoe eccentric thereto, consisting in, first, producing a blank having the post portion B, and the shoe portions *b, b*, and then bending the shoe-portion *b, b*, into a position at right angles to the post portion B, and in subsequently folding the post portion B lengthwise to form a post of double thickness and to bring the portions *b, b*, into proximity so that they will form, in effect, a single plate, as and for the purpose described.

No. 19,111. Postal Cabinet. (*Buffet Postal.*)

Lyman C. Gray, Fort Dodge, Iowa, U. S., 10th April, 1884; 15 years.

Claim.—1st. In a device for holding letters, documents, and similar articles, the combination, with a suitable support, of the superimposed leaves connected at one edge to, and swinging on the said support, the pockets, such as 5, and the marginal index characters, arranged substantially as and for the purpose described. 2nd. In a device for holding letters, documents and similar articles, in combination with a suitable support, a removable leaf, connected at one edge to, and swinging upon said support, provided with pockets, and marginal characters, or index, arranged directly adjacent to said pockets and in the manner substantially as described, so that said index may be displayed on the front edge and on both sides of the said leaf, when the device is in operative condition, as herein set forth. 3rd. The leaves hung at their edges and removable from their supports, each leaf extending laterally beyond the margin of the leaf in front of it, when the same are either entirely opened or closed, in combination with the pockets and the marginal index, the characters of which are arranged directly adjacent to said pockets, substantially as and for the purpose described. 4th. The combination and arrangement of the leaves arranged in sections and provided with pockets 5, at least one of said pockets being placed opposite to, and impinging upon the pocket of the adjoining leaf, whereby the leaves are adapted to swing and close against each other without disturbing the contents of the pockets by contact of the leaves, substantially as described.

No. 19,112. Method of and Apparatus for Separating Dust from Air. (*Méthode de Séparation de la Pousière d'avec l'air et Appareil pour cet objet.*)

The McIntyre Manufacturing Company, (assignee of John M. McIntyre,) Lockport, N. Y., U. S., 12th April, 1884; 5 years.

Claim.—1st. The herein described method of separating dust from air, which consists in driving the dust particles out of the air current by centrifugal force into a closed receiving chamber, while the air which has been freed from dust is permitted to escape in a different direction, substantially as set forth. 2nd. In a machine for separating dust from air, the combination of revolving beaters and a closed receiving chamber having an inner perforated wall surrounding said beaters, and inlet and outlet openings through which the dust-laden air is conducted to the beaters and the purified air is permitted to escape therefrom, substantially as set forth. 3rd. In a machine for separating dust from air, the combination of revolving beaters and a closed receiving chamber having an inner perforated wall surrounding beaters, and inlet and outlet openings through which the dust-laden air is conducted to the beaters and the purified air is permitted to escape therefrom, and an auxiliary fan whereby the air is caused to flow through the separator, substantially as set forth. 5th. In a machine for separating dust from air, the combination of revolving beaters with a closed receiving chamber having its inner wall constructed with openings having inwardly projecting rear edges, substantially as set forth. 6th. The combination, with the chamber G having an inner perforated wall *g*, of revolving beaters C, a head D to which the beaters are secured, and a hood F by which the spaces between the receiving portions of the beaters are closed, substantially as set forth.

No. 19,113. Press for Hay, &c.

(*Presse pour le Foin, &c.*)

Peter Lord, Jean B. Vinet and Avila S. Vinet, Montreal, Que., 12th April, 1884; 5 years.

Claim.—1st. The combination of the lever H, weight L, toggle-joint N I, follower block P, casing A, door D and chute E, the whole substantially as set forth. 2nd. The combination of the casing A, having chute E, and door D, block R and follower block P, operated as described, substantially as set forth. 3rd. The combination of the follower block P, of a press toggle-joint N I, lever A, weight L, line, &c., T and eccentric B having clutch B₂, and revolving arm D; having pawl D₂, the whole substantially as described. 4th. The combination of the casing A, follower block P and spring pawls *b*, substantially as described.

No. 19,114. Process and Apparatus for Covering Wire for Electrical Purposes. (*Procédé et Appareil pour Couvrir les Fils Electriques.*)

New York Insulated Wire and Vulcanite Company, New York, (assignee of John J. C. Smith, Paissac, N. J.,) U. S., 12th April, 1884; 5 years.

Claim.—1st. The process of covering wire for electrical purposes, which consists in preparing sheets of plastic insulating material and fibrous backing combined by pressure or calendering, so as to inseparably attach the fibrous backing to the plastic composition, cutting in a long strip of requisite width, drawing this tightly around the

wire which is laid lengthwise thereon, pressing the inner meeting faces of the composition together on one side of the wire thus producing a jointless insulating rubber envelope with a fibrous covering, and cutting off the projecting edge or flange. 2nd. The process of covering wire for electrical purposes, which consists in pressing the wire into a rubber strip *c* having a fibrous backing *c*, drawing the strip tightly over the wire by means of the projecting sides of the fibrous backing to expel the air and complete an envelope of rubber, pressing the sides of the fibrous backing between suitable cutters, as set forth. 3rd. In a machine for covering wire, the combination of the guide-bar having a depression for the strip, and a groove beneath the depression to receive the strip and wire when the latter are depressed, a suitable guide for the wire and a wire-depressing device, as set forth. 4th. The combination, with a guide-bar having a depression for the strip, and a groove beneath the depression, of a wire-depressing device for the strip, and a groove beneath the depression, of a wire guide 4 and a means for depressing the wire, as set forth. 5th. The grooved wheel 5 for embedding the wire in the strip, in combination with a table having a groove and a depression above said groove for guiding the strip, and a wire guide, as set forth. 6th. The combination of the grooved guide bar 3, and the grooved wheel 5 for pressing the wire into the covering material within the groove of guide bar 3, substantially as described. 7th. The combination of guide bar 3 having depression *l* *z* for the strip, and groove I beneath the depression, a wire guide 4 over said guide-bar, and a grooved wheel 5 for embedding the wire in the strip and forcing it with the strip into the groove, as set forth. 8th. The combination of a table having a semi-circular groove for supporting the strip and embedded wire, and a pair of horizontal closing pressure rolls 9, 9 having quarter-circular grooves in the lower parts of their peripheries, to draw the covering strip around the wire and press the vertical faces of the strip together, as set forth. 9th. The combination of the groove wheel 5, a suitable guide bar and the pressure or closing rolls 9, substantially as and for the purposes set forth. 10th. The combination, with the guide bar 3 and grooved wheel 5, of the pair of closing pressure rolls 9 grooved on the lower parts of the peripheries to adapt them to draw and compress the covering tightly round the wire, as explained. 11th. The combination of the slotted guide 12, a suitable guide bar strip closing pressure rolls and rotary cutters 13, substantially as and for the purposes set forth. 12th. The combination, with the grooved wheel 5 and guide bar 3, of the studs or guides 15 to elevate the edges of the covering material while the wire is embedded therein, as described. 13th. The combination, with the guide bar 3, grooved wheel 5 and 13th. The combination, with the guide bar 3, grooved wheel 5, 16, for closing pressure rolls 9, of the two pairs of studs or guides 15, 16, for elevating the sides of the covering strips to vertical or parallel position, in preparation for passing between said closing pressure rolls, as explained. 14th. The combination of a table having groove for the covering strip closing rolls, slotted guide bar for supporting the flange of the covering, rotary cutters for removing the flange, and drawing rolls, as set forth.

No. 19,115. Car-Coupling. (*Accouplage de Chars.*)

George E. Hoadley, New Haven, (assignee of Edward L. Granger, South Manchester,) Ct., U. S., 12th April, 1884; 5 years.

Claim.—1st. The combination of the draw-bar A, its head B constructed with a flaring mouth and with a shoulder *a* to engage the link, the locking cam E hung in the chamber within the head upon an axis transversely across the head, the cam constructed with a shoulder forward of its axis and so as to take a bearing against the top of the chamber over the link engaging shoulder, substantially as described. 2nd. The combination of the draw-bar A, its head B constructed with a flaring mouth C, the link engaging shoulder *a*, made in a separate piece from the head and introduced therein, a cam E arranged in the chamber within the head upon an axis transversely across the head, constructed with a shoulder *e* forward of its axis and so as to take a bearing against the top of said chamber above the link engaging shoulder, substantially as described. 3rd. The combination of the draw-bar A, its head B constructed with the flaring mouth C, and with the link engaging shoulder *a*, the cam E hung within the chamber of the head upon an axis transversely across the head, the said head having its top closed so as to completely cover the cam, and a counterpoise, the tendency of which is to turn the cam toward the link engaging shoulder, substantially as described. 4th. The draw-bar A, its head B constructed with a flaring mouth C, and with a link engaging shoulder *a*, the cam E hung within the chamber of the head upon a shaft transversely across the head, constructed with a shoulder *e* forward of the axis, arranged to take a bearing against the top of the chamber over the link engaging shoulder, said shaft extending outside the head and provided with means, substantially such as described, for turning said cam, substantially as described.

No. 19,116. Suspender. (*Bretelle.*)

George F. Atwood and Henry C. Barnes, Swanton, Vt., U. S., 12th April, 1884; 5 years.

Claim.—The suspenders consisting of non-elastic shoulder-straps and elastic back-straps respectively joined to said shoulder-straps at an obtuse angle, and the non-elastic cross-strap connecting the joined ends of the shoulder-strap and back-strap of one side to those of the other side, and back-strap of the other side, said cross-strap being adjustable to a higher or lower position by means of buckle-slides applied to the ends of the back-straps, substantially as specified.

No. 19,117. Horse Power. (*Manège.*)

Charles Sandford, Springbrook, and William Gay, Rawdon, Ont., 15th April, 1884; 5 years.

Claim.—The combination, with the main frame composed of the shafts A, A, ties B, B, sills E, ties E₁ and corner pieces F having friction rollers F₁, of the radial shafts G, G, H, H, bevel gears G₁, H₁, crown wheel K having hub K₁, bevel pinions G₂, guide rollers J, cap I, trunnions I₁, and bridge piece B₁ provided with brackets K₂ for the draft poles L, the whole constructed and operating as and for the purpose set forth.

No. 19,118. Fruit Dryer. (*Etuve à Fruits.*)

William H. Langhead and Joseph B. Fleming, Xenia, Ohio, U. S., 15th April, 1884; 5 years.

Claim.—1st. In a fruit drying apparatus, the described combination, with two contiguous vertical chambers or ovens C, C', of the three pairs of endless carriers E₁, E₂, having the rigid rectangularly-projecting fingers *f*, and whose connection with the worms G, G₁, G₂ is such that the fingers in one chamber are constantly ascending, while those in the other chamber are descending, in the manner and for the purposes set forth. 2nd. In a fruit or vegetable drying apparatus, the combination, with the three neighbouring carriers E, E₁, E₂, operated in the manner described, of the tray shifting or transferring mechanism consisting of hinged frame N, having the vertical rollers U, and having the attached swinging frames O, whose studs Q carry rollers R, and to whose arms P is attached the operating cord or chain S, substantially as set forth.

No. 19,119. Fire-Proof Safe and Vault.

(*Coffre et Voûte à l'épreuve du Feu.*)

Henry C. Johnson, Meadville, Pa., U.S., 15th April, 1884; 5 years.

Claim.—1st. In combination with a safe or vault, an exterior gas-holder provided with a vent and sealed with a fusible material, substantially as set forth. 2nd. In combination with a safe or vault, a flat gas-holder provided with a vent and a fusible seal adapted to fit upon a wall or face of a safe or vault applied thereto and adapted to be removed therefrom, substantially as explained. 3rd. A gas-holder for use in safes or vaults, made in a thin, flat form, substantially as shown, whereby it is adapted to fit against the interior wall of the same, and while exposing a large cooling surface, not materially less or change the form of the space within the safe or vault, as set forth. 4th. In combination with a safe or vault, an interior and an exterior gas-holder, each having a vent controlled by a fusible seal, substantially as and for the purpose explained.

No. 19,120. Curry-Comb. (*Etrille.*)

Frederick W. Canfield, Thomaston, Ct., U. S., 15th April, 1884; 5 years.

Claim.—1st. The combination, with the frame or back of a curry-comb, of a combined comb and scraper constructed as shown and described, and journalled thereupon a bearing for the comb of the combined comb and scraper when shut down upon the said frame or back of the curry-comb, and a guard for the teeth of the comb when so depressed, substantially as set forth. 2nd. The combination with the frame or back of a curry-comb, of a combined comb and scraper journalled thereupon in bearings formed integral with it, and provided with lips which are bent to secure the journals of the said comb and scraper in place, substantially as set forth. 3rd. The combination, with the frame or back of a curry-comb, of a combined comb and scraper journalled thereupon, and lugs to prevent the said combined comb and scraper from tipping back, substantially as set forth. 4th. The combination, with the frame or back of a curry-comb, of a combined comb and scraper journalled thereupon, a flat spring secured to the said frame and bearing upon the corner of the comb and scraper, and lugs to prevent the said comb and scraper from tipping back, substantially as set forth.

No. 19,121. Skirt. (*Jupon*)

Lewis Dryfoos, New York, N.Y., U.S., 15th April, 1884; 5 years.

Claim.—1st. The skirt and the pannier, made substantially as described, in combination with means carried by the skirt and respective, whereby the two may be detachably connected together, as and for the purposes hereinbefore set forth. 2nd. The pannier, consisting of a backing of fabric having a series of ruffles or strips, arranged as described, in combination with the skirt provided with flaps *a*, and buttons and button-holes or their equivalents on the edge of the pannier, and the flaps *a* respectively, whereby the said pannier may be detachably connected to the skirt, substantially as set forth.

No. 19,122. Thill Coupling. (*Armon de Limonière.*)

Winfield S. Shanahan, East Chatham, and James Smith, Chatham, N.Y., U.S., 15th April, 1884; 5 years.

Claim.—1st. The block E, formed of any suitable elastic substance and surrounded by a metallic spring F, in combination with an axle clip and shaft iron of a vehicle, the several parts being constructed substantially as and for the purpose set forth. 2nd. The block E, provided with a rectangular opening *a* and surrounded with a metallic spring, the ends of which project into the said opening for the purpose of keeping the block distended, substantially as described.

No. 19,123. Machine for Transporting Cream. (*Machine pour Transporter la Crème.*)

Franklin H. Stanley, and Alexander Dowell, Memphis, Mo., U.S., 15th April, 1884; 5 years.

Claim.—1st. The combination of the air chamber *c*, the cream vat C, with its float F, which is concave below and furnished with its range S, S, and perforated by the tube *t*, and the tempering cylinder T, with its float *f*, and drainage tube *p*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the cream vat C, of the tempering cylinder T, substantially as and for the purpose hereinbefore set forth.

No. 19,124. Machine for Packing Hay.

(*Machine pour Embaquer le Foin.*)

William C. Johnston, Toronto, Ont., 16th April, 1884; 5 years.

Claim.—1st. The main frame A, constructed substantially like an ordinary hay-press and provided with a suitable cover, in combination

with a movable bottom E, located within the press A, and having arms *b* extending outside of the frame A, which arms *b* project through vertical openings extending from the top to the bottom of the frame A, so that when the power for lifting the bottom E is connected to the arms *b*, the said bottom E may be moved freely up and down within the receptacle formed by the frame A, from power located outside of the said frame. 2nd. The main frame A, constructed substantially like an ordinary hay-press and provided with a suitable cover, in combination with the movable bottom E, located within the frame A, and provided with arms *b*, extending through vertical openings made in the frame, and having rollers *c*, substantially as and for the purpose specified. 3rd. The frame A, constructed substantially like an ordinary hay-press, and provided with a suitable cover, a movable bottom E, located within the frame A and having arms *b*, extending through vertical openings in the said frame, in combination with mechanism arranged to connect the motor power to the arms *b*, for the purpose of elevating the bottom E, and spring stops *o*, arranged to gauge the height of the said bottom, substantially as and for the purpose specified. 4th. The main frame A, constructed substantially like an ordinary hay-press and provided with a movable bottom E, operated as specified, a cover B fitting within the space formed by the frame A, and having arms *a* extending on top of the frame A, in combination with the movable bars C, arranged to fit between the hooks D and arms *a*, substantially as and for the purpose specified. 5th. The main frame A, constructed substantially like an ordinary hay-press and provided with a suitable cover, a movable bottom E, with arms *b*, extending through vertical openings made in the frame A, in combination with the ropes I, connected as described, to the four arms *b* on the bottom E, and after passing around friction-pulleys H, are attached to, and acted upon, by the drum L, on the shaft M, substantially as and for the purpose specified.

No. 19,125. Land Roller. (*Rouleau d'Agriculture.*)

Eugene Horton, Prairieville, Mich., U.S., 16th April, 1884; 5 years.

Claim.—1st. A stave roller, having the end recesses provided with a tire or tires, severed and connected by a tension connecting device located in the recess beneath the tire, substantially as set forth. 2nd. The combination, with a stave roller having the end recesses, of a severed tire, and the tension connecting device consisting of the eyes hinged-links provided with the threaded holes and the threaded tension rod provided with the wrench seat, substantially as set forth.

No. 10,126. Seed Planter. (*Semoir.*)

Asahel Smith, Chatham, Ont., 16th April, 1884; 5 years.

Claim.—1st. In a seed planter, the combination, with the drive wheel A, and the spring-held seed dropping slide G, of the flanged wheel J, the cam wheel L, having interior ratchet teeth O, and the springs and band P, Q, whereby the said seed dropping slide will be operated with certainty, and the cam wheel can be readily adjusted, as set forth. 2nd. In a seed planter, the cam wheel L provided on its inner periphery with ratchet-teeth and its inner face with serrated cams M, arranged as shown, for operating the dropper slide, and cams N, between said cams M, for jarring the dropper slide, substantially as set forth.

No. 19,127. Stone Crusher. (*Concasseur de Pierre.*)

Theodore A. Blake, New Haven, Ct., U. S., 19th April, 1884; 5 years.

Claim.—1st. The combination of a series of jaws (two or more) arranged and movable on guides parallel with the path of movement, the adjacent faces of said jaws inclined with relation to each other so as to produce convergent active surfaces, mechanism, substantially as described, to impart reciprocating movement to the said series of jaws, the jaw at one end of the series forming a resistance for the movement of the jaws from the direction of the other end of the series, the said guides serving to support such jaws throughout their movement without changing their inclination with relation to each other, substantially as specified. 2nd. The combination of a series of jaws (two or more) arranged and movable on guides parallel with the path of movement, the faces of said jaws inclined to each other to produce convergent mouths, the movement of one jaw in the series communicated to the next jaw in the series by the material introduced between them to be crushed, substantially as specified. 3rd. The combination of a series of jaws (two or more) arranged on guides and movable thereon, a stationary jaw at one end of the series, and mechanism, substantially as described, to impart reciprocating movement to the jaw at the other end of the series, substantially as described. 4th. The combination of a series of jaws arranged upon guides, a fixed jaw at one end of said series, a toggle point at the other, arranged to bear upon the point at that end, the adjacent faces of the several jaws of the series converging, whereby a crushing mouth is formed between each pair of jaws, said toggle serving to impart a crushing movement to said jaws and the guides serving to retain the jaws with their faces in the same inclination to each other throughout the movement, substantially as described.

No. 19,128. Bench Plane. (*Rabot.*)

David A. Bridges, Vineland, N.J., U.S., 19th April, 1884; 5 years.

Claim.—1st. In a bench plane having fixed bearings in its throat for the cap-iron, the combination, with an cap-iron having lateral notches to engage said fixed bearings, of the independently adjustable bit-plate E, adapted to be moved in the direction of its length without moving the cap-iron, substantially as specified. 2nd. The combination, with the oblique throat-iron and its adjusting screw G, of the bit-plate E, its clamp sections having lugs *n*, and the transverse connecting screw, substantially as specified. 3rd. The combination, with the oblique throat-iron and adjusting screw G seated therein, of the bit plate E having lugs *n*, engaging the said adjusting screw, and the stationary cap iron and its adjusting screw, substantially as and for the purposes specified. 4th. The combination with the recessed stocks, of the sunken base plate P, the handle N, and screws connecting said handle and base plate, substantially as specified. 5th. The combination, with the cap-iron and set screw L, of the top cap box, substantially as specified.

No. 19,129. Sulky Plough. (*Charrue à Siège*)

Jacob W. Eberhart, Mishawaka, Ind., U.S., 19th April, 1884; 5 years.

Claim.—1st. In a sulky plow, the combination, with a tongue having a staple secured thereto and the arched axle provided with apertures *e, c*, of the continuous brace passing through the staple and adapted to allow the staple to slide thereon, as and for the purposes herein described. 2nd. In combination with the cranks *D*, and the arched axle having a toothed segment secured thereto, of a lever having a short lever, a rod and a spring bolt thereon and also having at its lower end a curved section, substantially as described. 3rd. The combination with the swinging stirrup and the plow beam, of the slotted angular plates, the clip, the adjustable collars and a foot rest, all arranged to operate substantially as described. 4th. In combination with the cranks, the swinging stirrup, the toothed segment and the tongue, of the arched axle having arms and provided with bearings on their under side, as and for the purposes set forth.

No. 19,130. Water Conductor. (*Conduit d'Eau.*)

George Ringham, Toronto, Ont., 19th April, 1884; 5 years.

Claim.—A conductor pipe *A* corrugated, substantially as described, in combination with an expansive band *B* made to fit the outer circumference of the pipe *A* and having feet *c* formed in it, substantially as and for the purpose specified.

No. 19,131. Clinometer Compasses and Apparatus for Reading their Indications. (*Compas Clinomètres et Appareil pour Lire leurs Indications.*)

Ebenezer F. MacGeorge, St. James Park, Hawthorn, Victoria, 19th April, 1884; 5 years.

Claim.—1st. The clinometer compass or altazimuth instrument, in which there is a bulb, or one or both ends of the vial filled with a fluid capable of solidifying, as described, and containing a floating clinometer plummet and compass adapted to a central position by contact with the concave surface of the bulb, substantially as described. 2nd. A clinometer instrument, in which there is a bulb at one or both ends of the vial, the surface of said bulb being ruled with concentric lines indicating angular distances from the vertical axis of the instrument, and the interior of said bulb containing a floating air bubble in contact with the uppermost interior surface, and filled with a fluid capable of solidifying, as set forth, whereby position as to the vertical of the contact point of said indicator may be discovered by reading said concentric ruled lines, as set forth. 3rd. The vial *A*, having at one or both ends a bulb with a tubular extension therefrom reaching to the centre of said vial or thereabouts, whereby, when said bulb has been filled with the fluid and the vial has almost been filled with the same fluid, air cannot enter said bulb whatever may be the position of the vial and expansion of the contained fluid when solidifying cannot burst the bulb. 4th. A vial *A* constructed with a bulb *C* at one end and an inserted tubular extension *c* for the same reaching to the centre of the vial or thereabouts, and a stopper at the other end of said vial, and a bulb *B* with its tubular extension *B'* passing through said stopper to the centre of said vial or thereabouts, combined with a floating plummet and a floating compass, and a contained liquid capable of solidifying, substantially as and for the purpose set forth. 5th. The clinometer compass and altazimuth instrument comprised in a vial *A* with its bulb or bulbs, their contained plummet and compass, and the fluid contents capable of solidifying, substantially as set forth, combined with the reading instrument, comprised of a holder *c*, the microscopes *m* and *m'* having fixed relations to each other, a levelling stand and graduated limbs, whereby positions of the parts may be read, substantially as set forth. 6th. The clinometer compass and altazimuth instrument composed of a vial *A* with its bulb or bulbs, the contained plummet and compass and the fluid capable of solidifying, substantially as set forth, combined with an inclosing tube *p* and the core extractor *n*, whereby the core may be brought to the surface and restored to its natural position, substantially as set forth.

No. 19,132. Magneto-Generator of Electricity. (*Magneto-Générateur d'Electricité.*)

James P. Stabler, Sandy Spring, Md., U.S., 19th April, 1884; 5 years.

Claim.—1st. An armature for a magneto-generator, having its bobbin wire or wires divided into several sections electrically by means of loops connected with independent communicators or contacts, substantially as described, whereby the current may be varied either as to intensity or as to quantity or both, as set forth. 2nd. In a magneto-generator, an armature, the opposite poles whereof are provided with separate helices so wound as to give off coincidently currents in the same direction, one terminal of each helix being connected with the ground or return circuit, and the other terminal of each being connected with the line commutators. 3rd. An armature for a magneto generator, the bobbin wire whereof is at its middle of length connected with the ground or return circuit and at one or more points of its length, between its terminals and said ground connections, in electrical connection with corresponding independent commutator contacts, whereby the intensity of the coincident currents may be varied at will. 4th. An armature for a magneto generator, the bobbin wire whereof is in several strands *w*, *w'*, one corresponding terminal of each being permanently connected with the return conductor at *a*, and the other corresponding terminals being severally connected with the pin *i* and its insulated portion *u*, and the commutator rings *k, l*, and contacts *t, v* connected therewith, combined with the commutator springs *F, F'* and *p*, substantially as and for the purpose set forth. 5th. The combination of a magneto-generator provided with commutators, whereby to-and-fro currents or single direction currents may be taken off at will, a commutator key *Q* in the return circuit provided with an elastic extension *r*, for making contact with the post *S*, and the switch spring *v*, and contact line post *w*, and the single direction current contacts *y, z*, adjusted to make contact with the switch spring *v*, when depression of said key *Q* has broken its contact with post *w*.

No. 19,133. Metallic Shingle.(*Bardeau Métallique.*)

John Mott, New York, N.Y., U.S., 19th April, 1884; 5 years.

Claim.—1st. As an improved mode of fastening metallic shingles, the clasp *F* having an upwardly projecting lip *F₁*, as set forth. 2nd. A metallic shingle, of substantially the construction described, having a longitudinal slit in its point adapted to pass over the upwardly projecting lip of an attaching clasp, as set forth. 3rd. Metallic shingles, of substantially the construction described, having a longitudinal slit in the points, and the metal at the opposite corners cut away to form a slot *b* between every two shingles when laid, in combination with an attaching clasp having a body adapted to fit under the underlying shingles in the course next below, and an upwardly projecting lip adapted to pass through said slit and the slit in the point and be bent over onto the overlapping shingle, as and for the purpose set forth. Metallic shingles, each having a rib *A* provided with a longitudinal slit *a*, ribs *C, C* parallel to each other and to the rib *A*, and ribs *D, E*, whereby diamond-shaped shingles may be formed out of square pieces of sheet metal and are adapted, when combined, with attaching clasps to form a roofing, as set forth.

No. 19,134. Chimney Protector.(*Protecteur de Cheminée.*)

Ira A. Smith, East Berkshire, and Charles Allen, Enosburgh, Vt., U.S., 19th April, 1884; 5 years.

Claim.—1st. A metallic chimney protector and roof, consisting of the band *B* connected to the roof *E* by the molding *D*, the roof having hooded openings *F* provided with bottom inclined flanges *H* and projecting eaves *e*, substantially as described, and for the purpose set forth. 2nd. In a metallic chimney protector, the combination of a roof provided with hooded openings *F*, and flanges *H* with a molding *D* and band *B*, substantially as set forth.

No. 19,135. Leaf-Holder for Books.(*Presse-Feuille pour Livres.*)

Alva S. Flint, Crete, Neb., and Preston Osborn, Chicago, Ill., U.S., 19th April, 1884; 5 years.

Claim.—1st. A leaf-holder for books consisting of the coiled clamping base *A*, composed of a single piece of wire, one end terminating in the vertical post *a*, and the holding-arm *B*, having one end coiled around said post to form the shank *b*, whereby said arm is adapted to have a pivotal action, substantially as and for the purpose described. 2nd. In a leaf-holder, the combination, with the base *A* composed of coiled wire crossed at *a*, so as to impart the required clamping tension of the arm *B* provided with the loop *C*, and the second arm *D* secured in a longitudinal adjustable position with relation to the arm *B*, substantially as and for the purpose set forth.

No. 19,136. Leather Belting.(*Courroie sans fin.*)

Frederick E. Dixon, (Assignee of James Kiddy), Toronto, Ont., 19th April, 1884; 5 years.

Claim.—In combination with a lap-pointed belt, a series of staple-shaped tacks driven into the feather edge of the lap, substantially as and for the purpose specified.

No. 19,137. Device for Holding and Cutting Paper from Rolls. (*Appareil pour Tenir les Rouleaux de Papier et Couper le Papier à Même les Rouleaux.*)

John H. Earl, Chicago, Ill., U.S., 21st April, 1884; 5 years.

Claim.—1st. The combination, with a receptacle or case, as described, of the projecting lips *C, C₁*, provided with the central aperture *d₅*, of a roll of wrapping paper inserted loosely in said case, the loose end whereof is adapted to be drawn through between and severed by said lips into sheets of the required size, substantially as set forth. 2nd. In a roll wrapping-paper holder and cutting device, the combination, with the case *A*, of the lateral projecting lips *C, C₁*, and the encircling bands *a, a₁* provided with the clamping lugs *a₂*, substantially as and for the purpose set forth. 3rd. The combination, with a case or receptacle adapted to hold and rotate a roll of paper, of the lateral projecting lips *C, C₁* provided with the elongated aperture *d₅*, substantially as and for the purpose set forth. 4th. In a device for holding and cutting roll wrapping-paper, the combination, with the rolling-stick *E*, of the screws *d₁, d₂*, the rods *F, F* and the screw-eyes *d₃, d₄*, substantially as and for the purpose set forth.

No. 19,138. Optical Attachment for Sewing Machines. (*Appareil d'Optique pour Machines à Coudre.*)

Jeremiah Watts, Racine, Wis., U.S., 21st April, 1884; 5 years.

Claim.—1st. In a sewing-machine, the combination of the needle and needle-bar, the head, a clamp upon the head, an adjustable arm held by the clamp and a magnifying-glass and frame therefor, the said frame being jointed to the adjustable arm, whereby the position of the glass may be controlled upon the end of the arm with reference to the work under the needle, substantially as set forth. 2nd. In combination, with the head of a sewing-machine, a magnifying-glass held by an adjustable arm secured thereto and provided with a hinge, whereby it may be turned up against the said part when not in use, as set forth.

No. 19,139. Scalp for Carriage Axles.(*Boîte de Roue de Voiture.*)

Wolcott J. Parmelee, Buffalo, N.Y., U.S., 21st April, 1884; 5 years.

Claim.—As an axle-box in the rough state, a scalp moulded from wrought iron or steel of the shape shown and for the purpose of being forged into a finished axle-box, substantially as described.

No. 19,140. Tie for Bags, Bales and Bundles.

(*Corde pour Sacs, Ballots et Paquets.*)

Daniel E. Ladd, Baltimore, Md., U.S., 21st April, 1884; 5 years.

Claim.—A bag-fastener composed of a flexible tie provided with swell, and a holder having a tapering socket slotted lengthwise, as and for the purpose set forth.

No. 19,141. Organ. (*Orgue.*)

William E. Leighton, West Pembroke, Me., U. S., 21st April, 1884; 5 years.

Claim.—1st. In combination with the main wind chest, reeds and bellows or exhaust devices of the instrument, the upwardly projecting supplementary wind chest D provided with a longitudinal diaphragm or partition *c*, arranged to form passages to conduct the air from the main wind chest, after its passages through the reeds and on its way to the bellows, both upwardly and downwardly through the supplementary wind chest, for the purpose set forth. 2nd. The combination, with the main wind chest A and bellows B, of the upwardly projecting supplementary wind chest D, having a longitudinal partition *e*, up within it arranged to form upward and downward passages *f, g*, in communication below respectively with the main wind chest and bellows, and the resonant air chamber E, arranged in front of said supplementary wind chest, for the purpose set forth.

No. 19,142. Portable Ladder for Gathering Fruit. (*Echelle Portative pour Vergers.*)

Lather H. Titus, San Gabriel, Cal., U. S., 21st April, 1884; 5 years.

Claim.—1st. In a fruit-gatherer, the horizontally supported frame A and anchors C, the inclined ladder D supported upon hangers, flexible tube H extending along said ladder, and provided with hoops I, slits J and diaphragm K at suitable intervals, supplemental pivoted frame E adapted to tilt between the sides of the main frame, and having secured to it a flexible receiver F extending outward and downward from its foot, with a split portion forming tongues G, G, substantially as shown and described. 2nd. In a fruit-gatherer, in combination with a flexible tube H extending along the ladder and having hoops I, slits J and diaphragm K at intervals in its length, substantially as shown and described. 3rd. In combination with a fruit-gatherer consisting of the inclined ladder D, flexible tube H provided at intervals with the hoop I, slits J and diaphragm K, the flexible receiver F secured to a supplemental pivoted frame E and having tongues G, G, all substantially as shown and described.

No. 19,143. Pneumatic Railway Signal.

(*Signal Pneumatique de Chemin de Fer.*)

Edward M. Chase, Boston, Mass., U.S., 21st April, 1884; 5 years.

Claim.—1st. The eccentric ratchet in combination with the primary actuating lever, primary spring impelled bellows and the cast-off mechanism by which the bellows automatically releases the click of such ratchet. 2nd. In combination, the primary lever operated by the wheels of the locomotive, the primary spring impelled bellows operated by such lever, and the eccentric ratchet click and trip lever or arm on the tripping-stud, arranged substantially as described, whereby the click maintains the same relative position with respect to the ratchet and to the elevation of the bellows. 3rd. In combination with the primary bellows, the actuating lever and the springs adapted to transmit the power of the lever to exhaust the bellows, and the lever composed of two arms united by a long fulcrum-rod, as explained. 4th. Two pairs of bellows and their operating levers and springs, in combination with a flat disk arranged to be turned edgewise by one of said bellows and broadside by the other, substantially as and for the purposes stated. 5th. Alarm mechanism operated by a driving spring, and a lever for winding said spring adapted to be struck by a locomotive, in combination with a spring acting to depress said lever, a rod connected to said lever, a pallet attached to said rod, and a winding ratchet for said driving-spring engaged by said pallet, and operating substantially as set forth. 6th. The disk signal arranged to be turned either edgewise or sidewise, in combination with a primary lever and bellows, an air pipe, expansive valve and suitable intervening levers operating to turn said signal into the former position, and a second lever bellows pipe, expansive valve and suitable intervening levers for turning said disk into the latter position, substantially as set forth. 7th. In combination with the primary bellows B, the supplementary bellows and the signal W mounted upon a vertical rocking shaft and adjustable in an arc of ninety degrees of the arc thereof, with the expansion air cups or valves Y and J, the posts *m, n*, of such valves, their latches *p, f*, the two armed lever *z* secured to the rock shaft *b* and having the step *c* upon its upright arm *y*, the gravity lever or arm *s* secured to the rock-shaft *t* and carrying the stud *d*, which operates with the step *c* and the staff *u*, crank W and rod *q*, and pipes *h* and *k*, all substantially as described. 8th. The combination, with each expansion cup or valve, of the vertical post and the gravity latch pivoted to such post and operating during its ascent to lift the lever or latch with which it operates, substantially as explained. 9th. The toothed sector *k*, carrying the stud *Y* and with the two-armed lever *z*, the gravity latch *w* and the curved bow or arm *g*, with its stud operating with a match in the said shaft *S*, and the said latch *w* carrying the spur or tooth *y* operating with the arm *g* of said lever *z*, as explained. 10th. In combination, the rod *d* connected at its base with the lever *D* and pivoted at its upper end to the carrier of the pallet *z*, the pallet *z*, ratchet *c*, band *y*, gravity latch *w* and two-armed lever *z*, the upper end of the rod *d* operating to lift the tail *f* of the lever *z*, to release the arm *g* of such lever from the tooth *y* of the latch *w*, as explained. 11th. In combination, the rod *d* connected at its base with the lever *D*, and pivoted at the upper end to the carrier of the pallet *z*, the pallet *z*, ratchet *c*, barrel *y*, gravity-latch *w* and two armed lever *z*, the upper end of the rod *d* operating to lift the tail *f* of the lever *z*, to release the arm *g* of such lever from the tooth *y* of the latch *w*, as explained

11th. In combination, the rod *d* conducted at its base with the lever *D*, and pivoted at its upper end to the carrier, of the pallet *z*, ratchet *c* and barrel *y*, gravity-latch *w*, two-armed lever *z* with its stud *z* operating with the tooth *y* of the latch *w*, toothed sector *k* with its stud or detent *y* and operating by the detent *X* upon the pinion-shaft *S*, the horn or arm *g* with its stop-pin *h*, operating with a notch in the pinion-shaft *S*, the latch or lever *z* with its pawl *p* operating with the pinion-shaft *S*, and the arm or wiper *z* carried by the shaft *z* to operate the latch *t*, the whole constituting a mechanism whereby, should a train remain on the block and fail to arrest the alarm mechanism by lifting the rod *d*, the toothed sector will automatically effect such result and itself be returned to its normal position. 12th. In combination, the lever *D* and *d*, pawl *Z* and its carrier *c*, ratchet *c* and barrel *Y*, link *s*, pallet *g* and its carrier *V* pivoted to the shaft *U*, and ratchet *C*, whereby the same movement of the lever actuates simultaneously the ratchets *C* and *c*, as explained. 13th. The lever *D*, rod *d*, pawl *Z* and its carrier *c*, ratchet *c* and spring-impelled barrel *Y*, in combination with the gong *D*, reciprocating hammer *E* and mechanism for transmitting the vibrations of the barrel to the hammer, the ratchet *C* operated by the pallet *g*, link *S*, and the sector *T* operated to lift the signs by detents of the ratchet *C*, intercepting an arm from such sector, the sector being connected with the sign by the rope or chain *P*, *S*, and the whole operating as explained. 14th. In combination, the primary bellows, the expansion cup or valve *z*, the alarm mechanism put in motion by a current of air from said bellows actuating said valve, and the ratchet *C*, the sector *T*, arm *V* and valve *z*. 15th. In combination, the primary bellows, the air cup or valve *z*, the alarm mechanism put in motion by such valve, by means of a current of air from said bellows operating such valve, the ratchet *C*, sector *T*, connected with the hoist rope *P*, *S* and carrying the arm *V*, the expansion air cup or valve *z* operated also by the primary bellows and the two-armed latch or lever *z*, the arm *Z* of such latch having the step *Y* to operate with the arm *V*, and the arm or nose *a* of said latch operating with the latch *b* of the valve *z*. 16th. The combination, with the primary bellows, the alarm mechanism and the hoisting ratchet *C*, of the two air cups or valves *z*, *z*, operated simultaneously by said primary bellows by a common supply pipe, substantially as explained. 17th. The mechanism whereby the primary bellows E and the supplementary bellows A effect the changes in position of the signal W, consisting in the combination, with the two air expansion valves *z*, *z*, fed by such bellows and carrying the gravity latches *p, f*, of the gravity-latch *z* operated by the latch *p* and secured at its base to the rock-shaft *t*, and also carrying the stud or tooth *d*, the two armed lever *z*, the nose *a* of which operates with the latch *f*, and the base of which is secured to the rock-shaft *b* while its arm *Y* operates to uphold the latch *s*, the staff *u* erected upon and rocked by the shaft *t* and the crank *w*, and signal-shaft *X*, the crank *w* being secured to the shaft and connected with the staff by the pitman *V*, and the whole operating as described. 18th. In combination with the bellows E and springs G, the trunk H and wiper cam I, the truck supporting the springs and elevated by the cam I, as explained. 19th. In combination with the primary bellows E and springs G, G, the sectoral eccentric ratchet K, click T, truck H and wiper cam I, all as explained. 20th. The combination, with the eccentric ratchet K and bellows E, of the click T mounted loosely upon the pivot of the two-armed trip-lever U and carrying the stud *w*, the latch or trip-lever U with its trip *w* and the wiper stud V arranged and operated as described, whereby the arm U is permitted a certain amount of play before it acts upon the click, in order that the bellows may be permitted to properly contract and the click be released from the ratchet, regardless of the extent to which the ratchet is thrown by the action of a passing train. 21st. The combination, with the toothed sector *k* and its spur *Y*, the latches *w* and *z*, the latch or lever *p*, the two-armed pawl *p*, latch or lever *z* with its tooth *z*, and the arm *V* secured to the rock shaft *V*, the whole operating as explained. 22nd. The construction of the levers for operating the two pairs of bellows, each lever being composed of a primary arm opera ed upon directly by the wheels of the locomotive, a secondary arm connected with the mechanism that actuates the bellows, and an intervening fulcrum-rod of such length that the bearing or support of the lever, nearest the bellows, is sufficiently far removed from the track to be uninfluenced by the shocks and thrusts from passing trains. 23rd. In combination with the primary bellows, the usual signal W and the alarm mechanism, an expansion air valve operating to actuate the signal by a column of air from the bellows, a similar valve operated by the same current of air to release and lower the sign, and a swinging sign suspended above a highway crossing and adapted to rise and fall in horizontal planes of movement, substantially as described. 24th. The sign composed of their metal or other light material, pivoted to the lower ends of arms depending from sectoral pulleys, pivoted to the top of the staging or frame which supports such sign, these sectoral pulleys being connected with, and operated by ropes or chains, the opposite ends of which are connected with, and operated by a ratchet wheel advanced by the movement of the actuating lever. 25th. The bellows bottom F and truck H, connected with the rigid staging D by the links *J*, as and for purposes stated. 26th. The rod *d*, carrier *a* and pawl *Z*, in combination with a latch adapted to arrest the arm-impelling mechanism, such latch being operated to arrest such mechanism by the ascent of the rod. 27th. In combination with the barrel *Y*, its ratchet *b* and impelling spring *z*, the shaft *S* rotated by such barrel, the horn or staff *g* with its stop-pin operating with a notch in such shaft *S*, the fan *J* mounted upon the shaft *k* put in motion by the shaft *S*, and the horn or staff *g* mounted upon the rock shaft *V*, substantially as explained. 28th. In combination with the primary bellows E, eccentric ratchet K, click T, truck H and wiper-cam I, the curved plate I, 29th. In pneumatic railway signals, the combination, with the bellows operated by a lever actuated by passing wheels of a locomotive or cars, to put in motion a current of air through a tube, of a usual signal and suitable intervening mechanism operated by said current of air, an alarm mechanism and suitable intervening mechanism operated by the same current of air, and a sign suspended over a highway crossed by the railway track and adapted to be raised and lowered in horizontal planes of movement by the current of air which operates the signal and alarm. 30th. The combination, with the swinging sign *G*, of the ratchet *c* with its detents *g*, the lever or arm *V* and the hoisting rope connected with one end of such lever or

arm, said parts being constructed and arranged to operate, substantially as set forth. 31st. The combination, with the primary actuating lever, primary bellows operated by said lever, and the eccentric ratchet and its click adapted to retain the springs in their contracted state until their force is expended in exhausting the bellows, a usual signal mounted upon a rock-shaft and connected with the air-pipe by an expansion air-cup or valve and suitable intervening mechanism, whereby the current of air acting upon such expansion cup or valve actuates the signal through an arc of ninety degrees of a circle. 32nd. In combination with the primary lever, primary spring-impelled bellows and the eccentric ratchet and its click, adapted to retain the springs in their contracted state until their force is expended to exhaust the bellows, a visual signal mounted upon a rock-shaft and connected with the air-pipe by an expansion air-cup or valve and suitable intervening mechanism, and an alarm mechanism operated simultaneously with the changing of the signal and by the same current of air. 33rd. In a pneumatic railway signal, a pair of bellows adapted to be automatically operated by the wheels of a passing train, in combination with a valve also operated or controlled by said train and adapted to admit the air from said bellows into either of two pipes or passages or series of passages, according to the direction in which the train is moving, substantially as and for the purposes described. 34th. In a pneumatic railway signal, the combination of a valve adapted to admit air into either of two passages or sets of passages, the hooked rod F connected with said valve, the arm F₂, rock-shaft F₃ and primary lever I, rock-shaft C₁ carrying the cam H and connected with, and adapted to be oscillated by the lever D₁, rock-shaft D₂ and primary actuating lever D₃, a pair of bellows connected by an air passage with said valve and adapted to be operated by the oscillation of the rock-shaft C₁, and means of holding the primary lever I removed from the action of the wheels of the train until the bellows have ceased to contract, substantially as and for the purposes described. 35th. The combination of the valve H, spring pressed hooked rod F₁ connected with said valve, rock shaft C₁, cam H, arm F₂, rock-shaft F₃, primary lever I, spring-pressed arm G, arm G₁, cam G₂, toothed sector D, pawl J, lever D₁, rock-shaft D₂ and primary lever D₃, a pair of bellows connected by an air passage with the valve H and adapted to be operated by the oscillation of the shaft C₁, and to cause the disengagement of the pawl J as the bellows contract, all arranged and adapted to operate substantially as and for the purposes described. 36th. The combination of the valve h, ports or passages g₁ and g₂, cocks J₁ and J₂, and the bellows B connected by an air passage with said valve, substantially as and for the purposes described. 37th. The combination of the bars b, b₁ arranged alongside the track, the lever D₃ adapted to operate the bellows mechanism, and the lever I arranged to operate the valve mechanism, substantially as and for the purposes described. 38th. The combination of the primary actuating lever D₃, the bars b, b₁ adapted to engage with said lever, and the blocks m, m provided with recesses to receive the ends of said bars, substantially as and for the purposes described. 39th. The combination of the expansion cup or valve M, two or more pipes connected with, and adapted to convey air to said valve, each pipe being provided with a valve to prevent the return of the air, and an alarm or signal mechanism put in motion by a current of air actuating the valve M, substantially as and for the purposes described. 40th. The combination of the expansion cup or valve M, the chamber S connected by an air passage with said valve, two or more pipes communicating with, and adapted to convey air to said chamber, and each provided with a valve to prevent the return of the air, the cock v attached to the chamber S, and an alarm or signal mechanism put in motion by a current of air actuating the valve M, substantially as and for the purposes described. 41st. The combination of the gong K, spring actuated hammer L, spring-pressed arm S pivoted to said hammer, the pins g, g set in a hub, secured upon the shaft r, and a pin t to serve as a stop for the arm S, substantially as and for the purposes described. 42nd. The combination of the pivoted pawl carrier N, rod P₁, slotted fork Q, spring U₂, fork R and pin u, substantially as and for the purposes described. 43rd. The manner herein shown of pivoting the bars b, b₁ to the side of the rails, that is by fitting the ends of such bars loosely in the recessed blocks m. 44th. The rod P₁ connected with the pawl carrier N in manner substantially as described, whereby vertical play or slip between the two is permitted.

No. 19,144. Apparatus for the Extraction of Gold and the Concentration of Gold bearing Material, such as Pyrites, from Finely Divided Auriferous Material. (*Appareil pour l'Extraction de l'Or des Matières Aurifères en poudre et pour la Concentration des Matières Contenant de l'Or, tel que les Pyrites.*)

John Alves and John Logan, Dunedin, N. Z., 22nd April, 1884; 5 years.

Claim.—1st. The combination of the amalgamating box b, bearing or trunnion pin c, swinging bars d, arm f, rod h and crank i, substantially as described and for the purpose set forth. 2nd. The box or support A provided with perforated vertical amalgamating plates B, cover D and overflow openings F F, the cover plates D being placed on the machine, substantially as described and for the purpose set forth. 3rd. In an amalgamator, the box A, vertical perforated plates B, incline cover D and openings F F, in combination with perforated plates G, whereby the overflow from the amalgamators B. 4th. In an amalgamator, the combination of the box A, vertical perforated plates B, incline cover D, fillets H and perforated plates G, substantially as described and for the purposes set forth. 5th. In an amalgamator, the combination of the box A, vertical perforated plates B, incline cover D, and fillets H and K, substantially as described and for the purposes set forth. 6th. In an amalgamator, the box A provided with slots m adapted to receive the lower edge of the vertical perforated plates B, the cover D and overflow openings F, substantially as described. 7th. In an amalgamator, the framing a provided with an amalgamated box b, said box being provided with a series of vertical perforated amalgamating plates B covered by inclined plates D, each of a series of amalgamating plates being contained in a box A provided with overflow openings F, each

of said boxes being separated by intervening perforated plates G, the box b being pivotally mounted, whereby it may be given a rocking motion as set forth. 8th. The open end cylindrical amalgamator o and the travelling apron a₂, in combination with mercury grooves p adapted to receive said amalgamators, in a manner and for the purpose specified. 9th. The travelling apron a₂ and tank a₁, in combination with the bell crank e₁, e₁₁, roller d₁ d₁, and crank rod f, whereby the apron a₂ may be given a shaking, substantially as indicated. 10th. The open end cylindrical amalgamators o and the mercury troughs p, combined with mechanism whereby said amalgamators are caused to rotate in said troughs and become amalgamated inside and out. 11th. The amalgamator box b, primary amalgamator s, travelling fabric table a₂, cylindrical amalgamators o, water trough g₁ and shaken d₁ e₁₁ combined and arranged substantially as set forth. 12th. The use of amalgamating plates which amalgamate on both their surfaces, especially when they are placed vertically as in my amalgamator, see Fig. 2, where they are marked b, and when they are made into cylinders, see Fig. 6, where they are marked s and o. 13th. Combining and arranging such vertical plates so that the material to be treated by them shall pass through central openings in them (see c, Fig. 2 and 3) from between one pair to another pair, and finally be discharged through passages at either or both sides (see f in Fig. 2) that is with the feed in the centre, as shown, or at either side, as described but not shown. 14th. Combining and arranging a series of such vertical amalgamating plates with top plates d (inclining towards its longitudinal centre where it is perforated) curved bottom side passages f and lower plate g, as illustrated in Fig. 2 of my drawings. 15th. Combining and arranging a number of the contrivances set forth in claim 4, one under the other, so as to form one compartment in an amalgamator, and combining and arranging a number of such compartments side by side in one case, as shown in Fig. 7. 16th. Imparting to amalgamators the double motion of oscillation and rocking, as shown in Fig. 1, and especially to amalgamators, arranged and constructed in the manner herein set forth and described. 17th. Combining and arranging cylindrical amalgamating plates, so that they will revolve constantly or intermittently in mercury troughs, as shown in Fig. 6, where they are marked s and o. 18th. Giving a final shaking motion to an endless travelling fabric table when it is under the water in the separator, and the special contrivances marked d, c and e₁, for giving motion, as and for the purpose herein described, and as shown in Fig. 5 and 6 of my drawings. 19th. The combination and arrangement of the whole of the contrivances shown in Fig. 5 and 6, in the manner and for the purposes herein described and explained.

No. 19,145. Kitchen Cabinet.

(*Armoire de Cuisine.*)

Hiram Hanna, Columbus, Ohio, U. S., and Joseph H. Lorrimer, Hamilton, Ont., 22nd April, 1884; 5 years.

Claim.—In a kitchen cabinet, the combination, with the meal bin L having a removable cover, the latter being provided with the door N, and screen O situated below the door, of the detachable drawer secured to the underside of the cover below the screen, substantially as set forth.

No. 19,146. Dental Engine Hand Piece.

(*Outil à Main pour Engin Dentaire.*)

John H. Lincoln and John G. Rawlings, Chattanooga, Tenn., U. S., 22nd April, 1884; 5 years.

Claim.—1st. In a hand-piece attachment for dental engines or other purposes, the combination, with the operating driving shaft and its pinion, of the elbows coupled together to revolve one upon the other, a second shaft having pinions, and the drill shaft having a pinion adapted for joint operation, substantially as and for the purposes set forth. 2nd. The combination, with the revolving elbow having the drill, of the shaft case or tube provided with a set, or holding screw, substantially as described as and for the purposes set forth.

No. 19,147. Cylinder-Cock Invisible Steam Escapes. (*Souape à Cylindre d'Échappement Invisible de Vapeur.*)

Thomas N. Porter and John Henigan, Jackson, Mich., U. S., 22nd April, 1884; 5 years.

Claim.—1st. In a cylinder-cock escape, the water chamber connected by pipes controlled by valves with the cylinders, and having a steam-discharge through the smoke stack and an independent water discharge, all arranged and operating, substantially as and for the purposes specified. 2nd. The invisible cylinder-cock escape, substantially as described and shown, composed of the cylinder-plug connected by an intervening pipe, check-valves arranged in said pipe, the water-chamber connected by pipe C D with the cylinder-pipes, the valve arranged in said pipe and provided with stem c having the crank d, handle-rod extended within reach of the operator, and the water-steam-discharge G extending into the smoke-box and the discharge F, all arranged and operating, substantially as described and for the purposes specified. 3rd. In a cylinder-cock escape, the combination of the cylinders provided with independent water and steam discharge pipes, and a pipe or pipes connecting the said chamber and the cylinders, substantially as set forth.

No. 19,148. Fire Box Lining for Cooking Stoves. (*Doublures de Boîte à Feu pour Poêles de Cuisine.*)

Edgar E. Bunker and Monroe M. Cady, Dubuque, Iowa, U. S., 22nd April, 1884; 5 years.

Claim.—1st. A fire-box lining having its body provided at its centre with a series of transversely arranged V-shaped corrugations, adapted to receive a correspondingly-shaped ridge on the arm of each of its adjustable end wings, substantially as and for the purpose set forth. 2nd. The combination, with a fire-box lining, having its body provided at its centre with a series of V-shaped corrugations, of the hooks D,

D, substantially as described and shewn, for holding the adjustable side or end wings of such lining in proper position upon its body, as set forth. 3rd. In a fire-box lining, the body A provided with the V-shaped corrugations *a*, hooks D, D and opening *d*, *d*, substantially as described and shewn. 4th. In a fire-box lining, the body A provided with the depression B, its extensions B¹, B¹ and the V-shaped ridges *b*, substantially as described. 5th. In a fire-box lining, the adjustable and removable wings E, having the arms, substantially as described and shewn. 6th. In a fire-box lining, the wing C having the arms C¹ provided with the V-shaped corrugations *c*, substantially as described and shewn. 7th. The fire-box lining described, consisting of the body A, having depression B and B¹ and hooks D, D, the adjustable and removable end wings E, and the adjustable and removable wing C, all constructed, arranged and secured together, substantially as described and shewn and for the purpose set forth.

No. 19,149. Dredge. (*Dragueur.*)

Robert R. Osgood, Albany, N. Y., U. S., 22nd April, 1884; 5 years.
Claim.—1st. In a dredging machine, the combination, with a foundation provided with an interior track, of a turn-table arranged over and around the track and having secured thereto a diagonally arranged strut carrying a wheel, arranged to travel upon said track of the foundation, for the purpose herein set forth. 2nd. In a dredging machine, the combination, with a foundation provided with an interior track, of a turn table arranged over and around the track, and having secured thereto a diagonally-arranged strut with a wheel, suitably braced and arranged to travel upon the said track of the foundation, for the purposes herein set forth. 3rd. In a dredging machine, the combination of a turn-table provided at the forward end with springs or buffers F, and the swinging chains with eyebolts, the latter passed through the elastic buffers of the turn-table, substantially as shown and described. 4th. In combination with the swinging crane carrying the sheave, the slip-sheave mounted above said crane, substantially as and for the purpose set forth. 5th. In combination with the backing chain, a sheave mounted in a swinging crane L with axial bearings above and below, adapted to move with said chain and to direct it without cramping, substantially as and for the purpose set forth.

No. 19,150. Broom-Holder. (*Porte-Balai.*)

Alexander Frazier and Daniel J. Coburn, Maywood, Ill., U. S., 22nd April, 1884; 5 years.
Claim.—The box A, constructed with a clamp-holding chamber having its sides *d*, *d* arranged to incline toward each other, both in a forward and upward direction, in combination with the jaw-like rubber clamp B, arranged to fit within said chamber and to project in front thereof, and constructed with a receiving space *f* and flaring mouth *e*, substantially as and for the purposes herein set forth.

No. 19,151. Pen-Staff and Hand Support.

(*Porte-Plume et Appui-Main.*)
 Warren A. Lamson, Lynn, Mass., U. S., 22nd April, 1884; 5 years.
Claim.—1st. For a pen-staff and hand support, the body A provided on one end with a finger loop B and reverse staff loop C, substantially as described and for the purposes set forth. 2nd. In a pen-staff and hand support, the body A provided on one end with a finger loop B and staff loop C, as specified, the opposite end of said body being provided with a curved end D, substantially as set forth. 3rd. In a pen-staff and hand support, the body A provided on one end with staff loop C, finger loop B, said staff loop C having its point bent forward as set forth, whereby the pen-holder or staff is held in close relation to the finger, substantially as set forth. 4th. In a pen-staff and hand support, the combination of the body A, bent end D, finger loop B and staff loop C, the point of said staff loop being bent slightly forward, substantially as described and for the purposes set forth.

No. 19,152. Railway Frog Chair.

(*Coussinet de Rail de Chemin de Fer.*)
 John W. Close, Buffalo, N. Y., U. S., 22nd April, 1884; 5 years.
Claim.—1st. In a railway frog chair A constructed with, or having ribs or braces *c*, *c* for strengthening the base, and flanges *g*, *g*, which inclose the wing rails E₂, E₂, to prevent them spreading and forming a stronger support for the point rail E, and provided with the recesses A, A for securing the end of the braces *b*, *b* therein, substantially as described. 2nd. In a frog chair A constructed with, or having the arrangements of the several holes *f*, *f*, *f*, *f*, *f*, *f*, *f*, *f*, for interlocking the point rail E therein, and securing the frog-rails thereto, substantially as described. 3rd. In a frog chair A constructed with, or having lugs *i*, *i* forming dovetailed or other shaped recesses, which secure the point rail E both vertically and longitudinally, substantially as described. 4th. In a frog chair A constructed with, or having a recess A₃, or other shaped recess elevated above the flanges *v*, *v* of the wing rails E₂, E₂, for securing the point rail E therein, and with the lugs or flanges *i*, *i*, overlapping the inner flanges *v*, *v* of the wing rails, substantially as described. 5th. In a frog chair A integral with the point rail provided with lugs *i*, *i*, overlapping the inner flanges *v*, *v* of the wing-rails E₂, E₂, substantially as described. 6th. In a frog chair A constructed with, or having a bifurcated wedge plate *d* slotted at its broad end, for the reception of the point rail E, and provided with recess *y*, *y*, for the reception of the bases or flanges *v*, *v* of the point rail, and the holes *f*, *f*, *f*, *f*, *f*, *f*, *f*, *f*, for the fastening bolts *f*, *f*, substantially as described. 7th. The combination and arrangements of the chair A and A¹ with overlapping ribbed flanges *c*, recesses *h*, *h*, the forked plate *d* connecting the chairs A and A¹ longitudinally, and of the lugs *l*, *l*, substantially as described. 8th. The combination and arrangement of the chair A² and A² of the guard rails E₃, E₃, with the main rails E₁, E₁, of the braces *b*, *b* and the bolt holes, substantially as described. 9th. The combination and arrangements, with the chair A, of the forked plate *d* having the T-shaped projection E and of the point and wing rails, substantially as described. 10th. The combination and arrangement, with the chair A, of the forked plate *d* constructed with, or having the crooked shape projection *j* and the lugs *b*, *b*, substantially as described. 11th.

The combination and arrangement of the chair A with the point-rail E, clamp chair A₃, connecting rod P, guide rod P¹, spring S and of the loose wing-rail E₂, substantially as described. 12th. The combination and arrangement of the chair A with the short point-rail E, diverging rails E¹, E¹, lugged clamps *d*, *d*, and of the rectangular notches *l*, *l* in the bases of the point and wing rails, substantially as described. 13th. The combination and arrangement, with the point-rail E having the dovetailed-shaped projection *j* with the chair A and the wing-rails E₂, E₂, substantially as described. 14th. The combination and arrangement, with the chair A, of the point-rail E having the crooked-shaped projection *j*, the flanges *i*, *i*, overlapping the flanges *v*, *v* of the wing-rails E₂, E₂, substantially as described. 15th. The combination and arrangement, with the chair A, of the point-rail E having the hook-shaped projection *j*, of the lugged clamp *d*, *d*, wing-rails E₂ and of the diverging-rails E¹, E¹, with the dovetail-shaped projection *j*, substantially as described.

No. 19,153. Cross-Cut Saw. (*Scie de Travers.*)

William C. Medill, Huston, Ont., U. S., 22nd April, 1884; 5 years.
Claim.—1st. A cross-cut saw having the cutting teeth B, B¹, arranged in groups of two pairs of teeth in each, the two teeth of each pair being connected by the bridge *a*, the outside teeth of all such groups being bevelled to the same side of the saw, and the inner teeth to the opposite, and the clearers C, substantially as herein shown and described.

No. 19,154. Gas Burner. (*Bec à Gaz.*)

John A. Wilson, Baltimore, Ind., U. S., 22nd April, 1884; 5 years.
Claim.—The combination, in a gas burner, of an upper or main section, and a lower section contained within the main section, each of said sections carrying a lava tip having unequal gas discharge openings, substantially as and for the purposes specified.

No. 19,155. Manufacture of Undergarments.
 (*Fabrication de vêtements de dessous.*)

Patrick Baker, Toronto, Ont., 22nd April, 1884; 5 years.
Claim.—As a new article of manufacture, a waist-coat A, or other garment made from a composition of paper pulp and jute, or other fibrous material, as specified, and having its edges B bound, and the buttons C secured substantially in the manner specified.

No. 19,156. Artificial Rubber.
 (*Caoutchouc Artificiel.*)

Parker R. Bradley, Montreal Que., 22nd April, 1884; 5 years.
Claim.—A composition of matter to be used as artificial rubber, composed of hot melted sulphur, and the mucilaginous substance resulting from the evaporation of the volatile portion of linseed oil or other vegetable oil, and washed after cooling with gasoline (applied either with or without heat), in the manner and for the purpose specified.

No. 19,157. Thrashing Machine Tooth.
 (*Dent de Machine à Battre.*)

Malaohi L. Horner, Auburn, N.J., U.S., 22nd April, 1884; 5 years.
Claim.—1st. The combination, with a screw-threaded collar or thimble having a central opening with a flaring mouth, of a tooth having a correspondingly shaped shank, and means for securing the two together, as set forth. 2nd. The combination of the support having a screw-thread opening, an externally screw-threaded collar or thimble, having a circular central opening with a flaring mouth, and the tooth having a correspondingly shaped shank, with means for securing it in the thimble, as set forth.

No. 19,158. Apparatus for Thawing Giant Powder and Nitro-Glycerine.
 (*Appareil pour Dégeler la Poudre Fulminante et la Nitro-Glycerine.*)

Gordon Murray and Mahlon A. Gibbs, Negannee, Mich., U. S., 22nd April, 1884; 5 years.
Claim.—1st. The combination, with a hot water receptacle, of a series of cartridge-holders suspended therein, and a cover for fitting over the tops of said holders, substantially as and for the purposes herein described and shewn. 2nd. The combination of the water receptacle having slots *e*, *e* in its upper or top edge, and a removable vessel provided with cartridge-holders, and a cover for said receptacle, substantially as and for the purposes herein shown and described. 3rd. The combination of the vessel A, interior vessel B, cartridge-holders D and a cover for the same, substantially as and for the purposes herein shown and described. 4th. The combination of receptacle A, lamp E, vessel B arranged inside of said receptacle, removable vessel C provided with cartridge-holders or tubes D, and the cover C, as set forth. 5th. The combination, with a hot water receptacle or vessel B, and a series of cartridge-holders D suspended therein, of a cover provided with a series of vent holes, substantially as set forth. 6th. The combination of the receptacle A having a series of air inlets, vessel B arranged therein to leave a surrounding air space between it and said receptacle, vessel C provided with a series of cartridge-holders or tubes D, cover E and a lamp removably secured in said receptacle and provided with a wooden bottom, substantially as set forth.

No. 19,159. Mode of and Means for Electrically Locating and following Veins of Metal in the Earth. (*Mode et Moyens de Déterminer la Position des Veines de Métaux et les Suivre dans la Terre au Moyen de l'Electricité.*)

Isaiah C. Soule, (Assignee of Jerome Prince), Milford, Mass., U. S., 22nd April, 1884; 5 years.

Claim.—1st. In a device for testing, locating or following metallic veins, the combination of metallic circuit terminals adapted to be forced into the earth at different points, and an insulating bridge-block rigidly holding the terminals apart and in fixed relation to each other, with an electric circuit, a battery and an alarm in the circuit, substantially as described. 2nd. In a device for testing, locating or following metallic veins, the combination of metallic posts adapted to be forced into the earth at different points, and an insulating bridge-block through which the posts pass and are thereby held separated and in fixed relation to each other, with an electric circuit connected with the posts, a key, a battery and an alarm in the circuit, substantially as described.

No. 19,169. Telephone. (*Téléphone.*)

Charles Egan, Zanesville, and William E. Cox, Dresden, Ohio, U. S. 22nd April, 1884; 5 years.

Claim.—In a relay-telephone, the combination of the mouth-pieces *e, f* provided with the diaphragms B and F, the diaphragm B having an electrical contact point *l*, spring *n* with one end provided with an electrical contact point *m*, and its other end connected to the screw *o*, permanent magnet C arranged near to the diaphragm B, and having the bobbin of insulated fine wire *i*, vulcanite collars *j, j'*, and disks *k, k'*, magnet G disposed near to the diaphragm F, the battery I, the wires connecting the screw *o* of the spring *n* with magnet G, the magnet G with the battery, and the diaphragm B with the battery and the line and ground wires, substantially as set forth.

No. 19,161. Compound for the purpose of Dissolving or Removing Paints, Oils and Varnishes from Wood, Iron, Glass and other Substances or Fabrics. (*Composition pour Dissoudre ou Enlever les Couleurs, Huiles et Varnis du Bois, Fer, Verre et d'autres Substances ou Produits Fabriqués.*)

James A. Henry, Platteville, Wis., U. S., 23rd April, 1884; 5 years.

Claim.—The combination of caustic soda with water, molasses or other analogous ingredient, and starch, substantially as and for the purposes set forth.

No. 19,162. Refrigerator. (*Réfrigérateurur.*)

George Carlile, Hamilton, Ont., 23rd April, 1884; 5 years.

Claim.—1st. In a refrigerator, the partition at forming an air flue *e* between the ice chamber and the meat chamber *b*, the said partition constructed with an opening or openings *d* covered with a corresponding perforated cut-off device, which automatically closes the openings in the partition, when the front door is opened to cut off warm air from the ice chamber, and opens when the door is closed, substantially as specified. 2nd. In a refrigerator, a warm air cut-off device operated by the opening and closing of the front door, substantially as specified. 3rd. In a refrigerator, the combination of the partition *a*, openings *d*, the cut-off pivoted plate *e* provided with openings *n, n*, and the latter actuated by the front door *o* on its opening and closing, substantially as specified.

No. 19,163. Manufacture of Linseed Oil.

(*Fabrication de l'Huile de Lin.*)

Henry A. Davidson, Buffalo, N. Y., U. S., 23rd April, 1884; 5 years.

Claim.—1st. In an oil press for pressing out linseed oil, the combination therewith of a casing *d* provided with a door *e* and a suitable heating device or coils *b*, arranged within the casing *d* outside of the press, and provided with a stop-cock *f* for regulating the amount of steam, admitted so that the required temperature may be maintained within said casing while the press is in operation, as described. 2nd. The herein described process of manufacturing linseed oil, consisting in pressing it out from the ground seed under a temperature of from 110 to 140° Fahrenheit, by means substantially as specified.

No. 19,164. Colouring and Hardening Clay.

(*Coloration et Durcissement de l'Argile.*)

Jacob Ambuhl, Bridgeport, Ct., U. S., 23rd April, 1884; 5 years.

Claim.—The process of coloring and hardening articles manufactured of clay, by the admixture therewith, previous to molding, of artificial neutral precipitates of metal held in solution, substantially as set forth.

No. 19,165 Seal Lock. (*Serrure Scellée.*)

Andrew B. Barnard, St. Joseph, Mo., U. S., 23rd April, 1884; 5 years.

Claim.—1st. The barrel B having the slotted shoulder *b*, the face-plate D having the loop *d*, and the bolt C having the feather, and the projection Ci, all combined and operating substantially as specified. 2nd. In a car-seal lock, the combination of a bolt C entering the door from the outside, and having an outstanding eye Ci and an outstanding loop *d* lying vertically parallel to said eye, or loop, or one of them, being provided with shoulders *f* upon their outer edge, whereby to support a tag-seal horizontally and parallel to the car side, substantially as and for the purpose specified.

No. 19,166. Metal Lined Harness.

(*Harnais Doublé en Métal.*)

Dexter Curtis, Madison, Wis., U. S., 23rd April, 1884; 5 years.

Claim.—1st. The herein described improvement in metal-lined harness consisting of a metal plate provided with a succession of projecting prongs or lugs along its edges, and adapted to be pressed into the leather backing so as to be flush therewith, and so as to pro-

ject the prongs through the leather and out at the opposite side, in order that the prongs may be turned down against the leather, and thus form a positive connection between the leather and the metal, so as to maintain a smooth joint along the edges of the latter, substantially as described. 2nd. The herein described leather metal lined collar pad, consisting of a curved body of leather or like flexible material, and a narrow metal bearing plate applied to the underside of the top or arch, and having the succession of projecting prongs or lugs along its sides, for positively connecting it to the leather, substantially as described.

No. 19,167. Loom for Weaving Double Pile Fabrics. (*Métier pour Tisser les Etoffes à Double Poil.*)

Charles Coupland, Seymour, Ct., U. S., 23rd April, 1884; 5 years.

Claim.—1st. The combination, with the top rail of the reed of a loom, of a skeleton race having pivotal connection with said top rail, and bolts or set screws *r* for retaining said skeleton in fixed position, during the normal use and operation of the loom, all substantially as and for the purpose herein set forth. 2nd. The combination with the bar C, the top rail of the reed of a loom, of a longitudinal adjustable bar *C*, and a skeleton race pivotally attached to the said bar, all substantially as and for the purpose herein set forth. 3rd. The combination with the top rail of the reed of a loom, of a skeleton race formed in sections, each composed of a plate G, and a number of prongs or fingers E, attached to the said plate, a longitudinally adjustable intermediate bar C, and hinges or pivots connecting the aforesaid sections to the said bar, all substantially as and for the purpose herein set forth. 4th. The combination with the top rail of the reed of a loom, of a skeleton race formed in sections, each composed of a vertically slotted plate G, and prongs or fingers E attached to said plate G, a bar C, longitudinally adjustable with reference to the top rail hinges or pivots connecting the said sections to the said bar, and bolts or set screws arranged to pass through the vertical slots of the plates of the sections and hold the latter in due relation with the bar C, all substantially as and for the purpose herein set forth. 5th. The combination with the top rail of the reed of a loom, of a bar C formed with longitudinal slots, bolts or set screws *at*, constructed and arranged to pass through said slots and retain the said bar in due relation with the top rail, a skeleton race pivoted to the bar C, and bolts or set screws for fixing said skeleton race in firm relation with the bar, all substantially as and for the purpose herein set forth. 6th. The combination with the top rail of the reed of a loom, of the skeleton race formed of sections *B*, each composed of a vertically slotted plate G, and prongs or fingers *B*, attached to said plate G, the bar C having the longitudinal slots *B*, the bolts or set screws *at*, for retaining the bar C in due relation with the top-rail hinges or pivots *m*, for connecting the plates G in due relation with the bar, all substantially as and for the purpose herein set forth. 7th. The combination with the reed and lay of a loom, and upper and lower shuttle boxes at each end of the lay, of a fixed upper skeleton race-way composed of vertical prongs having coincident notches arranged in a horizontal series, an upper shuttle having a part or portion corresponding in shape to the said coincident notches, a lower raceway and a lower shuttle, whereby provision is made for simultaneously weaving duplicate fabrics without rubbing contact of the upper shuttle with the warp, substantially as herein set forth. 8th. The combination with the reed and lay of a loom, of its top rail B, having an internal longitudinal chamber *a*, and in its underside a longitudinal groove *b*, a bar F carrying a skeleton race with way, and adjusting screws *c* for vertically adjusting said bar with reference to the top rail, all substantially as and for the purpose herein set forth. 4th. The combination with the top rail of the reed of a loom, of the skeleton race composed of vertical fingers or prongs G, having the notches *r* and slits *r'*, and a shuttle constructed with a spline *t* and rib *s*, whereby the shuttle is supported as and fight without contact with the adjacent warp, substantially as and for the purpose herein set forth. 10th. The combination with the reed and lay of a loom, of the top rail B, having the top rail chamber *a* and longitudinal opening *a*, and constructed with a groove *b* in its underside, a bar F, composed of the plate *g* and re-blocks *h*, and screws *i*, the fingers or prongs G arranged to receive and suspend a shuttle at the lower ends during its flight, and fixed upper skeleton raceway composed of vertical prongs constructed with notches *r*, openings *r'* and elongated bulb-shaped spurs *u*, and upper shuttle constructed with the rib *s* and spline *t*, a lower raceway, a lower shuttle, and upper and lower shuttle-boxes, the whole arranged for joint use and operation, substantially as and for the purpose herein set forth.

No. 19,168. Horse Collar Pad. (*Collier de Cheval.*)

William J. Cochran, Denison, Iowa, U. S., 23rd April, 1884; 5 years.

Claim.—A horse collar pad formed of a continuous padding *d*, oval in form, and having the middle perforated back *a*, substantially as described.

No. 19,169. Substitute for Sponges for Medical and other purposes. (*Substitut pour Eponges pour des fins Médicales et autres.*)

Silas M. Burroughs and Henry S. Wellcome, London, (assignee of Joseph S. Gamgee, Birmingham, Eng., 23rd April, 1884; 5 years.

Claim.—The improved substitute for sponges, especially applicable for medical purposes but adapted also for ordinary use, said substitute being formed of two or more concentric layers of coarse or elastic fibre and cotton wool encased in a gauze, or other openwork bag or covering, with or without an enclosed capsule, salt, powder, or other medical or antiseptic substance, substantially as described.

No. 19,170. Underground Conductor.

(*Conduit Souterrain.*)

Rudolph M. Hunter, Philadelphia, Pa., U. S., 23rd April, 1884; 5 years.

Claim.—1st. An underground conduit made air-tight, in combination with electric wires, an air compressor at one end of said conduit and adapted to constantly force air or gas into said conduit under excessive pressure, and an escape or pressure-valve adapted to remain closed until the desired pressure of air is obtained, and attached to said conduit at its other end, to cause a constant circulation of air or gas under high pressure through said conduit, substantially as specified. 2nd. An underground conduit made air-tight, in combination with electric wires enclosed therein, escape or relief valves adapted to remain closed unless the pressure in the main or conduit increases above a given point, arranged upon said conduit at various places along the same, and means to force a constant current of air or gas under pressure into said main, and out through said relief valves, and thereby insure a perfect circulation of an under pressure, substantially as and for the purposes specified. 3rd. An underground conduit made air-tight, in combination with electric wires inclosed therein, escape or relief valves arranged upon said conduit at various places along the same, and means to force a constant current of air or gas under pressure into said main, and out through said relief valves, and thereby insure a perfect circulation of air pressure, and apparatus to contain an absorbent for the extraction of the moisture from said compressed air or gas, substantially as set forth. 4th. An underground conduit made air-tight, in combination with electric wires enclosed therein, escape or relief valves arranged upon said conduit at various places along the same, and means to force a constant current of air or gas under pressure into said main, and out through said relief valves, and thereby insure a perfect circulation of air under pressure, stations in which said electric wires may be exposed for testing or adding new circuits, the said relief valve being located within said stations, substantially as and for the purpose specified. 5th. The combination of conduit A with compressor K, absorbent apparatus M, pipe N at one end, and relief valve O at the other end, substantially as and for the purpose specified. 6th. An underground conduit made air-tight, in combination with means to force air or gas into said conduit under pressure, one or more safety valves to allow escape of any air or gas under excessive pressure, and thereby tend to keep the pressure in the conduit uniform and prevent influx of air from the atmosphere, and one or more pressure gauges on said conduit and at intervals along the same, whereby the normal pressure and any leak may be readily ascertained, substantially as and for the purpose specified. 7th. The combination of con- duct sections A, having their ends extended into the stations and hermetically sealed, connecting pipes A' of small diameter, connect- ing the interior of the adjacent sections A and stations B, substan- tially as and for the purpose specified. 8th. The combination of conduit sections A, wires F, basins D, cement G and stations B, sub- stantially as and for the purpose specified. 9th. The combination of conduit sections, sections A, detachable absorbent receptacles H, having perforated parts H¹, H², and absorbent material J, substan- tially as and for the purpose specified.

No. 19,171. Combination Lock.

(*Serrure à Combinaison.*)

Charles Trexoning, Lead City, Dakota, U. S., 23rd April, 1884; 5 years.

Claim.—1st. The combination, with the sliding bolt of a lock, of one or more levers or latches D, a spring engaging the same to retain it at either end of its arc of motion, and a wire or other means of connect- ing said latch with said bolt, substantially as specified, whereby the latch may slide the bolt. 2nd. The combination, with a lock bolt, of a lever F pivoted thereto and to the frame, a blade *f* on said lever, means exterior to the frame for rotating said disks, as shown and de- scribed. 3rd. A notched disk inside of a lock case journaled on a spindle, said spindle extending through the case, another dial sur- rounding the first dial, a dial secured upon said spindle outside the case, a hollow spindle attached thereto surrounding the first spindle, means for connecting the two disks with the two spindles respectively, in combination with a sliding bolt, a lever pivoted thereto, and a blade on said lever adapted to engage the notches of said disks simultane- ously, as shown and described. 4th. A dial, a spindle attached there- to, and a toothed wheel secured on the spindle, in combination with a notched disk journaled on said spindle, and a spring pawl on the disk adapted to engage the teeth of the wheel, whereby the dial and disk may be fixed in any desired relation to each other, as described. 5th. A spindle, a toothed wheel fixed thereon, disk journaled on the same, and a spring pawl on the disk adapted to engage said toothed wheel, in combination with an arm pivoted in the frame to engage said pawl, as shown and described. 6th. The disk G, the staple R, as shown and described. 7th. The disk G, the pawl K thereon, and the arm P journaled to the frame to engage said pawl, in combi- nation with a handle Q attached to said arm, a stud in said handle, and the lock plate provided with notches to receive said stud, as shown and described.

No. 19,172. Grain Binding Hrvester.

(*Moissonneuse-Liense.*)

Maurice E. Blood, Sycamore, Ill., U. S., 23rd April, 1884; 5 years.

Claim.—1st. A separating-arm carrying, at its pivoted upper end, a compressor-finger, in combination with a binding arm having a move- ment corresponding with the separating-arm, and a further move- ment independent thereof, for compressing and compacting the mat- ter between the compressor-finger and the binding-arm, substan- tially as specified. 2nd. A separating-arm N and a stay or stop-rod carried by the pivoted upper end of the separating-arm, for compress-

ing the grain, as specified. 3rd. A rocking or vibrating arm pivoted at a point between its ends to have a portion on one side of its pivot, to act as a separating-arm to hold back inflowing grain, and the portion on the other side of its pivot to act as a compressor-finger on the bundle being bound, substantially as specified. 4th. A rocking or vibrating arm pivoted between the ends to have a portion on one side of its pivot form a separating-arm, and the portion on the other side form a compressor-finger, in combination with a binding-arm operat- ing to have the separating-arm on one side, and the compressor-finger on the other side, in advancing to carry the bundle to the binder, substantially as and for the purposes specified. 5th. A separating-arm N, compressor-finger O pivotally attached to the arm N, and a yielding support for the finger O, in combination with a binding-arm M, substantially as and for the purposes specified. 6th. A separat- ing-finger N, compressor-finger O, sliding rod *f* and spring *f*, in combi- nation with a binding-arm M, substantially as and for the purposes specified. 7th. A separating-arm N, stay or stop rod *e*, compressor-finger O pivotally attached to the arm N, and having a heel or exten- sion O' against which a pressure-spring acts, in combination with a binding-arm M, substantially as and for the purposes specified. 8th. A separating-arm N, and a compressor-finger O, having a heel or exten- sion O' and pivotally attached to the arm N, in combination with a stop *e*, sliding rod *f* and spring *f*, for limiting the movement of the finger and allowing it to yield, to accommodate itself to bundles of different sizes, substantially as specified. 9th. A suspended and revolving packer provided with fingers or teeth to engage the grain, and adapted to be turned to stand at varying angles in relation to the grain, for changing the flow of the grain to the binder, substantially as and for the purposes specified. 10th. A packer U formed of a rim portion *u*, *u*, and arms or spokes *u*¹, with teeth or projections *r*, and having a rotary movement to cause the teeth to engage the grain and advance it toward the binding devices, substantially as and for the purposes specified. 11th. The packer U having projecting fingers or teeth to engage the grain, in combination with a flexible shafting, for rotating the packer and allowing it to rise or fall and be turned to work in different angles in relation to the grain, substantially as and for the purposes specified. 12th. A revolving packer having fingers or teeth to engage the grain and provided with latches to clear the teeth, in combination with the frame T, hanger S, support or stand- ard R and a suspending-rod *u*¹, substantially as and for the purposes specified. 13th. A revolving packer having fingers or teeth *o* to engage the grain, and latches *p* to clear the fingers, in combination with the frame or support T, hanger S, standard or support R and supporting-rod *u*¹, and cam or cam-face *a*, on the frame T, substan- tially as and for the purposes specified. 14th. A revolving packer U having teeth or fingers *o* to engage the grain, and latches *p* to clear the teeth, in combination with cam or cam-face *a*, frame or support T, hanger S, standard or frame R, supporting-rod *u*¹ and finger or arm V, substantially as and for the purposes specified. 15th. A sus- pending and revolving packer, provided with fingers or teeth to en- gage the grain, in combination with an adjusting lever and connect- ing devices for changing the angle at which the packer stands in relation to the grain, substantially as and for the purposes specified.

No. 19,173. Spindle and Bearing for Rotary Cutter. (*Tourillon et Coussinet de Ton- deuse Rotatoire.*)

Charles Coupland, Seymour, Ct., U. S., 23rd April, 1884; 5 years.

Claim.—1st. A spindle G for carrying a rotary knife or cutter con- structed with the upwardly-tapering part *m*, the shoulder *r*, and the cylindrical part *n* and the conical extremity *e*, substantially as and for the purpose herein set forth. 2nd. The bearing E having a conical stop *a* and cylindrical bore *f*, and the cap F having the upwardly- tapering bore *j*, in combination with the spindle G constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n* and conical extremity *e*, all substantially as and for the purpose herein set forth. 3rd. The combination of the bearing E having the stop *a*, cylindrical bore *f* and flange *e*, the cap F having the upwardly taper- ing bore *j* and flange *e*, and the bolts or set screws A¹ with the spindle G constructed with the upwardly-tapering part *m*, shoulder *r*, cylind- rical part *n* and conical extremity *e*, all substantially *s* and for the purpose herein set forth. 4th. The combination of the bearing E the cylindrical bore *f*, lateral recess *g* and step *a*, and the cap F hav- ing the upwardly-tapering bore *j*, with the spindle G constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n* and conical end *e*, all substantially as and for the purpose herein set forth. 5th. The combination of the bearing E having the cylindrical bore *f*, lateral recess *g* and step *a*, the cap F having the upwardly-tapering bore *j* and flange *e*, and the bolts A¹, with the spindle G constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n* and conical extremity *e*, and a circular knife or cutter H attached to the upper end of said spindle, all substantially as and for the purpose herein set forth. 6th. The combination of the movable block *i* con- structed with the conical bearing *a*, screw *k*, bearing E constructed with the lateral recess *g*, flange *e* and cylindrical bore *f*, and the cap F constructed with the upwardly-tapering bore *j*, with the spindle G constructed with the upwardly-tapering part *m*, shoulder *r*, cylindri- cal part *n* and conical extremity *e*, all substantially as and for the purpose herein set forth. 7th. The combination of the bearing E constructed with the cylindrical bore *f*, chamber *u* and passage or opening *n*¹, and the cap F constructed with the upwardly-tapering bore *j*, with the spindle G constructed with the upwardly-tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth. 8th. The combination of the cap F constructed with the opening or orifice *n*¹ and upwardly-tapering bore *j*, and the bear- ing E constructed with the chamber *u*, passage *n*¹ and cylindrical bore *f*, with the spindle G constructed with the upwardly-tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth. 9th. The combination of the plug *e*¹ of porous permeable material, the bearing E constructed with the chamber *u*, passage *n*¹ and cylindrical bore *f*, and the cap F constructed with the upwardly- tapering bore *j*, with the spindle G constructed with the upwardly- tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth. 10th. The combination of the bearing E constructed with the chamber *u*, opening or passage *n*¹ and the coin- cident opening or passage *n*, the screw *n*¹ and cylindrical bore *f*, and

the cap F constructed with the upwardly-tapering bore *j*, with the spindle G constructed with the upwardly-tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth.

No. 19,174. Sash-Fastener. (*Arrêlé-Croisée.*)

Philip Mathes, Idlewood Station, Pa., U.S., 24th April, 1884; 5 years.

Claim.—In a sash-fastener having a curved bolt adapted to move from a vertical into a horizontal position in locking, the combination, with a centrally-arranged fixed guide, of a curved circularly-sliding bolt adapted to move through an arc of 90° (ninety degrees) or more around the fixed guide, and a keeper adapted to co-act with, and complete the central guides for the curved sliding bolt, substantially as and for the purpose specified.

No. 19,175. Car Wheel Chill.

(*Coquille de Coulage des Roues de Chars.*)

Jacob N. Barr, Milwaukee, Wis., U. S., 24th April, 1884; 5 years.

Claim.—1st. A one-part car wheel chill having the following elements: first, a peripheral receptacle in the flange face of the chill, adapted for the reception of non-conducting material. 2nd. An annular chamber connecting the said receptacle, and 3rd. A series of independent vent openings communicating with the annular chamber, substantially as described.

No. 19,176. Stop Valve. (*Soupapè d'Arrêt.*)

James H. Blessing, Albany, N.Y., U.S., 24th April, 1884; 5 years.

Claim.—1st. In a screw valve, the combination, with a valve-casing and an inclined valve operated by a vertically moving stem, of a removable valve seat arranged in an inclined position and supported by an annular tongue, which prevents a lateral movement of said seat, but permits a slight tilting movement thereof, by reason of an elastic packing between said valve-seat and its support, thereby enabling the valve-seat to accommodate itself to the face of the valve, substantially as specified. 2nd. In a screw-valve, the combination, with a valve-casing provided with a valve seat arranged in an inclined position, as herein described, and a removable sleeve provided with oppositely-arranged vertical guides, and having its lower end made to conform to the angle of the valve-seat, of a valve adapted to be guided in said removable sleeve, and having its face on an inclined plane that conforms to the angle of the valve seat, but inclined in respect to the plane of the valve-seat, substantially as herein specified. 3rd. In a screw-valve, the combination, with a valve-casing A containing a transverse partition *a* arranged in an inclined position, as herein described, a valve-seat B removably attached to the inclined partition *a*, and a removable sleeve C provided with guiding grooves *c* and adapted to secure the valve-seat in place, as herein set forth, of the valve D having its face set to conform to the angle of the valve-seat B, and having wings *d* that are adapted to engage in the guiding-grooves *bi*, as and for the purpose herein specified.

No. 19,177. Building Brick.

(*Brique de Construction.*)

John Lee, Russell, Ohio, U.S., 24th April, 1884; 5 years.

Claim.—1st. A hollow brick or building block, the upper edge of which is provided with an inwardly projecting perforated flange B, as and for the purposes set forth. 2nd. A hollow brick or building block, the upper portion of the cavity of which is rounded, and the walls of which terminate in a perforated projecting flange, as set forth. 3rd. A hollow brick or building block of the corners of walls, provided with a recess or rabbet, which permits it to impinge on the brick of the adjacent wall to bind same, as set forth.

No. 19178 Means of Obtaining and Applying Motive Power for Propelling Tricycles, Boats, &c. (*Moyens d'Obtenir la Force Motrice et de l'Appliquer à la Propulsion des Tricycles, Bateaux, &c.*)

Thomas Roberts (Assignee of John A. Stevens). Worcester, Eng., 24th April, 1884; 5 years.

Claim.—1st. The combination of the seat platform, container or vessel, and its supporting frame mounted to rock or swing to and fro on a horizontal axis or pivot, and provided with an extension or arm, with a connecting rod and crank for imparting rotary motion to the crank by the rocking or swinging of the rider's body or other weight upon, or in the seat platform container or vessel, substantially as herein described. 2nd. The method of imparting rotary motion to the driving crank of a vehicle, boat, or machine, by the rocking or swinging motion of the rider's body or other weight, substantially as herein described. 3rd. The combination of rocking or swinging seat, foot-board and frame, with the connecting rod and crank for imparting rotary motion to the crank by the whole weight and power of the body or load working within or upon the seat, substantially as herein described and as shown in figures 1 and 2 of the drawings. 4th. The combination of the seat spring and frame mounted to rock or swing to and fro on a horizontal axis or pivot, with the connecting rod and crank for imparting rotary motion to the crank, substantially as herein described, and as shown in figures 1 and 2 of the drawings.

No. 19,179. Coal Oil Stove. (*Poêle à Pétrole.*)

Alexander Cameron and Daniel Rourk, Ottawa, Ont., 24th April, 1884; 5 years.

Claim.—1st. In a coal oil stove, such as above described, feet or supports of an adjustable character, substantially as and for the purpose hereinbefore set forth. 2nd. In a coal oil stove, a series of movable uprights to be lowered or raised, substantially as and for the purpose hereinbefore set forth. 3rd. In a coal oil stove, a locking bar

to secure or fasten the uprights when in position, substantially as and for the purpose hereinbefore set forth. 4th. In a coal oil stove, an extinguisher made to rest on a fire shield, substantially as and for the purpose hereinbefore set forth. 5th. In a coal oil stove whose reservoir with adjustable feet, movable uprights, a locking bar, burners, shield and extinguishers, the whole substantially as and for the purposes hereinbefore set forth.

No. 19,180. Broom. (*Balai.*)

William H. Paine, Barnstable, Mass., U.S., 24th April, 1884; 5 years.

Claim.—The improved broom herein described, the same consisting of the filling A, rod C, bolts D, case E, block F, screws G, handle H, bolt K and nuts *d, m, x*, all constructed, combined and arranged to operate substantially as set forth.

No. 19,181. Fence. (*Clôture.*)

John Elliott, Clinton, Ont., 24th April, 1884; 5 years.

Claim.—In combination with posts A, having one end set in the ground any desired depth, provided with rails or scantlings *n* secured to the upper ends of posts A, and having supports P on which rests the rails or boards *o*, which are fastened to posts A by nailing, or are secured and held in position by some other convenient method, and in combination with stakes E having the lower ends set in the ground, which stakes cross each other just above where the ends of rail *n* join each other, forming a V-shaped receptacle for holding rails *c*, substantially as and for the purpose set forth and described.

No. 19,182. Clutch Hook. (*Griffe de Palan.*)

Charles Green, Roadfield, Me., U.S., 24th April, 1884; 5 years.

Claim.—The hook A having the serrated end E, and provided with the link B and bolt C, combined and arranged to operate substantially as set forth.

No. 19,183. Construction of Refrigerators. (*Construction des Réfrigérateurs.*)

George R. Prowse, Montreal, Que., 24th April, 188; 5 years.

Claim.—1st. As a new article of manufacture, a refrigerator formed of an outer casing and inner lining or casing, said inner lining or casing consisting of sash-work, glass and plaster, or plastic compound, constructed and arranged as described, so that, when the compound, constructed and arranged as described, the sash-work, plaster or plastic compound has set and hardened, the sash-work, glass and plaster, or plastic compound, form practically one solid piece, the whole substantially as described. 2nd. The inner lining of a refrigerator formed in one piece by the combination of sash-work, glass and plaster, or plastic compound, substantially as described. 3rd. The combination of the outer casing A, inner casing composed of sash-work, glass and plaster, or a plastic compound, ice box C and removable tank P, the whole substantially as described and shown.

No. 19,184. Self-Registering Compass. (*Boussole Automatique.*)

Robert Pickwell, Kingston-upon-Hull, Eng., 24th April, 1884; 5 years.

Claim.—1st. In a mariner's compass, a case C containing the sensitized paper band E and having pierced through its top, the slits F, mechanism arranged to impart a uniform motion to either the band E or top having the slits F, in combination with the slit H made in the compass card B, substantially as and for the purpose specified. 2nd. In a mariner's compass, in which sensitized paper and mechanism for imparting a uniform travelling motion to it is contained within the case C, the slits F made in the top of the case C, and the slit H made in the compass card, as specified, in combination with the lamp G situated above the needle of the compass, substantially as and for the purpose specified.

No. 19,185. Governor for Mechanical Power. (*Gouverneur de Machine Simple.*)

John J. Rufe, Doylestown, Pa., U.S., 24th April, 1884; 5 years.

Claim.—1st. A speed governor consisting of a wheel adapted to be secured to a machine or its frame, and a spider or cross-arm working within said wheel and having weighted arms pivoted thereon, said spider and weighted arms connected to friction belts or bands, with means for regulating the movements of said arms, substantially as and for the purpose set forth. 2nd. A speed governor consisting of a wheel formed with a central hub, radiating arms or spokes, a wide rim with inwardly projecting perforated flanges, and a spider or cross-arm formed with a central perforated hub having projecting lugs, the outer ends of said spider-arm being connected to clamping bands and weighted swinging levers, with mechanism for adjusting the same, substantially as and for the purpose set forth. 3rd. In a speed governor, a metal wheel formed, as described, a metal spider-arm formed with central perforated hub, said hub having projecting lugs and a pair of weighted levers pivoted on said spider-arm and connected by an adjustable metal rod, said arms being connected by rock-arms and projecting lugs to clamp bands, substantially as and for the purpose set forth. 4th. The combination of the wheel A having inwardly projecting flanges *h, h, h*, with the spider *b*, projecting lugs *k2* and *k3*, rock-arms *c* and *c*, having projections *h2*, bands B and B1, connecting rods *e* and *e1*, weighted arms *a* and *a1*, connecting rod *n*, socket *v*, nut *r*, projections *p* and *pt*, and coiled spring *o*, substantially as shown and specified.

No. 19,186. Spring Horse Shoe. (*Fer à Cheval Elastique.*)

Henry Dunning, Wellington, Ont., 24th April, 1884; 5 years.

Claim.—A cast steel horse shoe having the lower or spring sections A11, and the upper or shoe section A1 integrally formed in one piece out of a solid blank bar A, split and bent as set forth.

No. 19,187. Car Door Lock.

(Serrure de Porte de Char.)

Virgil A. Krepps, New York, N.Y., U. S., 24th April, 1884; 5 years.

Claim.—1st. The improved lock for freight car doors consisting of hook bolt *a* attached to the door, hook catch *h* having a perforated arm *q* and attached to the side of the car body and located in the lock chamber, and a fastening stud *s* exterior to the lock chamber, substantially as described. 2nd. The combination of the perforated stud *s*, projecting from the casing, with the lock catch *h* provided with a perforated arm *q*, substantially as described. 3rd. The pivoted lock catch *h* provided with an arm *q*, in combination with the fastening stud *s* projected from the casing, said arm *q* provided with hole *r* for the hasp of a padlock, substantially as described. 4th. The lock catch *h* provided with arm *q*, in combination with the fastening stud *s*, said stud having a notch *v* for the lodgement of the padlock hasp over the arm of the catch, for the purpose of holding the catch out of engagement with the hasp, substantially as described. 5th. In a lock for freight car doors, consisting essentially of hook bolt *a* and hook catch *h*, the said catch having an arm *q*, and the lock having a fastening stud *s* therefor, said arm and stud being located in the angle between the side *a1* of the car body, and the cleat *f* containing the lock case, substantially as described. 6th. In a lock case consisting of the hook bolt *a* and hook catch *h*, the bolt *a* having the beveled sides *o* of the head to enter the slot *f1* of the front plate *b1*, when the door is warped or sprung, substantially as described. 7th. In a lock consisting of the hook bolt *a* and hook catch *h*, the inclined wall *e1* of the bottom of the lock space *e*, in combination with the bolt and the catch, and being arranged in the relation to them, whereby the bolt will be guided up to the catch when the door sags, substantially as described. 8th. In a lock consisting of the hook bolt *a* and hook catch *h*, and having the incline *e1*, for guiding the bolt up to the catch, the front plate *b1* having a tongue plate *p1* extending from the bottom of the slot *f1* in said plate along up said incline, substantially as described. 9th. The back plate *p* having the pivot bolt flange *r*, in combination with the catch *h* and bolt *a*, substantially as described. 10th. The plate *r* having hook point *v* and catch, to engage it by notch *x* of hole *v*, to hold the catch while opening the door, substantially as described. 11th. The plate *r* having hook point *v*, cam *a2* and a hole or holes *c1*, in combination with the shank of catch *h* and with plate *p* having stud *b2* and holes *d1*, for securing the lock by the seal, substantially as described.

No. 19,188. Moccasin. (Moccasin.)

Francis Gros-Louis, Jeune Lorette, Que., 24th April, 1884; 5 years.

Reclame.—Comme nouvel article de manufacture, un moccasin fait et disposé de manière a recevoir de l'élastique dans une hausse fermée, ayant double ganse pourvue d'une courroie fixée à l'arrière et d'une nervure, tel que le tout est décrit, et pour les fins ci-haut mentionnées, et ce moccasin portera le nom de "Moccasin avec élastiques de Gros-Louis."

No. 19,189. Process and Apparatus for the Fractional Distillation of Hydro-Carbon Oils. (Procédé et appareil de Distillation Fractionnaire des Hydrocarbures.)

The Imperial Oil Company, London, Ont., (Assignee of Herman Frasch, Bay, Mich., U. S., 24th April, 1884; 5 years.

Claim.—1st. A process for the fractional distillation of hydro-carbon oils, consisting in introducing into the vapor from the still a vapor for which hydro-carbon oil has little or no affinity, and passing together such vapors through a series of condensers of different temperatures, substantially as set forth. 2nd. A process for the fractional distillation of hydro-carbon oils, consisting in vaporizing the hydro-carbon oil, then commingling therewith a vapor for which vapors through a condenser provided with a bath, the temperature of which is above the boiling point of water, substantially as set forth. 3rd. A process for the fractional distillation of hydro-carbon oils, with a vapor for which hydro-carbon oil has little or no affinity, and passing such mixed vapors through a series of condensers, the first condenser having a bath, the temperature of which is above 212° Fahrenheit, the baths of the succeeding condensers being of less temperature than the first, and separately collecting the condensed products of each condenser, substantially as set forth. 4th. A process for the fractional distillation of hydro-carbon oils, consisting in commingling with the vapor from the still a vapor for which hydro-carbon oil has little or no affinity, and passing such mixed vapors upwardly through a condenser in opposition to the flow of the condensed vapors, substantially as set forth. 5th. In an apparatus for the fractional distillation of hydro-carbon oils, the combination, with a condenser provided with a vapor conduit, of pipes for supplying mixed vapors of hydro-carbon oils and steam, or equivalent vapor, to the upper portion of the condenser, substantially as set forth. 6th. In an apparatus for the fractional distillation of hydro-carbon oils, a series of condensers connected with each other, each condenser consisting of a chamber for a condensing bath, zigzag pipes located in the chamber and arranged to conduct the vapor upwardly through the condensing baths, and conduits connected with each condenser for separately collecting the condensed products of each condenser, substantially as set forth. 7th. In an apparatus for the fractional distillation of hydro-carbon oils, a condenser provided with circulating conduits for the hydro-carbon vapor, a pipe communicating with the inlet of said circulating conduits for supplying vapor thereto, and another pipe communicating with said inlet for discharging the condensed vapors that form in the pipes, substantially as set forth.

No. 19,190. Photographic Plate Holder. (Porte-Plaque Photographique.)

Francis W. Jackson, East Orange, N.J., U. S., 25th April, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a dry plate-holder for photographic purposes, having the frame or slide, or both, provided with a surface of silicate or other material which will admit of being written upon, and having the writing erased without injury to said surface, as and for the purposes set forth. 2nd. In a dry plate-holder for photographic purposes, the combination, with the frame thereof, of a slide having a surface of silicate, or other material which will admit of being written upon, and the writing erased without injuring the said writing surface, as set forth. 3rd. In a dry plate-holder for photographic purposes, the combination of a frame with a slide constructed of such material as celluloid and prepared rubber, having the outer or exposed portion thereof prepared or coated with material, as herein described, so as to admit of being written upon, and of the writing being erased an indefinite number of times without impairing said surface, as set forth.

No. 19,191. Sliding Window Blind.

(Persienne en Coulisse.)

Alexander H. Hill, Oskaloosa, Iowa, U. S., 25th April, 1884; 10 years.

Claim.—1st. The combination of a window frame, the outer and parting stops, the sashes, the grooved strips secured to the inner sides of the frame and forming the stops or beads for the inner sash, and a series of blinds mounted to slide in the said strips, one of said blinds being equipped with pivoted slats, as set forth. 2nd. The blind *J*, having side stiles provided with the beads *c* and centre strip *f*, in combination with the slats pivoted in said beads and centre strip, as set forth.

No. 19,192. Means of Drying by Cold Process Printing on Tin, Zinc, Brass and other Metal. (Moyen de Dessiccation par le Procédé Froid de la Peinture sur Ferblanc, Zinc, Cuivre Jaune et autres Métaux.)

Henry Mathieson, London, Eng., 25th April, 1884; 5 years.

Claim.—The mode or process, described in the foregoing specification, for drying by cold process printing on tin, zinc, brass, or other metal, substantially as therein set forth.

No. 19,193. Grinding Mill. (Moulin à Blé.)

Ezra Rhodes, Cleveland, Ohio, U. S., 25th April, 1884; 5 years.

Claim.—The herein described grinding-mill comprising the casing B, cylinder F, concave G, arm H, weight H, shaft I, provided with the eccentrics K and handle L, substantially as and for the purpose described.

No. 19,194. Combined Wood and Iron Bridge. (Pont en Bois et Fer Combinés.)

John Bear, Jr., and Benjamin Bear, Doon, Ont., 25th April, 1884; 5 years.

Claim.—1st. In a truss-bridge, the upper chord A constructed of timber in three sections, joined at the angles by the tie-iron plates B, substantially as shewn and for the purpose specified. 2nd. In a truss-bridge, the combination of the upper chord A and lower chord C of iron rods, cross-braces I and vertical tie-rods K, as shewn. 3rd. The shoe H in combination with the upper and lower chords, substantially as shewn and for the purpose specified. 4th. The bearing-blocks E and upper shoes or bearings *h*, in combination with the upper and lower chords, as shewn and for the purpose specified. 5th. The combination of the bearing-blocks E with the lower chord C, needle-beams F, hanging-bolt G and vertical tie-rods K, as shewn and for the purpose specified.

No. 19,195. Fruit and Lemon Squeezer,

(Pressoir pour Fruits et Citrons.)

Thomas C. Newman, Chicago, Ill., U. S., 25th April, 1884; 5 years.

Claim.—1st. In a lemon squeezer, a presser-foot connected to the lid of the lemon receptacle having a circumferential flange, and a series of perforations in said flange, the whole adapted to enter the lemon receptacle, as and for the purpose specified. 2nd. In a lemon squeezer, a chamber formed by making the diameter of the neck connecting the presser-foot to the lid of less diameter than the diameter for said connected parts, in combination with a gooved channel *h* and cup C, in the upper surface of the flange of which said channel is cut. 3rd. The combination, to form a lemon-squeezer, of the handles A and A1, the lemon cup C having a circumferential groove *k* in its upper surface, and having a flange encircling the mouth thereof, a channel *h*, the lid D, the presser-foot E having a flanged portion in which is a series of perforation *g1* and depending from, and secured to said lid, as hereinbefore set forth. 4th. In a lemon-squeezer, a lemon cup having in its inner surface a groove *k*, immediately under and parallel to the inner edges of the mouth of the same, and having an outlet channel intersecting said groove *k*.

No. 19,196. Machine for Making Rope.

(Machine à faire le Cordage.)

Charles C. Colby Stanstead, (assignee of Edward M. Ball, Coaticook, and Frederick A. Wiswell, (Beche Plain.) Que., 25th April, 1884; 5 years.

Claim.—1st. The shaft E having a loose disc H, combined with a loose ring, spider, spring and adjusting nut, as set forth. 2nd. The shaft E and loose disc H having bevelled periphery, combined with correspondingly bevelled loose ring, slotted spider, spring and adjusting nut, substantially as set forth. 3rd. The combination, with the main shaft provided with the hub D secured thereto and having radial arms *d*, of the sleeves *e*, shafts E and tension devices H, I, J, J1, J2, substantially as set forth. 4th. The sleeve *e*, shaft E, bracket

K, having spool-arm *k* and shield *k*₁, substantially as set forth. 5th. The sleeve *c*, shaft E, bracket K having spool-arm *k* and shield *k*₁, provided with the retaining eyes *k*₅ and friction studs *k*₆, substantially as set forth. 6th. The combination, with a rotating main shaft provided with a hub secured thereto having radial arms, and the bevel and spur gears L, M, loose on said main shaft, and provided with driving mechanism, of the shaft, E, provided with the sleeves *c* held in the radial arms *d*, and having the bevel pinions *l* substantially as set forth. 7th. The combination, with a shaft provided with a worm gear, and a slotted sector secured to a suitable support, of a shaft Q provided at one end with a worm to engage with the worm gear, having its other end fitted in a movable bearing and passing through the slotted sector, and provided with means to adjust and hold it at any point in said slotted sector, substantially as and for the purpose set forth. 8th. The combination, with the slotted sector Q, of the movable shaft Q provided with sleeve *q* held thereto, with a set screw *q*₂, and provided with the adjusting nut *q*₃, substantially as and for the purpose set forth. 9th. The combination, with the rotating plain-surfaced drawing roll S, of a rotating grooved retaining and compression roll S₁, substantially for the purpose set forth. 10th. The combination, with a shaft provided with the drawing-roll S, and means for imparting motion to said shaft, of the vertically-adjustable shaft *s* having the grooved compression roll S₁, and means for giving motion to said shaft, substantially as set forth. 11th. The combination, with the rotating shaft R having the spur gear *r*₁, and the roll S, of the shaft *s* provided with the gear *r*₁, and grooved roll S₁, and the bearings R having the block *s*_x and adjusting screw *s*_z, substantially as set forth. 12th. The combination, with the drawing roll C, of a pair of grooved rolls arranged one on either side thereof, and adapted to prevent the overlapping of the rope on said drawing-roll, substantially as set forth. 13th. The combination, with the drawing-roll S, of the brackets T provided with the removable rolls *t*₁, *t*₂, and retaining screws *t*₃, substantially as set forth. 14th. The reel U having one of its discs adjustable on the reel hub, substantially as shown and described.

No. 19,997. Machine for Cleaning Intestines. (*Machine pour nettoyer les Intestins.*)

Sigismund Oppenheimer, New York, N. Y., (assignee of Ferdinand E. Davis, Chicago, Ill.) U. S., 25th April, 1884; 15 years.

Claim.—1st. The combination, in a machine for cleaning intestines, of an overhanging arm, shafts carrying the scrapers, and journalled at one end in bearings at the outer end of said arm, and a cylinder for supporting the intestines, substantially as and for the purposes specified. 2nd. In a machine for cleaning intestines, a cylinder for supporting the intestines mounted in vertically movable bearings, in combination with a set screw for depressing, and a lever for raising the bearing of the cylinder, substantially as and for the purpose specified. 3rd. The combination, in a machine for cleaning intestines, of the shafts carrying scrapers mounted in stationary bearings, with the cylinder for supporting the intestines mounted in movable bearings, the yokes containing the latter, and the set screw for depressing, and the pivoted weighted lever for raising the bearings of the cylinder, substantially as described. 4th. The combination, in a machine for cleaning intestines, of the overhanging arm E, the shafts H and J carrying scrapers, and having one end journalled in a pendant bearing at the outer end of the overhanging arm, the guards L and M attached to the said overhanging arm, and extending the length of the scrapers, and the cylinder for supporting the intestines, mounted in vertically adjustable bearings.

No. 19,998. Machine for Crimping Elastic Fabrics. (*Machine pour Cambrier les Tissus Elastiques.*)

Frederick Crompton, Toronto, Ont., (Assignee of Anson C. Dearing.) Detroit, Mich., U. S., 25th April, 1884; 5 years.

Claim.—1st. The combination, with the bed A having fixed jaw B and the movable jaw B₁ provided with plates E, E₁, of the disk D eccentrically pivoted to bed A, and provided with lever D₁, the bars F, F₁ held in a closed-down position by spring catches F₂, F₃, on end of plates E, E₁, bars I, I₁ having notched plates H, H₁ hung on plates E, E₁, and clamping bar J provided with clamps J₂ to turn under the ends of bars I, I₁, to hold the puckered fabric, as set forth. 2nd. The combination, with the bed A having fixed jaw B, of the movable jaw B₁ and disk D eccentrically pivoted to bed A, operating to compress the jaw by lever D₁, as set forth.

No. 19,999. Harness Covering. (*Enveloppe de Harnais.*)

Holand C. Babcock, Pliny Jewell, Lyman B. Jewell and Charles A. Jewell, Hartford, Ct., U. S., 25th April, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a wool-covered harness-protector made in strips of any desired length and width, with hooks, studs, or equivalent devices secured on opposite edges, in combination with the lacing, whereby the whole is attached in place on the harness, all substantially as described. 2nd. In combination, the wool-covered protector a, the re-enforce b, the hooks or stud c and the lacing d with the enveloped harness, all substantially as described.

No. 19,200. Art of Manufacturing Wire Rope and Wire Rope Machine. (*Art de Fabriquer le Cordage Metallique et Machine pour cet Objet.*)

Charles C. Colby, Stanstead, (Assignee of Frederick A. Wiswell, Beebe Plain,) Que., 25th April, 1884; 5 years.

Claim.—1st. The improvement in the art of manufacturing wire rope, which consists in first, laying individual wires around cores to form strand cores, next laying individual wires around the strand cores to form strands, and lastly, laying the strands around a rope

core, to form the rope all in one continuous operation, substantially as set forth. 2nd. The improvement in the art of manufacturing wire rope, which consists in, first, laying individual wires subjected to tension applied directly thereto around cores to form strand cores, next laying individual wires subjected to tension applied directly thereto around the strand cores to form strands, and lastly, laying the strands around a main core, to form the rope all in one continuous operation, substantially as set forth. 3rd. The improvement in the art of manufacturing wire rope, which consists in, first, laying individual wires around cores to form strand-cores, next laying individual wires around the strand cores to form strands, and lastly, laying the strands directly around a rope core in substantially the same line of draft as that in which the wires are laid around the strand cores to form the rope, substantially as set forth. 4th. The improvement in the art of manufacturing wire rope, which consists in, first, laying individual wires subjected to tension applied directly thereto around cores to form strand cores, next laying individual wires subjected to tension applied directly thereto around the strand cores to form strands, and lastly, laying the strands directly around a rope core in substantially the same line of draft as that in which the wires are laid around the strand cores to form the rope all in one continuous operation, substantially as set forth. 5th. A series of rotating heads provided with arms adapted to carry wire-bearing spools and having each a laying head connected to, and rotating with said head, a series of rotating disks provided with arms adapted to carry wire-bearing spools and having each a laying head connected to, and rotating with said disks, and a revolving main shaft provided with a rope laying head, in combination, substantially as set forth. 6th. A rope laying head, in combination, substantially as set forth. 7th. A series of rotating heads provided with arms adapted to carry wire-bearing spools and having each a laying head connected to, and rotating with said heads, and adapted to remove bends in the wires and impart a bend of its own thereto, a series of rotating disks provided with arms adapted to carry wire-bearing spools and having each a laying head connected to, and rotating with said disks, and adapted to remove bends in the wires and impart thereto a bend of its own, and a revolving main shaft provided with a rope laying head, in combination, substantially as set forth. 7th. A series of rotating heads provided with arms adapted to carry wire-bearing spools and having each a laying head connected to, and rotating with said heads, and adapted to subject the wires passing there through to tensile strain, a series of rotating disks provided with arms adapted to carry wire-bearing spools, and having each a laying head connected to, and rotating with said disks and adapted to subject the wires to tensile strain, and a revolving main shaft provided with a rope laying head, in combination, substantially as set forth. 8th. A rotating hollow shaft *e* having a head provided with arms secured thereto, a number of spool-carriers adapted to be attached to said arms and to contain wire-bearing spools, a laying head connected to, and rotating with said head, a rotating shaft having its bearings in a disk the hollow shaft *e* and provided at its forward end with a disk having arms, a number of spool-carriers adapted to be attached to said arms of the disk and to contain wire-bearing spools, and a laying head connected to, and rotating with said disk, in combination, substantially as and for the purpose set forth. 9th. A sleeve *d* having an arm *a* adapted to carry a core-bearing spool, a rotating hollow shaft *e* having its bearings in the sleeve *d* and provided with a head having arms, a number of spool-carriers adapted to be attached to said arms and to contain wire-bearing spools, a laying head connected to, and rotating with said head, a rotating hollow shaft *e* having its bearings in the hollow shaft *e*, and provided at its forward end with a disk having arms, a number of spool-carriers adapted to be attached to said arms of the disk and to contain wire-bearing spools, and a laying head connected to, and rotating with said head, in combination, substantially as and for the purposes set forth. 10th. The rotating hollow shaft *e*, head E secured to said shaft and provided with arms *e*₂ adapted to carry wire-bearing spools, a laying head connected to head E, the rotating shaft *k* having its bearings in the hollow shaft *e* and provided with disk K having a head *k*₁ adapted to carry wire-bearing spools, and a laying head connected to disk K, in combination, substantially as set forth. 11th. A spool-carrier consisting of a base having a rigid arm, a swinging arm and means for holding the swinging arm parallel with the rigid arm to retain a spool between said arms, and provided with a friction wheel having a corrugated stud adapted to engage with the spool, and a friction block, substantially as set forth. 12th. A spool-carrier consisting of a base having a rigid arm, a swinging arm, and means for holding the swinging arm parallel with the rigid arm to retain a spool between said arms, and provided with a friction wheel having a corrugated stud adapted to engage with the spool, a friction block and means for regulating the pressure between said block and wheel, substantially as set forth. 13th. A spool-carrier having a fixed arm, the swinging arm *o*₁ provided with a cam web and a bent retaining wire, substantially as set forth. 14th. The improved spool-carrier consisting of the base O having rigid arm *o*, swinging wheel Q, its stud *q*, block P, its stud *p*, adjusting nut *p*₁, swinging arm *o*₁, its cam web, pin and spring, and the retaining wire, substantially as shown and described. 15th. The base H having nut and set screw *h*₁, the slotted tube I provided with a thumb nut, and the spider secured to the forward end of said tube, in combination, substantially as set forth. 16th. The combination, with the base H having the sleeve *h* and set screw *h*₁, of the slotted tube I provided with a thumb nut, and means secured to the forward end of the tube for retaining the sleeve on its base, substantially as and for the purpose set forth.

No. 19,201. Art of Manufacturing Wire Rope and Cable and Wire Rope Machine. (*Art de Fabriquer le Cordage et les Câbles Metalliques et Machine pour cet Objet.*)

Charles C. Colby, Stanstead, (Assignee of Frederick A. Wiswell, Beebe Plain,) Que., 25th April, 1884; 5 years.

The improvement in the art of manufacturing rope, which consists in, first, laying individual wires around a core to form a cord, next laying individual wires around a core to form a strand core, next laying a number of the cords around the strand core to form a strand, and lastly, laying a number of the strands around a main core to form

finally the rope, the whole simultaneously performed substantially in the manner set forth. 2nd. The improvement in the art of manufacturing rope, which consists in, first, laying individual wires around a core to form a cord, next laying a number of the cords around a core to form a strand, and lastly, laying a number of the strands around a main or rope cover to form finally the rope, the whole simultaneously performed, but at progressively forward points in the process of manufacture, substantially as set forth. 3rd. The improvement in the art of manufacturing rope, which consists in, first, laying individual wires subjected to tension applied directly thereto around cores to form cords, next laying wires around cores to form strand-cores, next laying the cords around the strand-cores to form strands, and finally, laying a number of the strands around the main core to form the rope, the whole simultaneously performed, substantially in the manner set forth. 4th. The improvement in the art of manufacturing rope, which consists in, first, laying individual wires subjected to tension applied directly thereto around cores to form cords, next laying the cords around cores to form strands, and lastly, laying the strands around a main core to form the rope, the whole simultaneously performed at progressively forward points in the process of manufacture, substantially as set forth. 5th. A number of shafts radiating around strand-shafts, provided each with a laying head and adapted to carry a number of wire-bearing spools, a series of revolving strand-shafts radiating around a main shaft, a series of strand-laying heads and a revolving main shaft provided at its forward end with a rope laying head, in combination, substantially as and for the purpose set forth. 6th. A number of shafts radiating around strand shafts, each provided with a laying head and adapted to carry a number of wire bearing spools, a series of revolving strand shafts radiating around a main shaft, a series of strand laying heads, and a revolving hollow main shaft adapted to permit a rope core to pass from a suitable reel through said shaft, and provided with a rope-laying head, in combination, substantially as and for the purpose set forth. 7th. A number of shafts radiating from strand-shafts, provided each with a laying-head and adapted to carry a number of spools containing the individual wires, a series of revolving hollow strand shafts radiating from a main shaft and adapted to carry each a spool containing a rope, which is passed through said hollow shaft to the laying-head, a series of strand-laying heads and a revolving hollow main shaft adapted to permit the passage of a rope core through it to the main laying-head, said shaft provided with a main or rope-laying head, in combination, substantially as and for the purpose set forth. 8th. A number of hollow shafts revolving on their own axes, radiating and revolving around strand-shafts, each adapted to carry a number of wire-bearing spools and a core spool, and provided with a laying-head, a series of revolving strand-shafts and strand laying-heads, and a revolving main-shaft provided with a rope laying head, in combination, substantially as and for the purpose set forth. 9th. A number of hollow shafts revolving on their own axis, radiating and revolving around the axis of strand shafts, provided each with a laying head and adapted to carry a number of wire-bearing spools and a core-spool, a series of hollow strand shafts rotating on their own axes radiating and rotating around the axis of a main shaft, and each adapted to carry a strand core spool, a series of rotating strand laying-heads, and a revolving main shaft provided with a rope laying-head, in combination, substantially as and for the purpose set forth. 10th. A number of hollow shafts, revolving on their own axes, radiating and revolving around the axes of the strand-shafts, each provided with a laying-head and adapted to carry wire-bearing spools and a core-spool, a number of revolving hollow strand-shafts, each provided with a strand-core laying-head, and adapted to carry a set of wire-bearing spools and a core-spool, a number of strand laying-heads, and a revolving main shaft provided with a rope laying-head, in combination, substantially as and for the purpose set forth. 11th. A number of hollow shafts revolving on their own axes, radiating and revolving around the axes of strand-shafts, each provided with a laying-head and adapted to carry a number of wire bearing spools, and a core-spool, a number of revolving hollow strand shafts, each adapted to carry a core spool with the core passing through said shaft, a number of strand laying-heads and a revolving hollow main shaft designed to permit the passage through it of a rope core, and provided with a main or rope-laying head, in combination, substantially as and for the purpose set forth. 12th. A number of hollow shafts revolving on their own axes, radiating and revolving around the axes of strand shafts, each provided with a laying-head and adapted to carry a number of wire-bearing spools, and a core-spool, a number of hollow strand-shafts radiating and rotating around a main shaft, each provided with a strand core laying-head and adapted to carry a number of wire-bearing spools and a core-spool, a number of strand-laying heads and a revolving hollow main shaft designed to permit the passage through it of a rope-core and provided with a rope laying-head, in combination, substantially as and for the purpose set forth. 13th. A series of cord-shafts revolving on their own axes, radiating and revolving around the axes of a strand-shaft, each adapted to carry spools containing the individual wires provided with a laying-head, and tension mechanism to exert tensile strain directly on the individual wires, a strand-shaft rotating in a direction opposite to the rotation of the cord-shafts, and a strand laying-head, in combination, substantially as and for the purpose set forth. 14th. A number of hollow shafts revolving on their own axes, radiating and revolving around the axes of a strand-shaft, each adapted to carry a number of wire bearing spools and a core spool, and provided with a laying-head and tension mechanism to exert tensile strain directly on the individual wires, a rotating hollow strand-shaft provided with a strand core and adapted to carry a number of wire bearing spools, and a core spool, and a strand laying-head, in combination, substantially as and for the purpose set forth. 15th. A number of hollow shafts rotating on their own axes and revolving around the axes of strand shafts, each adapted to carry wire-bearing spools and a core-spool, and provided with a laying-head and tension mechanism to exert tensile strain directly on the individual wires, a number of hollow rotating strand-shafts, each constructed to carry a core-spool, a number of strand laying-heads and a rotating hollow main shaft designed to permit the passage through it of a rope-core, and provided with a rope laying-head, in combination, substantially as and for the purpose set forth. 16th. A number of shafts radiating and revolving around the axes of strand-shafts, each adapted to carry a number of wire-bearing spools, and provided with tension mechanism to exert tensile strain

directly on the individual wires, a number of hollow strand-shafts rotating on their own axes, radiating and rotating around the axes of the main shaft and each adapted to carry a core bearing spool, a number of strand laying-heads and a revolving main shaft provided with a rope laying-head, in combination, substantially as and for the purpose set forth. 17th. A number of shafts radiating and revolving around the axes of strand-shafts, each adapted to carry a number of wire bearing spools, and provided with tension mechanism to exert tensile strain directly on the individual wires, a number of hollow strand-shafts rotating on their own axes, radiating and revolving around the axes of the main shaft, and each adapted to carry a core bearing spool, a number of strand laying heads, and a revolving hollow main shaft provided with a rope laying-head and adapted to permit the passage through it of a rope-core, in combination, substantially as and for the purpose set forth. 18th. A number of core-shafts radiating and revolving around the axes of strand-shafts, each adapted to carry a number of wire-bearing spools and provided with tension mechanism to exert tensile strain directly on the individual wires, a series of strand-shafts revolving on their own axes, and a series of strand laying-heads and spiders arranged forward of said strand-shafts in such manner that, as the strands are laid, the wires entering the strand laying-heads will be evenly laid into the strands, in combination, substantially as and for the purpose set forth. 19th. A number of cord shafts rotating on their own axes, radiating and revolving around the axes of strand-shafts, each adapted to carry a number of wire-bearing spools, and provided with a laying-head and a tension mechanism to exert tensile strain directly on the individual wires, a series of strand-shafts revolving on their own axes, and a series of strand laying-heads and spiders arranged forward of said strand-shafts in such manner that, as the strands are laid, the cords entering the strand laying-heads will be evenly laid into the strands, in combination, substantially as and for the purpose set forth. 20th. A number of cord shafts radiating and rotating around strand-shafts, each adapted to carry a number of wire-bearing spools, and provided with tension mechanism to exert tensile strain directly on the individual wires, a series of strand-shafts rotating on their own axes, radiating and rotating around the axes of the main shaft, a series of strand laying-heads and spiders rotating with the strand-shafts and arranged forward of said shafts in such manner that, as the strands are spun, the wires entering the strand laying-heads will be evenly laid into the strand, and a revolving main shaft provided with a rope laying-head and die, in combination, substantially as and for the purpose set forth. 21st. The combination, with a hollow shaft provided with the loose disc and ring, of a tube inserted in the hollow shaft and provided with a key at its forward end abutting against a plate, the plate bearing against the face of the disc and its ring, the said tube having its rear end exteriorly screw-threaded and provided with a thumb-nut and coiled spring, as described and for the purpose set forth. 22nd. The combination, with a shaft having the loose disc with its ring, of two plates secured to the shaft, one in front and the other in rear of the loose disc, and provided each with projecting fingers so arranged with relation to each other as to cause the individual wires to pass between the loose disc and its ring at an angle to the line of draught, substantially as and for the purpose set forth. 23rd. The combination, with a shaft provided at its forward end with a laying-head, of one or more spool-holders having radiating arms to contain the spools, and adjustably secured to said shaft so that the arms may be arranged with relation to one another and to the laying-head, substantially as and for the purpose set forth. 24th. The combination, with a shaft provided at its forward end with a laying-head, of two or more spool-holders secured to said shaft, and each having radiating arms to contain the spools, said arms inclining forwardly with relation to the laying-head, substantially as described. 25th. A spool-holder having radiating arms provided each with a spring-button to retain the wire-bearing spools on said arms, and prevent the rotation of said spools as against the "spring" of the wire, as described. 26th. A strand-shaft provided with a strand-core laying-head, the spool-carriers, the spider tube, thumb-nut and coiled spring, as shown and described. 27th. The combination, with a series of cord-shafts, each adapted to carry a number of wire-bearing spools, of a hollow strand-shaft provided with a strand-core laying-head and designed to carry a number of wire-bearing spools, and a spool containing a core which passes through said hollow shaft to the strand-core laying-head, and a strand laying head, substantially as and for the purpose set forth. 28th. The combination, with a series of cord-shafts, each adapted to carry a number of wire-bearing spools, and provided with tension mechanism to exert tensile strain directly on the individual wires, of a hollow strand-shaft provided with a strand core laying head and designed to carry a number of wire bearing spools, and a spool containing a core which passes through said hollow shaft to the strand core laying head, and a strand laying head, substantially as and for the purpose set forth. 29th. The combination, with a revolving main shaft having two series of arms supporting a series of strand shafts and strand laying heads, the strand shafts provided with the bevel gears and the strand laying heads, of the double gear wheel working loosely on a bearing of said main shaft and receiving motion independently of said shaft, and the shafts secured to the back of the main shaft and for the purposes set forth. 30th. The combination, with a shaft parallel with the main shaft driven by a suitable motor, provided with a spur gear but capable of receiving spur gears of different diameters, of the main shaft having a sleeve mounted thereon provided with a spur gear and an arm, the latter adjustably fastened to a standard and provided with the idle gears meshing with the gears on the sleeve and auxiliary shaft and the standard, substantially as set forth. 31st. The combination, with a shaft from which issues a rope or other twisted article, of a rotating wheel adapted to receive and draw the rope from the shaft, and means for partially lifting the coil or coils of rope at two or more points around the periphery of said wheel, substantially as set forth. 32nd. The combination, with a shaft from which issues a rope or other twisted article, of a rotating wheel so arranged with relation to said shaft that the rope or other article may be passed one or more times around the periphery of said wheel and be drawn from the shaft, and a pair of rolls having a surface speed equal to that of the wheel, so as to hold the rope taut on said wheel and take said rope from the wheel as it is drawn thereon, substantially as set forth. 33rd. The combination, with a shaft from which issues a rope or

other twisted article, of a rotating wheel adapted to receive and draw the rope from the shaft, means to prevent overlapping of the rope, and a pair of rolls having a surface speed equal to that of the wheel, so as to hold the rope taut on said wheel and take said rope from the wheel as it is drawn thereon, substantially as set forth. 34th. The combination, with the drawing-off wheel, of two or more inverted truncated cones having a peripheral groove or grooves and arranged with relation to the periphery of the drawing-off wheel, as described and for the purpose set forth. 35th. The herein described peripheral grooved inverted truncated cone, having the described bottom on working surface of said groove or grooves at right angles to the longitudinal axis of said cone, as and for the purpose set forth. 36th. The combination, with the revolving drawing-off wheel, of a pair of rotating drawing and compression rolls, whose surface speed is slightly greater than that of the drawing-off wheel, substantially as set forth. 37th. A drawing-off wheel and a pair of oppositely revolving shafts parallel to each other, provided with drawing and compression rolls and having means for their adjustment, said shafts and drawing-off wheel having a fixed relative speed, in combination, substantially as set forth. 38th. The shaft 8, frame 3, shaft 7, swinging frame 9, swinging dog 10 pivoted to frame 3, set screw 11 and stud 12, in combination, as shown and described. 39th. The shaft Z₁ having, at one end, a miter gear frame 3, having shaft 2 provided with the miter and spur gears, as shown, shaft 4 having a spur gear, shaft 8 provided with a spur gear, swinging frame 9 having stud 12, shaft 7 and spur gear, and the swinging dog 10 having set screw 11, in combination, substantially as shown and described. 40th. The combination, with the revolving main shaft B, of shaft Z receiving motion relative to the motion of the main shaft from the shaft *x* from which motion is imparted to the main shaft, the shaft *x*, shafts 2 and 4 connected by suitable gearing to shaft Z₁ and drawing wheel 5, the connecting gearing shaft Z₁, the worm and its gear and drawing wheel 5 provided with the teeth as shown, substantially as described and for the purpose set forth. 41st. The improved laying head F composed of the piece *f*, provided with a central bore, and the sleeve *f* adapted to rotate freely on the piece *f*, and means for longitudinally adjusting the sleeve on the piece *f*, in combination, substantially as and for the purpose set forth.

No. 19,202. Manufacture of Boots and Shoes. (*Fabrication des Chaussures.*)

Edward H. Buckley, Philadelphia, Pa., U. S., 20th April, 1884; 5 years.

Claim.—A boot or shoe having the upper and slip sole or welt connected by staples forming a metallic in-seam, and the outer sole secured to said slip sole or welt by independent fastenings, substantially as and for the purposes set forth.

No. 19,203. Two-Wheeled Vehicle.

(*Voiture à deux Roues.*)

Adolph Reichle, Detroit, Mich., U. S., 29th April, 1884; 5 years.

Claim.—1st. In a two-wheeled vehicle, the combination, with each side spring, of a compensating crank-rod working independently of the crank-rod of the opposite side spring, whereby the motion of one spring is prevented from affecting the other, substantially as described. 2nd. In a two-wheeled vehicle, the combination, with the side-bars and thills of the iron F having eye G and stud L, the strap iron having ears *b* and *i*, and the threaded bar K pivoted at one end in the ears *i*, and the other end adapted to be held in the hole in the stud L and provided with adjusting nuts M, substantially as and for the purpose specified. 3rd. The combination, in a two-wheeled vehicle, of the axle A, side bars B turned outwardly at their rear ends, the semi-elliptic platform springs C, and the brace-bars D diverging from the springs towards the side bars, substantially as specified. 4th. The combination, in a two-wheeled vehicle, of the axle A, side bars B turned outwardly at their rear ends, the semi-elliptic platform springs C, brace-bars D, compensating crank-rods E provided with bearings *d*, and the shaft I, when constructed and arranged substantially in the manner described.

No. 19,204. Coat Sleeve. (*Manche d'Habit.*)

Charles F. Butterworth, Troy, N. Y., U. S., 29th April, 1884; 5 years.

Claim.—The combination, with an ordinary coat sleeve, of the elastic wristlet C consisting of a hollow annular fur band, and a spring *d* within it, and the securing strip *e* having one edge secured to the wristlet, and its other edge interposed between the turned-in portion of the sleeve and its lining, and the whole secured together and to the outer portion of the sleeve, substantially as herein shown and described.

No. 19,205. Platen Printing Machine.

(*Machinette d'Impression à la Congrène.*)

Alfred Godfrey, New Reddish, Eng., 29th April, 1884; 5 years.

Claim.—1st. In a platen printing machine, the combination therewith, of a gripper or series of grippers on a revolving frame which automatically seize, feed to the type a *d* deliver separate sheets of paper, substantially as described. 2nd. In a platen printing machine, the combination with the board or boards, of automatic side and end adjusting lays, substantially as described. 3rd. In a platen printing machine, the combination with the platen moving in parallel planes to the type back, of bearers to prevent the cutting of the platen, and thus to ensure uniformity of impress, substantially as described.

No. 19,206. Mode of Manufacturing Bread.

(*Mode de Fabrication du Pain.*)

Mary Croydon, Watsall, Eng., 29th April, 1884; 5 years.

Claim.—A new and improved bread consisting of the combination of groats with flour, substantially as herein set forth.

No. 19,207. Sealed Galvanic Battery Cell.

(*Cellule Scellée d'Appareil Galvanique.*)

James H. Shaw, (Assignee of William T. McGinnis), New York, N. Y., U. S., 29th April, 1884; 5 years.

Claim.—The combination, in a galvanic battery, with a bottle-shaped vessel formed with a single contracted opening, and within which one of the battery elements is enclosed and secured in the process of manufacture, of an elastic plug or stopper of insulating material adapted to be forced into the contracted opening and to carry and suspend within the vessel the remaining element, substantially in the manner and for the purpose herein set forth.

No. 19,208. Lead Ribbon for Metallic Seals.

(*Lame de Plomb pour Cachets Métalliques.*)

Elisha C. Sloan, Boston, Mass., U. S., 29th April, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a continuous pressed lead seal ribbon perforated throughout its length at *a*, substantially as and for the purposes described. 2nd. The die and bridge for forming the same by pressure, provided with the slot *a*, basin *d* and spurs *e*, substantially as described.

No. 19,209. Grain Thrashing Machine.

(*Machinette à Battre les Grains.*)

Oscar N. Eastman, Cornwall, Ont., 29th April, 1884; 5 years.

Claim.—1st. The combination of the five paddle beaters L with the suspended boards K, K, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the shoe G and the hopper H, of the rollers J and crank shaft I, giving the shoe and hopper G, H, an end shake motion, substantially as and for the purpose hereinbefore set forth.

No. 19,210. Grain Drying Process and Appliance. (*Procédé et Appareil de Séchage des Grains.*)

Edward Thompson, Hokah, Minn., U. S., 29th April, 1884; 5 years.

Claim.—1st. The method of drying grain, which consists in forcing a powerful blast of warm air divided into numerous small parallel currents through a quantity of grain while in a state of rest, and when sufficiently dry, cooling the grain by means of a blast of normal air applied in the same manner before removing the grain, substantially as and for the purpose hereinbefore set forth. 2nd. The peculiar construction of the air conduits, composed of the bevelled beams having perpendicular side extensions, said beams being provided with tenons at their ends, for the purpose of supporting the air conduits and laterally strengthening the walls of the bin against the pressure of the grain, substantially as and for the purpose hereinbefore set forth. 3rd. The air conduits composed of the tenoned and bevelled beams having perpendicular side extensions, in combination with the bin having a single air chamber connecting therewith, substantially as and for the purpose hereinbefore set forth.

No. 19,211. Safety Self-Closing Shunt Switch for Electric Lamps, Motors, &c.

(*Commutateur Automatique de Sécurité pour Lampes, Moteurs, &c. Electriques.*)

Elihu Thomson, Lynn, Mass., U. S., 29th April, 1884; 5 years.

Claim.—1st. The combination, with a shunting-switch, of a thermal controlling device arranged in suitable connection with the shunting-switch contacts, so as to be heated by any arc that may form between, and means for closing the shunt circuit controlled by said thermal device. 2nd. The combination, with an electric lamp, of a shunting-switch for shunting said lamp into and out of circuit, means for closing said shunt circuit, and thermal controlling devices arranged in suitable proximity to the shunting-switch contacts, so as to be operated when an arc forms between said contacts, on opening the shunt, thus immediately causing a reclosing of the shunt connections. 3rd. The combination, with an electric lamp, of a shunting-switch for making and breaking a shunt around the same, means for completing said shunt consisting either of the shunting-switch itself, or of an auxiliary circuit closer normally held out of action when the shunt is broken by the switch, and a controlling and releasing thermal device arranged in proximity to the shunting-switch contacts, whereby a switch may be made to immediately reclose the shunt if, when the shunting-switch is opened, an arc forms between its contacts. 4th. The combination, with an electric lamp or other electrical apparatus, of a shunting-switch and means for completing the shunt connections normally held or detained from action when the switch is opened by a thermo-responsive device, and released so as to complete the shunt connections, by the heating effects upon said thermo-responsive device, of any arc formed between the switch contacts when said switch is opened. 5th. The combination, with an electric lamp, of a shunting switch, a circuit closing device completing the shunt connections, and a fusible or combustible detaining device which prevents the closing of the shunt connections, excepting when it is fused or burned by the arc formed between the shunting-switch contacts. 6th. The combination, with a shunting-switch, of a spring-actuated circuit closer for completing the shunt connections, normally held out of action by a fusible stop or plug in proximity to the contacts of the shunting-switch. 7th. The combination of the shunting switch, the spring circuit closer mounted thereon, and the restraining fusible stop *b*.

No. 19,212. Lamp Supporting Bracket for Sewing Machines. (*Console Porte-Lampe pour Machines à Coudre.*)

Mary E. Smith, Southbury, Ct., U. S., 29th April, 1884; 5 years.

Claim.—The combination of the part B provided with means for

affixing it to the underside of the table A, and with a way or ways for holding the part C, and the said part C provided with a socket for holding a lamp bracket, constructed as described, whereby it may slide in, or on the way or ways of the fixed part, substantially as herein specified.

No. 19,213. Refrigerator. (*Garde Manger.*)

Judson A. Baldwin, Shelburne, Vt., U.S., 29th April, 1884; 5 years.

Claim.—In a refrigerator, the combination of the doors of the provision chamber, the ice chamber B, a cut-off D, a connecting rod E attached thereto and which passes down through the upper end of each of the crank levers F, a projection on the rod below the upper end of each lever, and springs G which have their free ends attached directly to the crank levers F, so as to keep their upper ends forced constantly downward when they are left free to move, substantially as shown and described.

No. 19,214. Shuttle for Sewing Machines.

(*Navette pour Machines à Coudre.*)

Elizabeth Chavers, Siddon, Mich., U.S., 29th April, 1884; 5 years.

Claim.—1st. In sewing-machine shuttles, the combination of a screw cap C centrally apertured and threaded, a spindle D threaded at one end, and an externally-threaded neck to receive the cap, whereby the spindle may be held and released, as described. 2nd. The combination, with the shuttle A, of the spindle D, the screw-cap C into which the spindle is screwed, and the removable end plate E, substantially as herein shown and described and for the purpose set forth.

No. 19,215. Liquid and Process for Generating a Compound Vapour as a Motor Power. (*Liquide et Procédé pour Produire une Vapour Composéé comme Moteur.*)

William L. Lowrey, Boston, Mass., U.S., 29th April, 1884; 5 years.

Claim.—1st. A compound liquid to be used in engine boilers to generate a vapor for a motor power, consisting of alcohol either absolute, methylic, the alcohol of commerce or of any other kind or name either jointly or separately, their mixtures or compounds and water in the following proportions, viz: for small boilers i.e., boilers of from two (2) to twenty (20) horse-power, equal parts of water and alcohol or alcohols, their mixtures or compounds; and for large boilers i.e., boilers of twenty (20) horse-power and upward, six (6) parts water and four (4) parts alcohol or alcohols, their mixtures or compounds, and the modifications and variations of said proportions, substantially as described. 2nd. The process of generating a compound vapor as a motor power, which consists in mixing absolute and methylic alcohols, their compounds or mixtures, or either of said alcohols or compounds jointly or separately with water in equal proportions for small boilers, and for large boilers six (6) parts water to four (4) parts absolute or methylic alcohols, their mixtures or compounds, and modifications and variations of such proportions, and subjecting the same to heat in engine boilers the same as water is heated to generate steam, substantially as described. 3rd. A compound vapor generated by heat in boilers from water and alcohols, kind or name, methylic, the alcohol of commerce or of any other compounds mixed in the following proportions: in small boilers i.e., boilers of from two (2) to twenty (20) horse power, equal parts of water, of alcohol or their mixtures or compounds; in large boilers i.e., boilers of twenty (20) horse-power and upward, six (6) parts water and four (4) parts alcohol or alcohols, their mixtures or compounds, and the modifications and variations of said proportions, substantially as set forth and described. 4th. The improved method or process of operating steam or vapor engines, which consists in applying thereto the compound vapor herein described and claimed, substantially as set forth.

No. 19,216. Wire Fence Fastener.

(*Clou à Oeillet pour Clôture Métallique.*)

Charles E. Griffith, Storm Lake, Iowa, U.S., 29th April, 1884; 5 years.

Claim.—1st. A fastening for wire fences, consisting of a spiral eye secured on one end of a screw or pin, substantially as herein shown and described. 2nd. A fastening for wire fences, consisting of a screw-threaded shank a, and a spirally curved eye b having an off-set and lapped end to form an outlet from the eye, substantially as shown and described. 3rd. The combination, with a wire fence cable or strand, of the fastening A consisting of a screw-threaded shank a, and a spirally-curved eye b having an off-set and lapped end, substantially as shown and described.

No. 19,217. Lasting Machine.

(*Machine à Enformer.*)

Jan E. Matzeliger, Lynn, Mass., U.S., 29th April, 1884; 5 years.

Claim.—1st. In combination with the jack, the disk F having cam groove and supporting the jack, the arm D, plate F and lever 22, said pincher-rotating devices in, connection with devices for putting the last, in combination with mechanism, substantially as described, for moving said spur vertically and laterally to feed the last, substantially as described. 3rd. The feeding-spur 28 on lever 29, in combination with sliding block 31, rod 33, bell crank lever 34, spring 35 and cam P, and with rod 36, bell crank-lever 37, and described connections of said lever, with the grooved cam, all substantially as described. 4th. The combination of the holding-spur 40, and its mechanism for giving it vertical and horizontal movement, whereby its last is held while the feeding-spur moves back, all substantially

as set forth. 5th. In a shoe-lasting machine, the combination, with a movable rack, a feeding-spur and the holding-spur for automatically moving the last step by step and for holding it in position, of the pinchers and three separate trains of mechanism, substantially as described, for raising and lowering said pinchers, for moving them laterally, and for opening the jaws, whereby the upper is stretched upward and carried over upon the last, all substantially as described. 6th. The combination of the pivoted shank carrying the lower jaw, mechanism for moving it vertically, a shank carrying the upper jaw and sliding in the first shank, a spring for holding the upper jaw down to grip the leather, and mechanism to raise it to release the leather, a guide block and devices for swinging the pinchers laterally, all substantially as described. 7th. The combination of pinchers provided with mechanism for causing them to grip the leather and draw it over the last, and mechanism for turning the pinchers at the toe and heel of the shoe, and a rotary jack and suitable connecting mechanism whereby the upper is drawn over and plaited, substantially as described. 8th. The combination of pinchers provided with mechanism for gripping the leather and drawing it over the last, mechanism for turning said pinchers, and connecting devices between said turning mechanism and the jack, whereby the turning of the jack to bring the toe or heel to the gripper causes the turning mechanism to operate, all substantially as described. 9th. The combination of pinchers provided with mechanism for gripping the leather and drawing it over the last, mechanism for turning said pinchers to right or left, connecting devices between said turning mechanism and the jack, said connecting mechanism being operated by a cam provided with a groove connected to the jack, whereby when the toe or heel is passing the gripper, the gripper is made to turn first in one direction and then in the other, all substantially as described. 10th. The combination of the pinchers adapted to operate on the upper, substantially as described, a pinion on the shank of the pivoted jaw, a rack-bar connected to a lever, and slotted head or loop 97, a pin 98 in said loop connected by bars and levers to a grooved disk connected to the jack, whereby the pin is held in central position in the head, when the pinchers are operating on the sides of the last, and is passed toward one end and then the other, when the pinchers are passing around the toe or heel, a pivoted block 100 provided with an arm 102, and mechanism for turning the said block, all as set forth. 11th. The shank 46 of the lower jaw, in combination with the shank carrying the movable jaw and with lever 51 and suspending spring 52, substantially as described. 12th. The shank 46 carrying lower jaw shank 48 and movable jaw, both suspended on pivot and spring on lever 51, in combination with post 88 and lever 87, and the connecting and driving mechanism, substantially as described. 13th. The post 88, supporting lever 51 and the pinchers, in combination with the spring 56 and the operating mechanism, substantially as described. 14th. In combination with the guide-block 58, the prongs 59, bar 61, yoke 63, interposed spring 61 and devices for imparting positive movement to the guide-block, substantially as described. 15th. The pinchers mounted on the main frame of the machine, and having jaws constructed and operated as described, in combination with the guiding-jaws also on the main frame and with the jack arranged to turn in relation to the guiding-jaws and pinchers, substantially as described. 16th. The guiding-jaws having rollers in said jaws, in combination with mechanism, substantially as described, connecting said rollers to the driving power, and with the pinchers, whereby the edge of the upper is guided in proper position in relation to said pinchers and moved with the jack, substantially as described. 17th. The combination of the fixed and movable jaws M, N and spring 70, the rollers 71 and 72, the shafts and the intermediate gearing, all substantially as described. 18th. The combination of the shank 48 and upper jaw sliding on shank 46, with lower jaw collar 85, spring 84, rod 86, bell crank lever 87 and connections with the driving mechanism, substantially as described. 19th. The pinchers adapted to grip and draw the upper over the last and to turn for plaiting the upper, and mechanism for imparting the necessary motion to said pinchers, in combination with tacking located by the side of the said pinchers, all substantially as described. 20th. In combination with the channel and the tack driver, the stops 124, 125, placed one above the other and provided with projections, whereby they are operated by the descent of the driver, substantially as described. 21st. In combination with the channel stops and driver, the slotted spring tripper 128, substantially as described. 22nd. The combination of the tripper, the tube drivers and spring guides 130, substantially as and for the purposes described. 23rd. The combination of feeding and holding spurs, the pinchers and guiding mechanism and the rollers 121, substantially as described.

No. 19,218. Traps for Water Closets, Lavatories, &c. (*Trappe pour Latrines à Peau, Lavoirs, &c.*)

Joseph Bendor, Philadelphia, Pa., U.S., 29th April, 1884; 5 years.

Claim.—1st. A trap having an eduction pipe provided or formed with an elongated or enlarged mouth, and a loose sealing ball or valve, substantially as and for the purpose set forth. 2nd. A trap having an eduction pipe provided or formed with an elongated or enlarged and contracted mouth, substantially as and for the purpose set forth. 3rd. A trap having an eduction pipe provided or formed with an elongated or enlarged contracted mouth, and a loose ball or valve, substantially as shown and described. 4th. A trap having an eduction pipe provided or formed with an elongated or enlarged contracted mouth, and a loose ball or valve comprising a ball within a ball, substantially as shown and described. 5th. A trap comprising a separable valve chamber, fastening devices therefor, an eduction pipe having an elongated or enlarged and contracted mouth, and a loose ball or valve, substantially as shown and described. 6th. A trap having an eduction tube provided with an elongated or enlarged contracted mouth, and loose ball or valve, a rotating globular-shape valve chamber, with or without a ventilating pipe fixed or swiveled thereto, substantially as shown and described. 7th. A trap having a loose ball or valve, an elongated or enlarged and contracted mouth for its eduction pipe, and a branch tube with float valve, substantially as and for the purpose set forth. 8th. A trap having a loose ball or valve, an elongated or enlarged and contracted pipe, an

and for the purpose specified. 4th. The combination of the chambers A, A, water pipes I, I, steam pipes E, E, centre-block B, valve-sleeve D, tubular valve C, water-tube J and steam-tube H, said valve-tube and valve-sleeve being provided with the several sets of inlet and outlet ports, as set forth. 5th. The combination of the sleeve D provided with ports F₁, F₁, valve-tube C, provided with water-chambers H₁, and two ports K₁ adapted to communicate with ports L₁, L₁, and water-chamber A, A, pipe J₁ J₁ being provided with perforated discharges, substantially as and for the purpose specified. 6th. The combination of sleeve D provided with ports D₁, D₁, valve-tube C provided with two ports C₁, said ports being adapted to communicate with said ports D₁, D₁, tubes E₁, E₁ and chambers A, A, as set forth. 7th. The combination of the chambers A, A, tubes I, I, centre-block B, sleeve D, valve-tube C, chambers A₁, H₁ and G, the tube C having the steam-pipe H, passing inside of it to chamber G, and pipe I₁ passing inside of it to chamber H₁, and pipe C₁ passing inside of it to chamber A₁, valve tube C and valve sleeve D being provided with two sets of outlet and two sets of inlet-ports *d, d* and *a, a*, steam-ports F₁, F₁, air ports C₁ and D₁, and water-ports L₁, L₁, said ports being respectively adapted to alternately communicate with the respective water-chambers, as set forth.

No. 19,228. Obtaining Motive Power and Apparatus therefor. (*Manière de Produire la Force Motrice et Appareil pour cet objet.*)

Emil Schramm, Benjamin Hewitt and Louis Schramm, Birmingham, Eng., 30th April, 1884; 5 years.

Claim.—1st. The method, herein described, of obtaining motive power by means of one or more vessels filled with water or other fluid, such vessel or vessels being in communication with the corresponding number of vessels in a state of vacuo, heat being applied alternately to the vessels, as hereinbefore described. 2nd. The combination, with a number of vessels containing water or other liquid, of a body of heat generated by gas, coal, coke or other suitable fuel and automatically turned on or off by the apparatus or otherwise, so as to force the water or any other fluid from one vessel to its corresponding opposite vessel, in a state of vacuo, substantially as hereinbefore described. 3rd. Utilizing the flow of water or other fluid as it is forced from one vessel to the other, in the manner hereinbefore described, for producing motive power either reciprocating or rotating, as hereinbefore described. 4th. The improved apparatus for producing reciprocating motion, the said apparatus being arranged and operating, substantially as hereinbefore described and represented in figure 1 of the drawing. 5th. The improved apparatus for producing rotary motion, the said apparatus being arranged and operating, substantially as hereinbefore described and represented in figure 2 of the drawing.

No. 19,229. Car Axle Lubricator. (*Graisneur d'Essieu de Char.*)

Samuel A. Flower and Philip Ross, Jersey, N. J., U. S., 30th April, 1884; 5 years.

Claim.—1st. A fibrous packing for car axle boxes consisting of cocco-nut or other resilient fibre, and jute or equivalent absorbent fibre, in combination, substantially as described. 2nd. A fibrous packing for car axle boxes consisting of combined cocco-nut or other resilient fibre, and jute fibre or other equivalent absorbent woolly fibre, chemically treated with caustic alkali for the removal of the natural resinous and gumming matters of the fibres, substantially as described.

No. 19,230. Street Railway Structure and Car Therefor. (*Voie et Char de Chemin de Fer Urbain.*)

Orel D. Orris and Nelson B. Adams, New York, N. Y., 30th April, 1884; 5 years.

Claim.—1st. A street railway structure consisting of two parallel tunnels having in their upper parts narrow continuous slots for communication with the street surface, and two rails of a railway track laid one in each of said tunnels, substantially as and for the purposes set forth. 2nd. A street subway structure in which are communicating two parallel tunnels near the street surface, each communicating with the said surface through a narrow longitudinal slot, and containing one of the two rails of a railway track, and in which are also provided one or more additional tunnels arranged adjacent to, and extending parallel with, said track tunnels, substantially as and for the purpose set forth. 3rd. A street subway near its surface with four tunnels, each communicating with the surface through a narrow longitudinal slot, two of said tunnels on one side being parallel with each other, and each containing one of the two rails of a railway track, and the two tunnels on the other side being likewise parallel with each other, and each containing one of the two rails of a second track, and with a third tunnel arranged in, or beneath the space between the two tracks, substantially as set forth. 4th. The combination, with a street railway structure consisting of two tunnels D, D having slots *d, d*, and each containing one of two track rails C, C, of a tunnel N arranged beneath the said tunnels D, and transverse ties or frames E, E extending under and around the tunnels D, D, and arched over the tunnels N, substantially as set forth. 5th. The combination of two parallel tunnels provided with slots in their upper parts, rails laid in said tunnels, and a car provided with wheels adapted to run on said rails and connected to said wheels by plates adapted to travel in said slots, substantially as set forth. 6th. The combination of two parallel tunnels provided with slots in their upper ends, rails laid in said tunnels, a car provided with wheels adapted to run on said rails and connected to said wheels by plates adapted to travel in said slots, brakes applied to said tunnels, and brake operating bars passing through said slots, substantially as herein described. 7th. The car H provided with wheels I, I connected to it by plates J, J, in combination with brake-shoes *g, g*, bars *h, h* working in said plates, and mechanism for pressing

said shoes against the wheels through the medium of said bars, substantially as set forth. 8th. The combination of two parallel tunnels provided with slots in their upper parts and containing both rails and traction ropes, a car provided with wheels adapted to run on said rails and connected to said wheels by plates adapted to travel in said slots, rope gripping devices attached to said car, and operating bars for said gripping devices, passing through the said slots, all substantially as herein described.

No. 19,231. Manufacture of Cartridge Shells. (*Fabrication des Boites de Cartouches.*)

G. Moore Peters, Xenia, Ohio, U.S., 30th April, 1884; 5 years.

Claim.—1st. The process of making cartridge shell from paper pulp, which consists in pouring said pulp into a mold enlarged vertically and circumferentially at the bottom to form the base of the shell, and having an internal tube slightly tapered on its outer surface and rounded at the bottom, and a piston for forcing the pulp into the mold, whereby the body of the shell is formed in said mold, substantially as set forth. 2nd. A mold for making cartridge shells from paper pulp consisting of the internal cylinder and sides having a tapered opening between them, and a base provided with means for forming a seat for the primer, and an opening through the base into the charge, as set forth. 3rd. A cartridge shell made of paper pulp compressed or moulded, and provided with a thickened base and a flange, and a seat for the primer, as set forth.

No. 19,232. Hay Elevator and Carrier. (*Monte-Foin.*)

Frank B. Strickler and P. G. Strickler, Jamesville, Wis., U. S., 30th April, 1884; 5 years.

Claim.—1st. In a hoisting apparatus, the combination, with pivoted jaw or catches, of a key or wedge, constructed and arranged substantially as described, whereby the jaws are held apart to receive the tackle, said key being adapted to drop between said jaws to effect an automatic locking of the tackle, substantially as set forth. 2nd. In a hoisting apparatus, the combination, with a movable carriage of two jaws or catches pivotally secured thereto, a gravity wedge or key arranged above said jaws, and a hoisting-tackle adapted to strike said jaws, to drop the wedge or key between the latter to lock the tackle thereto, substantially as set forth. 3rd. The combination, with rail or way and a carriage adapted to travel thereon, of a tackle and means, substantially as described, whereby the carriage is held stationary and the tackle locked to the carriage automatically, and the tackle is unlocked and released simultaneously, substantially as set forth. 4th. The combination, with a rail or way provided with a plate formed with cam-grooves, of a movable carriage having wheels adapted to travel on said way, a slotted key having lugs adapted to enter said cam-grooves, and two jaws pivotally secured to said carriage below the key, and a hoisting tackle adapted to be automatically locked by said jaw and key by contact with the latter, substantially as set forth. 5th. The combination, with a track or way having a cam-plate secured thereto, of a carriage adapted to travel on said way, a hoisting-ropes secured at one end to said carriage and passing around the sheave of a tackle-block, and then over a friction-pulley mounted within the carriage, pivoted jaws or catches, secured within the carriage and having inwardly projecting arms and inwardly-curved ends, and a key or wedge having lugs adapted to enter the grooves of the cam-plate, and having an elongated slot through which a fastening bolt passes, said key being adapted to engage the notched upper ends of the jaws and be dropped between said jaws, to allow the latter to grapple the hooked end of the tackle-block, substantially as set forth. 6th. In a hoisting apparatus, the combination, with a carriage gravity wedge and tackle, the latter being provided with a looped end, of pivoted jaws whose upper ends are notched to engage said key, and whose lower ends are bevelled, said jaws having inwardly projecting arms, which receive the thrust of the tackle and upon which the key rests when the tackle is locked, substantially as set forth.

No. 19,233. Dust Pan. (*Porte-Ordure.*)

John S. Folsom, (Assignee of Nehemiah P. Folsom,) Brooklyn, N. Y., U. S., 30th April, 1884; 5 years.

Claim.—A dust pan, the forward edge of which consists of a blade of elastic material secured to, and forming a continuation of the body of the pan, as set forth.

No. 19,234. Switch Board for Electric Circuits. (*Table de Commutateur pour Circuits Electriques.*)

The Bell Telephone Company, Montreal, Que., (Assignee of Francis Blake, Weston, Mass., U.S.,) 30th April, 1884; 5 years.

Claim.—1st. Alternate strips or long plates of conducting and non-conducting material put together in a mass, and a number of line terminals, in combination with a number of conducting-rods, one for and in constant contact with, each contact, whereby it may be put in electrical connection with either of the said strips or plates of conducting material, substantially as described. 2nd. The combination, with alternate plates of conducting and non-conducting material, put together in a mass and provided with holes extending through the mass, of a number of metallic rods each secured in one of said holes but having a longitudinal movement, substantially as described. 3rd. The combination, with the conducting plates C and insulating plates *i* provided with the holes *h*, of the line terminals *t* and rods *r*, the latter provided with spring contact *e*, substantially as described. 4th. The combination, with the conducting plates *e* and insulating plates *i* provided with the holes *h*, of the line terminals *t* and rods *r*, the latter provided with spring contacts *e* and pointers *p*, substantially as described.

No. 19,235. Band Cutter and Feeder for Threshing Machines. (*Coupe-Hart et Alimentateur pour Machines à Batire.*)

Joseph A. Marshall and Flavius H. Marshall, Darlington, Ind., U.S., 30th April, 1884; 5 years.

Claim.—In a band-cutter and feeder for threshing machines, the combination, with the hinged carrier-frame, the rotary band-cutter *u*, the endless apron, the rotary feeder or shaker *v* having its bearings in the projecting ends of the side rails of the carrier-frame, the short arms *z*, the inclined chute and operating mechanism, substantially as specified.

No. 19,236. Flushing Device for Water Closets, Urinals, &c. (*Nettoyeur pour Latrines, Urinaux, &c.*)

William Farmer, Hamilton, Ont., 30th April, 1884; 5 years.

Claim.—1st. The combination of valve box A, angle valve B, valve stopper *e*, as and for the purpose hereinbefore set forth. 2nd. The combination of the siphon C, D, valve box A and angle valve B, as and for the purpose hereinbefore set forth.

No. 19,237. Dust Pan. (*Porte-Ordure.*)

Francis W. Carpenter, Harrison, N.Y., U.S., 30th April, 1884; 5 years.

Claim.—1st. The combination, with the dust pan *b*, of the handle *c*, bail *f* and rod *h*, as and for the purposes set forth. 2d. The combination, with the dust pan *a* and rest *b*, of the handle *c* and bail *f*, the said bail being pivoted to said pan *a* on the sides of the same, and between the front edge *e* and the rest *b*, as and for the purposes set forth. 3rd. The combination, with the dust pan *a* and rest *b*, of the long handle *c*, the bail *f* pivoted to the sides of the pan *a*, the hooked rod *h* hinged to the back of the pan and connected to the eye *e* or *e* upon the handle *c*, as and for the purposes set forth. 4th. The combination, with the dust pan, of a rest beneath the back portion to raise the same, and a handle secured to the pan between the front edge and said rest, whereby the pressure on the handle causes the edge to set closely to the floor, substantially as specified. 5th. The combination, with a dust pan, of a bail connected to the same between the front edge and the back, and a handle upon such bail, whereby the pressure upon the handle causes the front edge of the pan to set closely to the floor, substantially as specified.

No. 19,238. Traction Engine for Tram, Rail, or other Roads. (*Machine de Traction pour Chemins à Ornières ou Autres.*)

William Wilkinson, Wigan, Eng., 30th April, 1884; 5 years.

Claim.—1st. In traction engines for tram, car or other purposes, the combination, with receivers and a settling tank external to the boiler, and a super-heating vessel in the fire box, of a pyramidal series of perforated escape pipes therefrom in the funnel, to super-heat, distribute and render invisible the waste steam from the engines and act as a spark-arrester, substantially as described. 2nd. In traction engines for tram, car or other purposes, the alternative combination, with receivers and settling tank external to the boiler, and a super-heating vessel in the fire box, of an annular steam escape pipe in the uptake, surrounded inside and out by the hot gases from the furnace, passing through an interior optionally coned funnel and the ordinary uptake, substantially as and for the purposes described. 3rd. In traction engines for tram, car or other purposes, the combination, with the annular escape pipe, as in claim 2, of a live steam internal jet and external perforated ring jet about the mouth of the said escape pipe, and in alternative communication with the boiler and engine steam pipe, substantially as and for the purposes described. 4th. In traction engines for tram, car or other purposes, the combination, with a high speed porter or other governor, of a reversing clutch and automatic valves to effect by a steam or hydraulic apparatus the automatic braking and reversal of the engines, substantially as described. 5th. In traction engines for tram, cars or other purposes, the construction of geared wheels upon the centres of the fixed crank shaft and spring-pressed driving axle respectively, the teeth of which are rounded on their bearing faces across the wheels, so as to allow the free cross winding of the spring-pressed axle relatively to the crank shaft, substantially as described. 6th. In traction engines for tram, cars or other purposes, the construction of the vertical boiler with one or more concentric rows of field tubes surrounding the uptake, enlarged in diameter below their necks, so as to closely approximate to each other, to prevent the passage of sparks, substantially as described. 7th. In traction engines for tram, cars or other purposes, the combination of all or any of the preceding subordinate claims to form a noiseless and efficient public road engine, substantially as described.

No. 19,239. Process for the Manufacture of Gelatine or Glue from Hides, &c. (*Procédé de Fabrication de la Gélatine ou de la Colle avec des Peaux Vertes, &c.*)

Jean A. Mathieu, Detroit, Mich., U.S., 30th April, 1884; 5 years.

Claim.—1st. The process of separating gelatine from the substance specified by treating them with methylic alcohol, whereby the fatty portions are removed, and then treating the residue with acetic acid, whereby the albuminous and osseous portions are removed, substantially as specified. 2nd. The process of receiving methylic alcohol from combination with fatty matter, by precipitating such fatty matters by means of cold water and distilling the alcohol at a low temperature from the aqueous solution, substantially as specified. 3rd. The process of recovering acetic acid from its combination with albuminous and osseous matter, by treating the compound with subacetate of lead, filtering the liquid residue through charcoal and subsequently decomposing such residue, substantially as specified. 4th. The combination of the vessel A having necks B and D, with the end-

less chain *i*, and the pivoted shelves G, substantially as specified and shown.

No. 19,240. Lubricator. (*Graisneur.*)

John C. Thayer, Chicago, Ill., U.S., 30th April, 1884; 5 years.

Claim.—1st. In a lubricator, the valve provided with a stem having an elongated opening, in combination with the right angled lever having a fixed pivot bearing in its angle, its perpendicular arm weighted at the upper end, and its other arm working loose in the elongated opening in the valve stem, substantially as described. 2nd. The reservoir and the valve provided with a stem having a bearing at each extremity of the reservoir, in combination with an angular lever connected with said stem and having a fixed pivot bearing in its angle, and its perpendicular arm weighted, substantially as described. 3rd. The reservoir, the valve seated in the bottom thereof, the valve stem extending the length of the reservoir, and an angular lever pivoted in its angle for automatically actuating said valve, in combination with a filling plug provided with an axle bore receiving said stem, and an adjusting screw working in said plug, substantially as and for the purpose described.

No. 19,241. Dynamo-Electric Machine. (*Machine Dynamo-Electrique.*)

Charles Richter, Camden, N.J., U.S., 30th April, 1884; 5 years.

Claim.—1st. In a dynamo-electric machine, the stationary magnets consisting of two convex-concave sides having lateral flange-shaped projections, which form cores upon which are wound exteriorly the magnet helices, and the air-ways *e*, *c*, the whole as shown and described and for the purpose set forth. 2nd. In a dynamo-electric machine, the stationary magnets consisting of two convex-concave sides having lateral flange-shaped projections, which form cores upon which are wound exteriorly the magnet helices, the air ways *e*, *c*, and the opposite polar extensions *d*, *d*, as described and for the purpose set forth. 3rd. In the armature of a dynamo-electric machine, the arrangement of an iron wire core upon the naked ribs of a spider, said core having pins *i*, *i*, leaving the air spaces *i*, *i*, as and for the purpose set forth. 4th. In the armature of a dynamo-electric machine, the consecutive series of concentric iron wire rings placed upon the periphery of the core, these rings having radial projections leaving intervening channels for the reception of the inducing coils, as shown and described. 5th. In a dynamo-electric machine, and section of the indicator *o* with the movable brush-holding frame, and in conjunction with such indicator, the scale *p*, as described and for the purpose set forth. 6th. In a dynamo-electric machine, the stationary magnets consisting of two sides, each in a single piece, constructed with slots *e*, to admit air, and provided with flanges *c* upon which helices are wound, substantially as set forth. 7th. In a dynamo-electric machine, the stationary magnets consisting of two concavo-convex sides provided with inwardly extending flanges *c* upon which helices are wound and polar extensions *d*, each of said polar extensions being attached to two or more of the flanges *c*, substantially as set forth.

No. 19,242. Safety Valve. (*Souape de Sureté.*)

Alexander Orme and Lyman I. Todd, Chicago, Ill., U. S., 30th April, 1884; 5 years.

Claim.—1st. The case D, in combination with the cap J, the spindle C and valve A, the cap J being connected with the case so as to turn thereon, and turn the spindle C and valve A, substantially as and for the purpose specified. 2nd. The case D, in combination with the cap J, nut K, spindle C and valve A, and lever R for raising the valve from its seat to blow off the steam in the boiler, as specified and shown. 3rd. The combination of the case D, cap J and cap L, and the valve spindle C, as and for the purposes specified. 4th. The valve A, in combination with the continuous spindle C extending through the spring and top of the case, the socket spindle H and the spring P, substantially as and for the purpose set forth.

No. 19,243. Revolving Chart and Map Stand. (*Porte-Charte Tournant pour Cartes Géographiques et Autres.*)

Henry E. Hayes, Brooklyn, N.Y., U.S., 30th April, 1884; 5 years.

Claim.—1st. A revolving chart and map stand, constructed substantially as herein shown and described, and consisting of the base block A having screw rod B, and nuts C, D and triangular socket E, the revolving top block H having sockets I, the triangular wedge block G, and the supporting and suspension rods F, K, M, as set forth. 2nd. In a revolving map and chart stand, the combination, with the base block A, having screw rod B and triangular socket E, and the nut C, supporting rods F of the triangular wedge-block G and the nut C, substantially as herein shown and described, whereby the said block and rods can be firmly connected, as set forth. 3rd. In a revolving map and chart stand, the combination, with the base block A having screw-rod A, of the revolving block H having sockets I, to receive the upper supporting rods K and the nuts D, substantially as herein shown and described, whereby the suspended map or chart can be readily turned to face in any direction, as set forth. 4th. In a revolving map and chart stand, the combination, with the upper supporting rods K having bent upper ends, of the suspension-rod M, having eyes L and bent ends, and provided with slide hooks N, substantially as herein shown and described, whereby maps and charts of different sizes can be readily suspended, as set forth.

No. 19,244. Rock Drill. (*Foret de Mine.*)

Henry C. Sergeant, Denver, Col., U.S., 30th April, 1884; 5 years.

Claim.—1st. In a rock drill in which the exhaust port is controlled by the piston, the combination of the ported cylinder and the piston with a fluid controlling valve actuated by the inflowing fluid when the compression is made on the exhaust end of the cylinder, substantially as shown and described. 2nd. The combination, with the cylinder B,

having supply ports *e, et*, and an exhaust port *g* between said supply ports, of the piston *D* having a movement across, and considerably beyond the said exhaust port at each stroke, and the automatic valve *B*, movable between the valve seats *e2, e3*, for controlling the admission of a motive agent to said supply ports *e, et*, substantially as described. 3rd. The combination, with the cylinder *B*, having supply ports *e, et*, and an exhaust port *g*, between said supply ports, of the piston *D*, having a movement across and considerably beyond the said exhaust port at each stroke, and the automatic valve *H*, movable between the valve seats *e2, e3*, and provided with the disks *J6*, upon which the motive agent acts to move the valve, substantially as herein described. 4th. The combination of the cylinder *B*, the head *B1*, the follower *F*, and bolts *F1* connecting said head and follower, and the head *B1*, having its diameter slightly larger than the cylinder, and *F* rigidly secured to the cylinder, and forming a cylindrical guide, wherein the said head *B2* and follower *F* may move, and the cushion *E1* arranged in said guide *E*, between the head and follower, substantially as herein described. 5th. The combination, with the cylinder of a rock drill, of a piston having a head or extension which is spirally grooved externally, and a spring actuated nut section engaging with the spiral grooves of the piston head or extension, and capable of being forced back by the action of the motive agent upon its face or inner end to free it entirely from the spiral grooves of said piston head or extension, substantially as and for the purpose herein described. 6th. The combination, with the cylinder of a rock-drill, of a piston head or extension having a spirally grooved exterior, a spring actuated nut-section engaging with the spiral grooves of said head or extension, and capable of being forced back by the pressure of the motive agent upon its face, to free it entirely from said spiral grooves, and a stop for limiting the inward movement of said nut section, substantially as and for the purpose herein described. 7th. The combination of the cylinder *B*, having the transverse socket or slideway *B3*, provided with the shoulder *d3*, the spirally grooved piston extension *D2*, the movable nut section *G*, engaging with the grooves of said piston extension, and provided with the shoulder *d2*, the spring *d1*, and the plug *d*, engaging the outer end of said socket or slideway *B3*, substantially as herein described. 8th. The combination, with the piston-rod *D1*, of the longitudinally divided cylinder-head *B1*, having the annular packing groove *A*, and the tangential aperture *A1*, substantially as herein described. 9th. The combination, with the chuck *D2*, and the drill rod *I* fitting therein, of the bolts *I1* having their heads formed with the concave-bearing surfaces *i*, inserted through the chuck from opposite sides, and serving to clamp the drill rod at diametrically opposite points, substantially as herein described.

No. 19,245. Safety Self-Closing Shunt Switch for Electric Lamps, Motors, &c.
(*Commutateur Automatique de Sécurité pour Lampes, Moteurs &c., Electriques.*)

Elihu Thomson, Lynn, Mass., U.S., 30th April, 1884; 5 years.
Claim.—1st. The combination, with an electric lamp or other apparatus, as described, in circuit with a generator or source of electricity, of a shunting-switch, circuit-closing devices for closing the shunt actuated or controlled by the effects of the electric current, which may flow in the shunt, after the opening of the shunting-switch, substantially as and for the purpose described. 2nd. The combination, with an electric lamp or other apparatus, as described, of a shunting-switch, devices for closing said shunt, and means for actuating or allowing the operation of said devices, as to complete a shunt-circuit upon the passage of a current across the contacts of the shunting-switch on opening the same. 3rd. The combination, with an electric lamp or other apparatus, as described, of a shunting-switch, devices for automatically bringing the contacts of said switch together in case the current continues to flow in the shunt after the switch is opened, or the operation of such devices upon the switch being controlled or affected by the agency of the current flowing, substantially as and for the purpose described. 4th. The combination, with an electric lamp or other apparatus, as described, of a shunting-switch, devices for restoring said switch to a closed position when it is opened, and means for bringing said devices into operation to close said switch upon the passage of a current across the switch contacts, at the time of opening the switch. 5th. The combination, with an electric lamp or other shunting apparatus, as described, of a shunting-switch, means for restoring said switch to a shunting position, and a helix in or connected through said circuit, so as to be energized when a current passes through said shunt, and controlling the operation of the restoring mechanism, so as to prevent said switch from remaining in opened position while current is formed across the contacts by reason of the rupture or imperfection of that portion of the general circuit containing the lamps. 6th. The combination, with an electric lamp or other mechanical apparatus, of a shunt-switch, a device, magnet, or mechanical, for closing said switch automatically, and an electric coil in the shunt-circuit controlling the action of the closing device, and causing or allowing the operation of said device to immediately re-close the switch whenever, on opening the same, the main or principal circuit is interrupted or defective, so as to cause a current to pass the switch-contacts as they are separated. 7th. The combination, with an electric lamp or other apparatus, as described, of a shunting-switch, a spring or equivalent motor tending to close the switch, a detaining device for holding the said switch open, and means for controlling the action of said detaining device, in the manner described, so as to release the switch whenever a current flows across the switch contacts on opening the switch. 8th. The combination, with an electric lamp or other apparatus in circuit with a suitable source of electricity, of a shunting-switch, a spring or equivalent device tending to close the switch, a catch for engaging with the switch and holding it open when said switch is thrown back to break the shunt, and suitable means, as described, for holding the catch away from the point where it will engage with the switch, energized or rendered operative for the purpose, by the current which flows through the shunt across the switch-contacts when the switch is turned to break the shunt. 9th. The combination, with an electric lamp or other device, in circuit with a suitable source of electricity, of a shunting-switch for said device, a spring or its equivalent tending to close the switch, a catch for engaging with the switch when it is thrown to break the shunt, and

an electro-magnet connected to the shunt circuit, so as to be energized when the current passes the separated contacts of the switch, and when so energized, holding the catch away from its engaging position.

No. 19,246. Appliance for Clothes Lines.
(*Porte-Ligne d'Etendage*)

Félix L. D. Pearson and Fardina Bouchard, Montreal, Que., 30th April, 1884; 5 years.

Claim.—1st. The combination of the pulleys *C* and *D*, line *G* *G* *T*, pulleys *H* and loop *K*, constructed, arranged and operated substantially as shown and described. 2nd. The combination of the pulley *C*, pulley *D* having crank handle *F*, line *G* *G* *T*, pulleys *H* and loops *K*, the whole substantially as shown and described.

No. 19,247. Removable Post for Horse Power and other Transmitters and Connecting Means. (*Posteau Mobile pour Manèges et autres Moteurs, et Moyens de raccordement*)

Frank B. Bignell, Smyrna, Mich., U. S., 30th April, 1884; 5 years.

Claim.—1st. The combination of the post *H*, plate *L* having wings *L1*, the sweep *N* and staples *I*, all suitably united, substantially as described, and for the purposes set forth. 2nd. The combination of the post *H*, plate *L* having wings *L1*, the staples *I* and bolts *J*, *K*, the staples being secured to the sweep and plate *L*, in the manner and for the purposes specified. 3rd. The combination of the post *H*, provided on its underside with the plate *E* and stud *F*, and having the plate *A* and studs *B* on its upper end, the plate *C* having notches *C1*, and shaft *D1*, substantially as described, and for the purposes set forth. 4th. The combination of the post *H*, provided on its upper end with the curved flanges *A1* and studs *B*, the notches *C* of plate *C* and shaft *D1*, substantially as described and for the purposes set forth. 5th. The combination of the post *H*, provided with stud *F* on its underside, and having the circular flanges *A1* and studs *B* on its upper side, the plate *G* having opening *G1*, the notched plate *C* and shaft *D1*, substantially as described, and for the purpose set forth.

No. 19,248. Grain Harvesting Machine.
(*Moissonneuse.*)

Calvin Young and David M. Osborne, Auburn, N. Y., U. S., 30th April, 1884; 5 years.

Claim.—1st. In combination with removable truck wheels, a harvester frame, a main wheel therein, and intermediate mechanism, substantially as described, forming a permanent connection between the wheel and frame and acting to raise either in respect to the other, and locking devices, whereby said mechanism may be caused to retain the frame upon the wheel, or to suspend the wheel within the frame at will. 2nd. In combination with the main frame and rack plates, the main wheel, the axle provided with pinions and chain-wheel, the endless chain, the actuating wheel therefor, and the two alternately acting automatic pawls adapted to lock said actuating wheel against rotation in opposite directions. 3rd. In combination with removable truck wheels, substantially as described, a harvester frame, the main wheel, the main axle, the rack plates and pinions connecting the axle with the frame, the endless chain, the chain wheels to actuate and hold the axle, the means, substantially as described, for locking the chain against motion in each direction. 4th. In combination with removable truck wheels, the harvester frame provided with rack plates to receive the axle, the main wheel, the axle provided with the pinions and chain-wheel, the endless chain, the chain-wheel on the frame, and the two alternately acting pawls, whereby the parts may be locked against motion in opposite directions alternately.

No. 19,249. Device for Preventing Lost Motion in Drawheads and Buffers.
(*Appareil pour Empêcher la Perte de Mouvement des Barres de Traction et des Tampons.*)

William B. Turner, New York, N. Y., John J. Mann, Jersey, N. J., and Cornelius Beard, New York, N. Y., U. S., 30th April, 1884; 5 years.

Claim.—1st. The combination, with a draw-head or buffer, a spring and its abutment, of a wedge *D*, substantially as and for the purpose specified. 2nd. The combination, with a draw-head or buffer, a spring and its abutment, of a wedge inserted between said spring and its abutment adapted to automatically take up or prevent lost motion, substantially as described. 3rd. The combination, with a draw-head or buffer, a spring and a wedge-shaped block, of a wedge *D* inserted between said spring and block, substantially as and for the purpose specified. 4th. The combination of a draw-head, a spring *a*, a wedge *D* having a recess *d*, and two inverted wedge-shaped blocks, all constructed, arranged and operating, substantially as described.

No. 19,250. Machinery for Transmitting Power. (*Mécanisme de Transmission de la Force.*)

Andrew D. Whitten, George Rice and Hans P. Hougen, Philadelphia, Pa., U. S., 30th April, 1884; 5 years.

Claim.—1st. The shaft *C*, in combination with the loose pulleys *A*, *B*, the gear wheels *F*, *G*, connected with said pulleys, and gear wheels *H*, *J*, rotating with said shaft *C* and gearing with the wheels *F*, *G*, substantially as and for the purpose set forth. 2nd. A shaft in combination with pulleys loosely fitted thereon and carrying gear wheels, a shaft secured to the first named shaft, at a right angle thereto, and supporting loosely fitted gear wheels, which gear with the first named gear wheels, substantially as and for the purpose set forth. 3rd. The bevel wheel *F*, *G*, *H*, *J*, the driving pulleys *A*, *B*, the independent pulleys *D*, *E* and the cable, combined and operating, substantially as and for the purpose set forth.

No. 19,251. Support for Telephonic and other Instruments. (*Support pour Appareils Téléphoniques et autres.*)

Charles W. Holden, Boston, (Assignee of James Fregurtha, Malden, Mass., U. S., 30th April, 1884; 5 years.

Claim.—1st. The combination, in a stand or support for telephonic instruments, &c., having a clamp or holder W for an instrument, and a standard C, of a screw-rod D carrying said clamp, and a screw-nut E arranged to operate said rod, substantially as described for the purpose specified. 2nd. In a stand or support for telephonic instruments, &c., an arm or support carrying an instrument and attached to a screw-rod D to be swung thereon, in combination with a standard C and screw-nut E for raising and lowering said screw-rod, substantially as and for the purposes described. 3rd. In a stand or support for telephonic instruments, &c., a clamp or holder W for an instrument, jointed to an arm to be swung thereon in intersecting or crossing planes, in combination with a standard C carrying screw-nut E, and screw-rod D connected to said arm, substantially as and for the purpose described. 4th. In a stand or support for telephonic instruments, &c., a clamp or holder W for an instrument jointed to an arm to be swung thereon in intersecting or crossing planes, in combination with a standard C fixed to a suitable support and provided with a screw-nut E, and screw-rod D connecting said arm to said support, and constructed and arranged for said arms to be adjusted and also to be swung upon said screw-rod D, substantially as and for the purpose described. 5th. In a stand or support for telephonic instruments, &c., a clamp or holder W for an instrument jointed to an arm V to be swung thereon in intersecting or crossing planes, and which arm is jointed to an arm M to be swung thereon in intersecting or crossing planes, in combination with a standard C fixed to a suitable support and to which standard said arm M is connected, for adjustment relative thereto and to said support, substantially as and for the purpose described. 6th. In a stand or support for telephonic instruments, &c., a clamp or holder W for an instrument, an arm V jointed to said holder, for said holder to be swung thereon in intersecting or crossing planes, and also similarly jointed to an arm M, in combination with a standard C fixed to a suitable support and provided with a screw-nut E, and a screw-rod D connecting said arm to said support, and constructed and arranged for said arm to be adjusted, and also to be swung about the axis of said screw-nut and rod, substantially as and for the purpose described. 7th. In a stand or support for telephonic instruments, &c., a clamp or holder W for an instrument jointed to an arm V to be swung thereon in intersecting or crossing planes, and which arm is constructed to be lengthened and shortened, in combination with a standard C fixed to a suitable support, and to which standard said arm V is connected for a movement thereon, substantially as and for the purpose described. 8th. In a stand or support for telephonic instruments, &c., a clamp or holder W for an instrument and a standard, in combination with an arm V which is arranged between them and connects them, and jointed with angular joints R, S, T, U, composed of lifts *m, n, q*, and an axial pintle *t* and connecting arm M, substantially as described for the purpose specified. 9th. A stand or support for telephonic instruments, &c., composed of a clamp or holder W, joints U and T, rod V, joints S and R, arm M, swinging upon standard C, screw-rod D and screw-nut E, constructed, arranged and combined together, substantially as described, for the purpose specified.

No. 19,252. Apparatus for Working Washing Machines. (*Appareil pour faire fonctionner les machines à Laver.*)

François Godin and Arthur Vincent, Montreal, Que., 30th April, 1884; 5 years.

Résumé.—L'appareil pour donner à plusieurs machines à la fois un mouvement réciproque ci-dessus, et composé des éléments suivants, la roue motrice, un bras radiale monté sur l'arbre, une barre pivotée à ce bras et à une barre horizontale, à laquelle sont attachés les leviers des machines.

No. 19,253. Turbine Water Wheel. (*Turbine Hydrauliques.*)

William M. Mills, Dayton, Ohio, U. S., 30th April, 1884; 5 years.

Claim.—1st. In a turbine water wheel, the wheel proper having spiral concavo-convex buckets, substantially tangential to the hub and surrounded by a projecting ring, in combination with the wheel casing provided with chutes, whose bottom walls extend over said projecting ring and are bevelled or rounded, substantially as described. 2nd. In a turbine water wheel, the chutes having enlarged or flaring mouths or water-ways formed by the turned up upper walls thereof, and the bent or curved ends of the gates pivoted therein, substantially as described.

No. 19,254. Door Mat. (*Paillasson.*)

Henry T. Windt, Toronto, Ont., 30th April, 1884; 5 years.

Claim.—1st. As an improved mat, a series of wire coils linked together parallel with each other, and braced by a similar series of coils sewed into the mat at about right angles to the other coils, in combination with a stiffening bar inserted into the corners of the mat, substantially as and for the purpose specified. 2nd. A mat composed of a series of coiled wires meshed together, as specified, in combination with a bracket D having a lip *a*, substantially as and for the purpose specified. 3rd. A bracket D provided with a lip *a*, to fit over the outer edge *d* of the coiled wire mat, in combination with the hinged bracket E provided with the lip *b* and having a locking head F, substantially as and for the purpose specified. 4th. As an improved mat, a series of wire coils linked together parallel with each other, and braced by similar series of coils sewed into the mat, at about right angles to the other coils, the ends *f* of each coil being bent around the spiral body of the coil next to it, substantially as and for the purpose specified.

No. 19,255. Lace Fastener. (*Agrafe de Lacet.*)

Henry H. Porter, George A. Wade, Littleton, and Robert Burns, Grayton, N. H., U. S., 30th April, 1884; 5 years.

Claim.—1st. A lace-fastener, constructed substantially as described, consisting of an eyelet provided with a cross-bar over which the lace may be passed and then returned through the eyelet, whereby the lace is held at any point of its length, as set forth. 2nd. A lace-fastener consisting of an eyelet provided with two parallel transverse bars, one above the other, as shown for the purpose set forth.

No. 19,256. Rolling Mill. (*Laminoir.*)

John J. Roberts, Reading, Pa., U. S., 30th April, 1884; 5 years.

Claim.—1st. As a new device for the manufacture of merchant bar in iron or steel, a stepped roll void of collars, constructed as shown and described, adapted to be used in roll housings in sets of two, three or more high, substantially as and for the purposes specified. 2nd. In combination with a stepped roll, as described and applied in the manner shown and specified, a sleeve J of steel or its equivalent, upon the periphery of which is raised, or indented in reverse, the form of projection or depression to be imparted to the bar in its finished state, substantially as and for the purposes set forth.

No. 19,257. Motive Power. (*Pouvoir Moteur.*)

James F. Furlong, Rochester, N. Y., U. S., 30th April, 1884; 5 years.

Claim.—In a motive power, the combination of the spring, the driving wheel, the pulley and band connections, the crank wheel, the guide rods, the slotted cross-head, the brake and its operating screw, as shown and described and for the purpose specified.

No. 19,258. Radial Forging Machine. (*Machine à Forger Radiale.*)

Julius C. Richardson, Ilion, N. Y., U. S., 30th April, 1884; 5 years.

Claim.—1st. In a forging machine, the disk casting with the cross-shaped frame having tubular extensions, in combination with the hammers having dies, and the driving shaft with the hammer actuating cam, substantially as and for the purpose set forth. 2nd. In a forging machine, the casting frame having tubular extensions provided with the screws fitted with cheek nuts, in combination with the hammers with their shanks or stems encircled by springs bearing against shoulder upon said shanks, and against shoulders upon said driving shaft, substantially as and for the purpose set forth. 3rd. The screws, substantially as and for the purpose set forth. 4th. The driving shaft having the cam or collar having the spring bolt, in combination with the pulley, and the spring arranged in two or more coils upon the pulley-hub, with one end forming an abutment for one end of the cam bolt, substantially as and for the purpose set forth. 5th. The driving shaft having the collar or cam having the spring bolt with a lateral projection at each end, in combination with the pulley, the spring arranged in two or more coils upon the hub of the pulley with each end provided with a lateral extension, and the clutch bar with its actuating mechanism, and with one end or horn of its crescent-shaped portion, and to be thrust between the bolt and the cam or collar, substantially as and for the purpose set forth. 6th. The spring H₂, the pin H₄ and bolt H₁ arranged in the passage *h*₅, with the passage *h*₃ in the collar H, for the purpose of engaging and disengaging the hammer or cam and shaft, as and for the purpose set forth.

No. 19,259. Radial Forging Machine. (*Machine à Forger Radiale.*)

Julius C. Richardson, Ilion, N. Y., U. S., 30th April, 1884; 5 years.

Claim.—1st. The die-hammer supporting frame or casting, having radial compartment chambers for the hammers, within which the latter are capable of having movement towards a common central point, substantially as and for the purpose set forth. 2nd. The combination, with the die-hammers, of adjustable guide-blocks, substantially as and for the purpose set forth. 3rd. The die-hammers having the inwardly-flared or dovetailed sockets, in combination with the eccentric arms having their tapering portions provided with spherical shoulders or extremities, and the bisected dovetail-socketed boxes, substantially as and for the purpose set forth. 4th. The die-hammers having longitudinal grooves and dovetailed sockets with the outwardly or oppositely flared recesses, in combination with the eccentric shafts, the eccentric and the eccentric-arms having at the ends of their portions spherical shoulders or balls embraced by bisected or two-part dovetailed boxes having ball-sockets, substantially as and for the purpose set forth. 5th. The die-hammers with the ing arms, ball and socket jointed thereto, in combination with the eccentricities and their shafts provided with gear-wheels driven by a single common pinion and shaft, substantially as and for the purpose set forth. 6th. The die-hammers connected to eccentricities, substantially as and for the purpose set forth. 7th. The eccentric arms connected to the die-hammers and embracing eccentricities, and having parallel projections provided with adjusting screws and forming extensions of slots provided in their annular portions, substantially as and for the purpose set forth. 8th. The die-hammer actuating shaft, in combination with a loose pulley with a spring applied thereto, one end of said spring being isolated from the point where the resistance is received on the pulley and engaged by a bolt connected to the shaft, said bolt engaging said spring and moving it to said point of resistance, substantially as and for the purpose set forth. 9th. The die-hammer actuating shaft, having its sleeve extended and compressed by the partial coil of a spring with an arm or other end keyed to the pulley-hub arranged upon said shaft, and its other end provided with a lateral projection isolated from a key upon which the resistance is received, in combination with the fixed collar of said shaft having a spring bolt with one end engaging the lateral projection of said spring, and its other end engaged by a clutch-bar actuated by a treadle, substantially as and for the purpose set forth. 10th. The

herein described die, made of chilled cast metal, with the body portion of its face perfectly flat across a portion of its width, to form a flange product or article and to effect the longitudinal displacement of the metal undergoing formation, substantially as and for the purpose set forth.

No. 19,260. Middlings Purifier.

(Epurateur des Gruaux.)

John T. Walter, Easton, Penn., U.S., 30th April, 1884; 5 years.

Claim.—1st. In a middlings-purifier, the combination, with the frame of the machine, a vibrating screen-casing supported in said frame and an exhaust-fan, of a settling-chamber located at the side of the frame adjacent to the casing and having its inner wall formed by the side of the casing, and passages connecting the said settling-chamber with the interior of the casing and the exhaust-fan, substantially as and for the purpose set forth. 2nd. In a middlings-purifier, the combination, with the screen-casing and an exhaust-fan, of a settling-chamber, a partition of pervious material placed in said chamber, and passages connecting the said chamber with the interior of the screen-casing and with the exhaust-fan, said passages being arranged to communicate with the settling-chamber at opposite sides of the said partition, substantially as and for the purpose set forth. 3rd. In a middlings-purifier, the combination, with the screen-casing and an exhaust-fan, of a settling-chamber for the separation of the coarser from the finer particles of dust, by gravity passages connecting such chamber with the interior of the screen-casing and with the exhaust-fan, an inclined bottom to said settling-chamber, and an air passage communicating with the said settling-chamber and constructed and arranged to cause an upward air current through the material falling from the lower edge of said inclined bottom, substantially as described. 4th. In a middlings-purifier, the combination, with the screen-casing and an exhaust-fan, of an air chamber G connected with the interior of the screen-casing and the exhaust-fan, and provided with an opening a near its bottom, and an inclined board J placed in the said air chamber above said opening, substantially as and for the purpose set forth. 5th. In a middlings-purifier, the combination, with the screen-casing, settling-chambers upon either side of said casing and an exhaust-fan, of an air trunk F extending through the interior of said casing above the screen, communicating with the said chambers at its ends, and provided with a longitudinal opening extending practically the full width of the screen, substantially as described and for the purposes set forth. 6th. In a middlings-purifier, the combination, with the screen-casing, settling-chambers upon either side of said casing, vertical screens in said settling-chambers, and an exhaust-fan connected with the space between said vertical screens and the exterior of the screen-casing, of an air trunk F communicating with the interior of the screen-casing and with the space between said vertical screens and the outside walls of the settling-chambers, substantially as described. 7th. In a middlings-purifier, the combination, with the screen-casing, a screen supported therein and an exhaust-fan, of settling-chambers G located at the sides of the said casing, and connected by suitable passages with the said exhaust-fan, air trunks F communicating at their ends with the said settling-chambers, extending through the said screen-casing and provided with longitudinally extended openings F communicating with the interior thereof, and valves V for controlling said openings F, substantially as and for the purpose set forth. 8th. The combination, with the vibrating casing B, screens C, air chamber G and air trunks F, of the stationary partition I having sections i of pervious material, and intermediate trunks F, the latter provided with apertures i2 arranged opposite the trunks F, substantially as and for the purpose set forth. 9th. In a middlings-purifier, the combination of an inclined separating-screen, a casing therefor, an exhaust-fan connected with said casing above the screen, and a passage E extending downwardly from the lower exterior wall below the screen, and provided with an elongated aperture in its casing caused to pass through the tailings falling from the lower end of said screen, substantially as and for the purpose set forth. 10th. In a middlings-purifier, the combination of an inclined separating-screen, a casing therefor, an exhaust-fan connected with said casing above the screen, a passage E extending downwardly from the lower end of said screen, and provided with an elongated opening in its exterior wall below the screen, and an adjustable valve constructed to regulate the inflow of air to the passage through said opening, substantially as and for the purpose set forth. 11th. In a middlings-purifier, the combination, with two or more oppositely inclined screens, a casing surrounding each of said screens, and an exhaust-fan communicating with the interior of said casing above the screens, of a passage E extending from the lower end of one screen to the head of the next, and a valve e at the lower end of said passage, for the purpose of preventing an upward flow of air therein, substantially as described. 12th. In a middlings-purifier, the combination, with two or more oppositely inclined screens, a casing surrounding each of said screens, and an exhaust-fan communicating with the interior of said casing above the screens, of a passage E extending from the lower end of one screen to the head of the next and provided with a horizontally extended opening in its exterior wall, and a downwardly opening valve at its lower end, substantially as and for the purpose set forth. 13th. The combination, with the inclined screen C2, of a trough D2 constructed to receive the material passing through said screen, and a trough having an inclined bottom d3 provided with apertures d7 and d9, an oppositely inclined partition d6 having valved apertures d8 and a secondary bottom d8 provided with an exit opening d5, substantially as and for the purpose set forth. 14th. The combination, with the carriage k having longitudinal rods k1, the lever L, lever, of a block k2 secured to said rods and adjustable longitudinally thereon, and constructed to afford attachment for the end of said lever, substantially as and for the purpose set forth. 15th. The combination, with a reciprocating beater-carriage and with a lever and mt, the pivoted lever N, connecting rods m2 and l, and means for intermittently revolving the lever N, substantially as described. 16th. The combination, with a reciprocating beater and with a suitable driving-pulley, of a sprocket wheel O, a sprocket wheel O1 pro-

vided with arms O3, a belt O2 provided with a stop o1, a sprocket wheel N1, a belt N2 provided with a stop n1, a lever N and means for operating the said beater from said lever, substantially as described. 17th. In a middlings-purifier, the combination, with the frame of the machine and with a vibratory screen-casing B, of the settling-chambers G having their walls formed partially by the said casing B and partially by a stationary casing attached to said frame, said movable casing B and stationary casing having substantially air tight joints at their lines of juncture, substantially as described. 18th. In a middlings-purifier, the combination, with the movable inner casing B, the settling-chamber G and an exhaust-fan communicating with said chamber, of a longitudinal spout J attached to and movable with the said casing B, constructed to receive the material falling on the bottom of said chamber and provided with an outwardly opening valve j, substantially as and for the purpose set forth. 19th. In a middlings-purifier, the combination, with the frame of the machine, the screen-casing B and rotary beaters K, of tracks or ways as L1, L3, supported upon the frame of the machine outside of the casing, substantially as described.

No. 19,261. Apparatus for Obtaining from Logs Strips for Hay Bale Hoops, Basket Ware, &c. (Appareil pour tailler les Buches Enfeuillets pour Cercles de Balloets de Foin, Vannerie, &c.)

Elould Duplessis, St John, Que., 30th April, 1884; 5 years.

Claim.—1st. In a machine for loosening the fibre of logs, for the manufacture therefrom of strips for hay bale ties, &c., &c., the combination, with the main shaft actuated at desired rates of speed, of a frame mounted loosely thereon and carrying beaters operated by cams on shaft, and springs attached to frame, as and for the purposes set forth. 2nd. The combination, with the frame F, of belt O moved in either direction by gears M1, M2 intermeshing with pinion on actuating shaft, as and for the purposes described. 3rd. The combination, with a machine for loosening the fibre of logs, of a carriage for same supported adjustably by standards R, R, all as herein described. 4th. In combination with the rollers S, S mounted on carriage and supporting the log, the spike T driven into the log, and handle T1, as and for the purposes set forth.

No. 19,262. Car-Coupling. (Accouplage de Chars.)

Calvin P. Johnson and Samuel T. Walkley, Springfield, Mo., U. S., 30th April, 1884; 5 years.

Claim.—1st. The combination, with a draw-head having a longitudinal slot in the top, of a movable coupling-pin in the said slot, and a lever pivoted to one side of the slot, and provided at its pivoted end with a cam adapted to force back and then raise the pin, substantially as herein shown and described and for the purpose set forth. 2nd. The combination, with the draw-head A, of the movable coupling-pin C contained in a longitudinal slot in the draw-head, which pin is provided on one side with a recess G, and of the lever H pivoted to one side of the slot in the draw-head, and provided at its pivoted end with a cam J, adapted to act on the top and inner end of the recess G, substantially as herein shown and described and for the purpose set forth. 3rd. The combination, with the draw-head A, of the movable coupling-pin C having in one side a recess G, the top of which is inclined downward toward a point a, and the inner end of which is inclined forward toward a point b, the lever H pivoted to one side of the slot B in the draw-head, and of the cam J on the pivoted end of the lever H, substantially as herein shown and described and for the purpose set forth. 4th. The slotted draw-head A provided with the stop or projection L on its top, having stiffening-ribs M, in combination with the pin-operating lever H pivoted in the slot of the said draw-head, substantially as herein shown and described.

No. 19,263. Car-Coupling. (Accouplage de Chars.)

Richard D. Southwood, Bathurst, N.B., 30th April, 1884; 5 years.

Claim.—1st. In combination with the draw-head A, the pin B having a square turned head, and downward straight hook b bearing on the bottom of the draw-head to retain the pin in coupling position, to couple automatically with the link C, and lift without indrawing the link in uncoupling, as set forth. 2nd. The combination, with the draw-head A and pin B, of the crank-lever D, coupling-rod E, crank lever F, shaft G, lifting rod J and lever K for uncoupling the link C, as set forth.

No. 19,264. Meat Chopping Machine.

(Machine à Hacher la Viande.)

Hubert Langevin, St. John, Que., 30th April, 1884; 5 years.

Claim.—1st. In a meat chopping machine, the ratchet rim D fixed to a rotary chopping block H, eccentric pulley k working in the slot l of the lever L, and the pawl m pivoted to the lever L and taking into the teeth of the ratchet rim D, substantially as described. 2nd. In a meat-chopping machine, the turner M having the bar a movable vertically in suitable guides fixed on the upper frame H, substantially as described. 3rd. In a meat chopping machine, the removable shelf B having pivoted centrally on it a revolving chopping block, provided with the fence d, and ratchet rim D, substantially as shown and described. 4th. In a meat chopping machine, the removable shelf B carrying the chopping block C, supported by the girts a and held in place by the pivoted stay piece c, substantially as shown and described and for the purpose set forth.

No. 19,265. Car-Coupling. (Accouplage de Chars.)

Pierre E. Mignault, Actonville, Que., and Peter Dion, Salem, Mass., U.S., 30th April, 1884; 5 years.

Claim.—1st. In a car-coupling, the draw-head B provided with a suitable recess to receive the coupling link, and the slot D enclosed by the projection E, in combination with the coupling hook C pivoted within said draw-head and provided with the nose g, and the exten-

sion *c* projecting backward from the front end of said hook above the portion *E*, substantially as and for the purposes described. 2nd. In a car-coupling, the combination of the draw-head *B*, the coupling hook *C* pivoted therein and provided with the nose *g*, the short arm *h* connected to said hook, and the shaft *i* provided at each end with a lever *k*, adapted to operate substantially as and for the purposes described. 3rd. In a car-coupling, the combination of the draw-head *B*, the coupling hook *C* pivoted therein and provided with the nose *g*, the arm *h* connected to said hook, the shaft *i* provided at each end with a lever *k*, and the stops *l, l*, adapted to operate substantially as and for the purposes described. 4th. In a car-coupling, the combination of the draw-head *B*, the coupling hook *C* pivoted therein and provided with the nose *g*, the rod *m* provided with the projection *n*, and the weighted stop *o*, all adapted to operate substantially as and for the purposes described.

No. 19,266. Hay Rake. (*Râteau à Foin.*)

Henry Moody (Assignee of Magloire Desjardins), Terrebonne, Que., 30th April, 1884; 5 years.

Claim.—1st. In a hay rake, a bar to which the teeth are slung, carried on the rear end of a curved lever pivoted to the bar to which the teeth are attached, and having its front end depressed by draught on the whipleretree and raised by the operating handle, all substantially as herein set forth and for the purposes described. 2nd. The combination of the bent arm *N*, curved arm *L* and handle *K* made in one with, or secured to each other and operating (through the curved arm *H* and links *H, M*), the lever *D*, so as either to raise the teeth from the ground or allow them to come in contact with it.

No. 19,267. Scaffolding. (*Echaffaudage.*)

John T. Haskell and Harry E. Sreater, Norwalk, Ohio, U. S., 30th April, 1884; 5 years.

Claim.—1st. The combination, with two or more laterally adjustable supporting beams connected at their upper ends and carrying a pulley, of a frame arranged upon said beams and having a rope or chain adapted to engage said pulley, and a bar having a transverse locking bar secured at its lower end and provided with a longitudinal slot adapted to receive a bolt or screw projecting from one of the bars of said frame, substantially as set forth. 2nd. The combination, with the laterally adjustable beams *A, A*, connected at their upper ends and carrying a pulley, of a frame or scaffold adapted to slide thereon, and having a rope adapted to engage said pulley and consisting of the side beams *C, C*, braces *b, b* and *c, c*, *a, a*, *d*, beam *D* having an idler or roller *d*, bracing beams *E, E*, brace or bar *F* having a pulley *d*, and the locking device *G* consisting of the slotted bar *e* and cross bar *f*, and a rope or chain for operating said bars, substantially as set forth.

No. 19,268. Metallic Chimney.

(*Cheminée Métallique*)

Samuel R. Copeland, Landsdowne, Ont., 20th April, 1884; 5 years.

Claim.—1st. A metallic chimney composed of sections rectangular in cross section, and having integral therewith, collars bevelled on the inside and provided with clamping screws, for conjoining the sections telescopically, as set forth. 2nd. The top section *A*, having integrally a base *B* provided with ribs *B*, and removable cap *A1*, in combination with a plate *C* supporting the section, as set forth. 3rd. The lower section *K*, having stove pipe collars *K1*, caps *K11* and door *L*, as set forth. 4th. The elbow sections *F*, having collars *F1* and screws *F11*, as set forth. 5th. The elbow sections *I*, having a collar *I1* and doors *J, J1*, as set forth. 6th. The combination of the roof-plates *N, N1*, hinged together, having ribs *N11*, with bevelled edges and plates *O* sliding-intermediately having the upper edges bevelled, as set forth. 7th. The straight sections *H*, having collar *H1* bevelled on the inside, and provided with clamping screws *F11*, as set forth.

No. 19,269. Semaphore and other Elevated Signal Lights. (*Feu de Sémaphore et autres Signaux Elevés.*)

Edward S. Piper, Toronto, Ont., 30th April, 1884; 5 years.

Claim.—1st. A hollow case having one or more openings provided with glasses of contrasting colours and held in an elevated position, in combination with an ordinary lamp so suspended from within the case that the said lamp may be elevated into, or lowered from the case without the party operating it being required to ascend to the said elevated case. 2nd. A hollow case *B*, having an open bottom and provided with means for adjustably suspending a lamp *H* within it, in combination with a movable jacket *C*, having signal glasses *D*, and provided with mechanism by which the glasses *D* within it may be moved from, or in front of the lamp *H*, substantially as and for the purpose specified. 3rd. A hollow case *B*, having an open bottom and provided with means for adjustably suspending the lamp *H* within it, in combination with the jacket *C*, having glasses *D* within it, and connected by the bar *E* to the semaphore

arm *F*, substantially as and for the purpose specified. 4th. A hollow case *B*, having an open bottom and provided with means for adjustably suspending a lamp *H* within it, and having a jacket *C*, with glasses *D* arranged to be adjusted in front of the lamp, as specified, in combination with an outer case *K*, designed to surround the jacket *C* and provided with glasses or openings so located as to be in front of the lamp *H*, when suspended within the case *B*. 5th. The outer case *K*, provided with lugs *B*, and having glasses *D* inserted in it, as specified, in combination with the hollow case *B*, provided with a sliding jacket *C* having glasses *D*, and arranged substantially as and for the purpose specified. 6th. A hollow case *B*, having an open bottom and a pulley *C* located at its top, in combination with the chain *M*, to suspend and operate the lamp *H*, substantially as and for the purpose specified. 7th. A lamp-case having one or more openings, in combination with a movable jacket fitted to the case and having signal glasses of contrasting colours, the said jacket being so arranged that it may be readily adjusted for the purpose of bringing different glasses opposite to the opening in the lamp-case.

No. 19,270. Machine for Making Wood Fibre. (*Machine pour faire la Fibre de Bois.*)

Philip H. Holmes, Gardiner, Me., U. S., 30th April, 1884; 5 years.

Claim.—1st. In a machine for making wood fibre, the combination, with devices for supporting and rotating a block or pieces of wood, of a knife arranged to be moved and sever the fibre by a drawing cut, substantially as set forth. 2nd. In a machine for making wood fibre, the combination, with devices for supporting and rotating a block or pieces of wood, of a series of knives and suitable devices for reciprocating said knives and severing the fibre by a drawing cut, substantially as set forth. 3rd. In a machine for making wood fibre, the combination, with devices for supporting and rotating a block or pieces of wood, of a series of knives, and devices for feeding the knives to the work, and for reciprocating them and severing the fibre by a drawing cut, substantially as set forth. 4th. In a machine for making wood fibre, the combination, with devices for supporting and rotating a block or pieces of wood, of a blade provided with grooves that sub-divide the blade into a series of knives, substantially as set forth. 5th. In a machine for making wood fibre, the combination, with devices for holding a block of wood, of a series of knives adapted to convert the wood into fibre, and means for sharpening the knives while the machine is in operation, substantially as set forth. 6th. In a machine for making wood fibre, the combination, with devices for supporting and rotating a block or pieces of wood, of a series of knives, devices to feed and reciprocate said knives, and means for sharpening the knives while the machine is in operation, substantially as set forth. 7th. In a machine for making wood fibre, the combination, with devices for rotating a block or pieces of wood, of reciprocating knives, a reciprocating knife-sharpener, and means for adjusting the angle of inclination of said sharpener, substantially as set forth. 8th. In a machine for making wood fibre, the combination, with devices for rotating a block or pieces of wood, of reciprocating slide knives, a knife-sharpener removably secured thereto, and means for varying the angle of inclination of said slide, substantially as set forth. 9th. In a machine for making wood fibre, the combination, with devices for rotating a block or pieces of wood, of reciprocating knives and reciprocating knife-sharpener, located at opposite sides of the transverse centre of said knives, substantially as set forth. 10th. In a machine for making wood fibre, the combination, with devices for rotating a block or pieces of wood, of reciprocating knives for severing the fibre by a drawing cut, and a trough for conveying away said fibres, substantially as set forth.

No. 19,271. Combined Sulky Rake, Harrow and Thistle-Cutter or Cultivator. (*Râteau, Hers et Coupe Chardon ou Cultivateur, à Siège, Combinés.*)

William Piper, Bracebridge, Ont., 30th April, 1884; 5 years.

Claim.—1st. In a combined sulky hay rake, harrow and thistle-cutter or cultivator, the combination of the self-locking lever *H*, link *a*, tension spring *K*, connecting rod *L*, forked arm *F* and tilting bar *G*, substantially as shown and described and for the purpose specified. 2nd. In a combined sulky hay rake, harrow and thistle-cutter or cultivator, the combination of the draught-bar *J*, brace rods *o, o* and chain *a*, with the tongue *L* and axle *B*, substantially as shown and described and for the purpose hereinbefore set forth. 3rd. In a combined sulky hay rake, harrow and thistle-cutter or cultivator, the reversible harrow constructed in two cross-sections *N, N* and in three sections *N1, N1, N1*, lengthwise, in combination with the chains *A5* and *a*, adjusting chains *e, e*, shaking chains *c, c*, and standards *M*, provided with loops *M1*, substantially as shown and described and for the purpose specified. 4th. In a combined sulky hay rake, harrow and thistle-cutter or cultivator, the combination of the raising-bar (*z*, chains *a*, stirrups *P*, cultivator bars *P*, bolt *b*, clevis *b*, hangers *R*, shaft *x* and beveled edge wheels *X, X*, substantially as shown and described and for the purpose specified.

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

191. H. and W. TURNER, 2nd 5 years of No. 9845, from the 12th day of April, 1884. Improvements on pantaloons suspenders, 1st April, 1884.
 192. J. L. LeCONTE, (assignee) 2nd 5 years of No. 9811, from the 4th day of April, 1884. Electric Indicator Apparatus, 2nd April, 1884.
 193. R. WATKINSON, 2nd 5 years of No. 10,156, from the 24th day June, 1884. Improvements in universal and other joints for coupling hose and other pipes, 2nd April, 1884.
 194. W. MARKS, 2nd and 3rd 5 years of No. 10,423, from the 3rd day of September, 1884. Improvements on fertilizer distributors, 2nd April, 1884.
 195. J. GOODRICH, 2nd 5 years of No. 9808, from the 4th day of April, 1884. Improvements on Mechanism for imparting motion to fluids, &c., 3rd April, 1884.
 196. D. MILLS, 2nd and 3rd 5 years of No. 14,505, from the 29th day of March, 1884. Improvements in sewing machines, 4th April, 1884.
 197. H. A., O. B. and M. P. RIDEOUT, 2nd 5 years of No. 9826, from the 8th day of April, 1884. Improvements in combined churn and butter worker, 7th April, 1884.
 198. W. T. BUNNELL, 3rd 5 years of No. 3355, from the 27th day of April, 1884. Improvements on washing machines, 7th April, 1884.
 199. E. B. EDDY, 2nd 5 years of No. 9857, from the 17th day of April, 1884. Improvements on wash boards, 8th April, 1884.
 200. A. C. KREIS, 2nd 5 years of No. 9855, from the 17th day of April, 1884. Improvements on connectors for battery carbons, 9th April, 1884.
 201. J. COLEMAN and G. BRETT, 2nd 5 years of No. 9834, from the 12th day of April, 1884. Improvements in pumps, 12th April, 1884.
 202. A. S. WALBRIDGE, 2nd 5 years of No. 10,016, from the 23th day of May, 1884. Improvements on fire engines, 16th April, 1884.
 203. A. D. COLE, 3rd 5 years of No. 3370, from the 27th day of April, 1884. Improvements in turbine water wheels, 21st April, 1884.
 204. W. MICHAEL, 2nd 5 years of No. 9890, from the 26th day of April, 1884. Improvements on vehicle springs, 22nd April, 1884.
 205. D. T. WINTER and C. E. TEAGUE, 2nd 5 years of No. 10,053, from the 7th day of June, 1884. Improvements on machines for measuring and weighing skins and other articles, 24th April, 1884.
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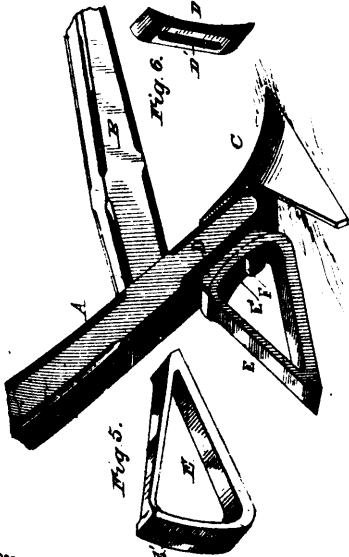
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

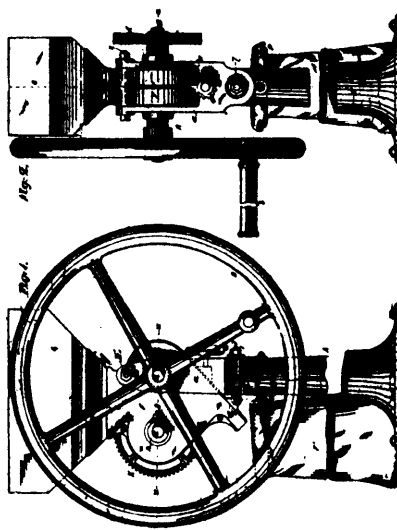
Vol. XII.

MAY, 1884.

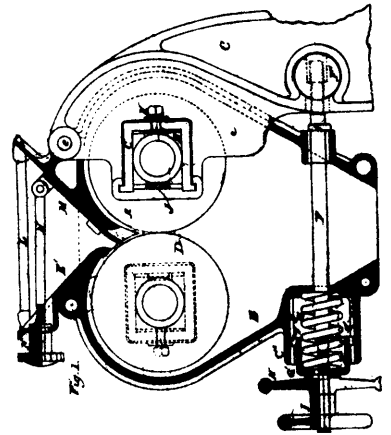
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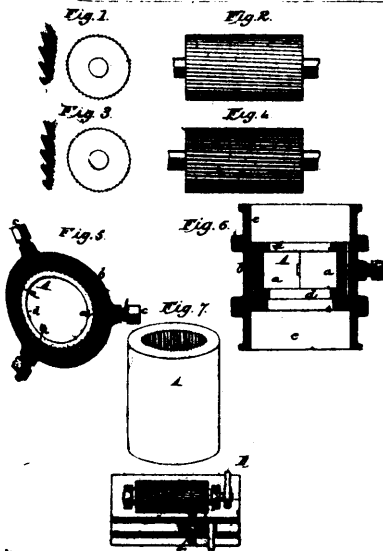
18973 Ammons' Plough Gauge and Guide.



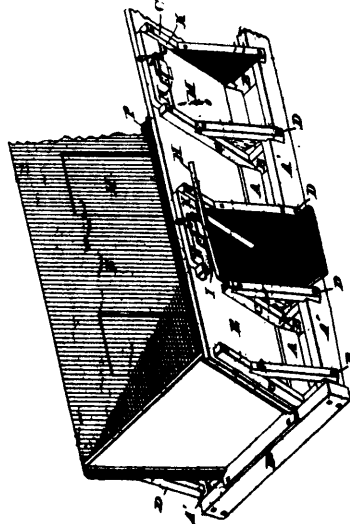
18974 Birkholz's Roller Grinding Mill.



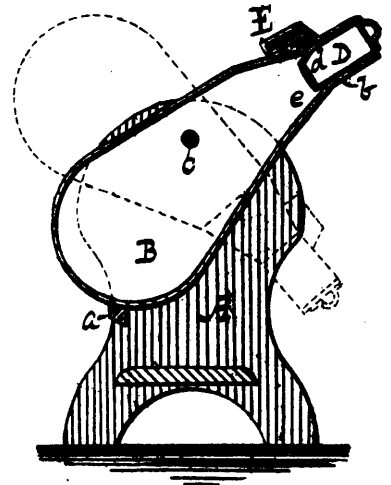
18975 Birkholz's Roller Grinding Mill.



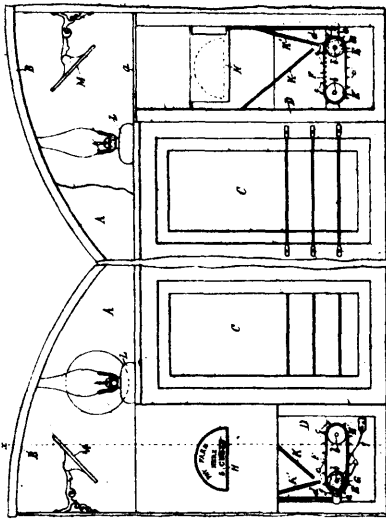
18976 Birkholz's Grinding Rolls, &c.



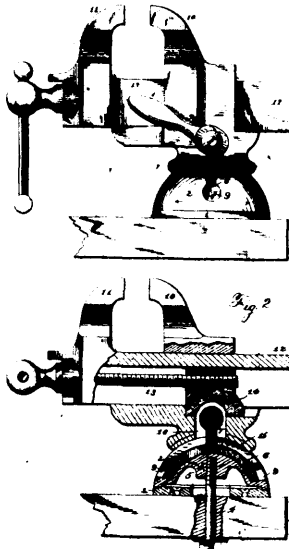
18977 Madeira's Coal Car.



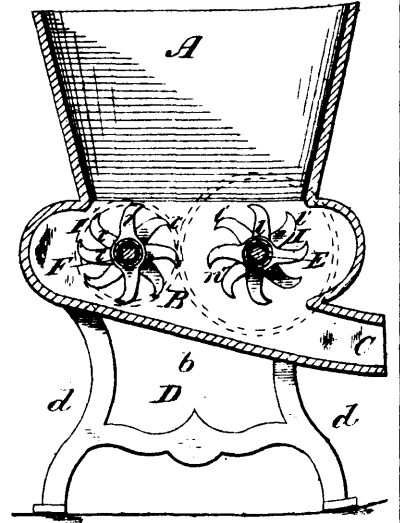
18978 Ellis' Shot Case.



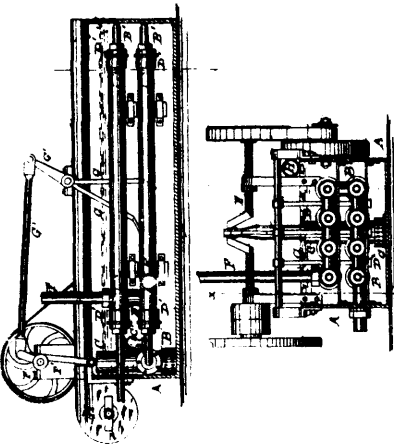
18979 Hare's Street Car Fare Box.



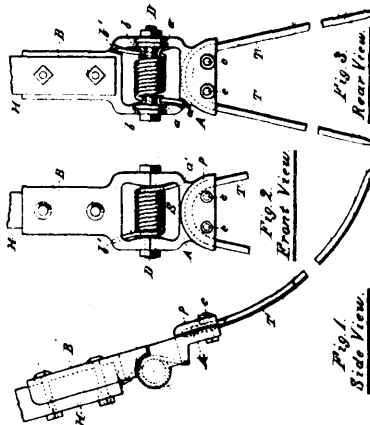
18980 Wood's Vice.



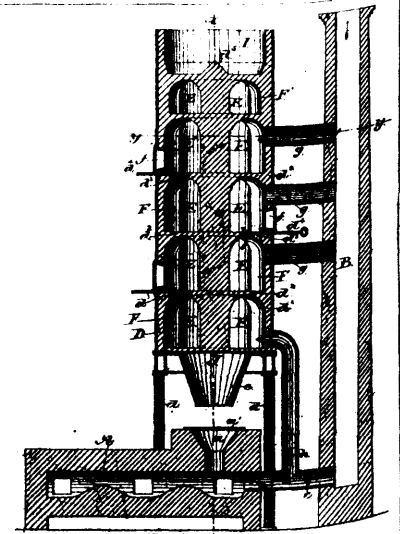
18981 Fairman's Ice Crushing Machine.



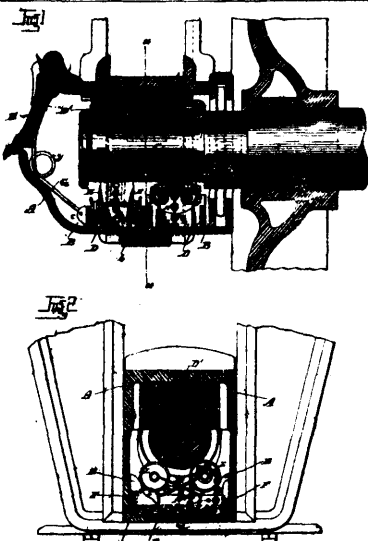
18982 Wilhelm's Beer Cooler.



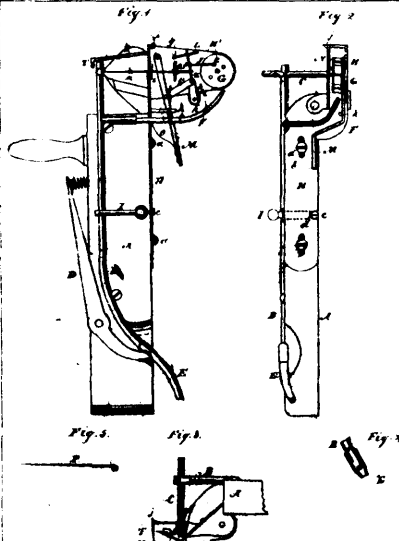
18984 Fry's Fork for Hay Tedders.



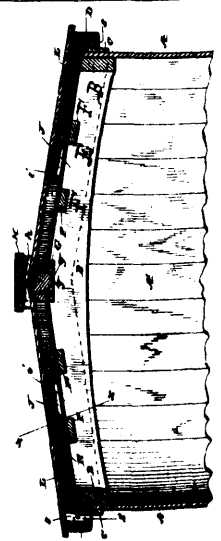
18985 Bridgford's Apparatus for Deoxidizing Iron Ores.



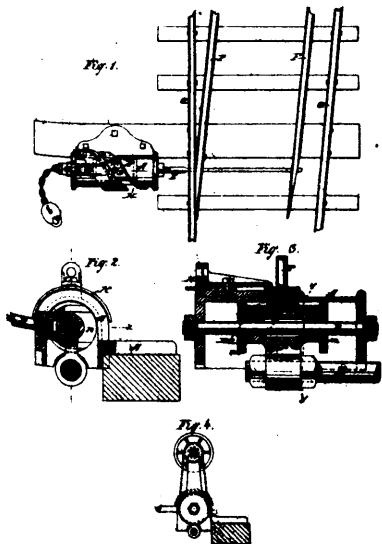
18986 Holmes' Car Axle Lubricator.



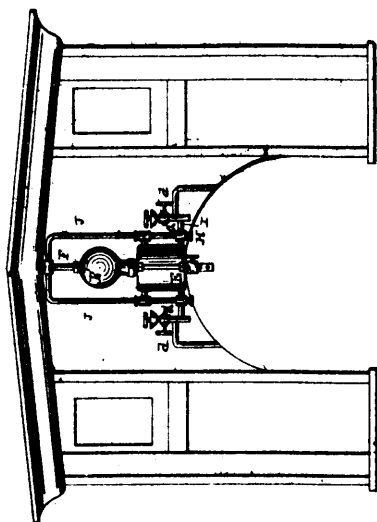
18987 Whipple's Paint Distributor.



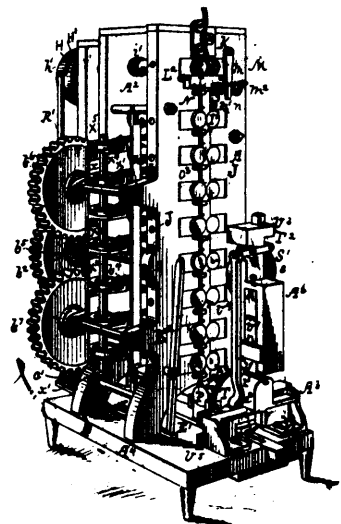
18988 Gilmore's Car Roofing.



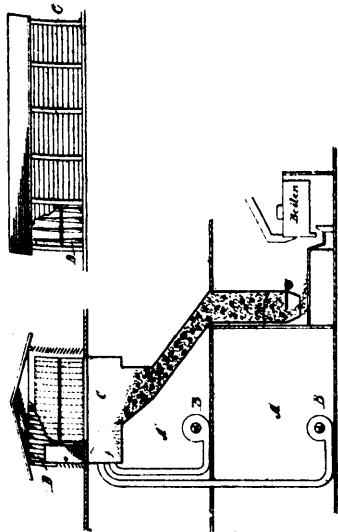
18989 Horne's Railroad Switch Point Mover.



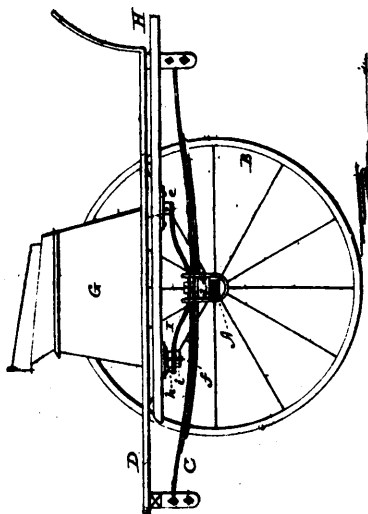
18990 Hodges' Locomotive Lubricator.



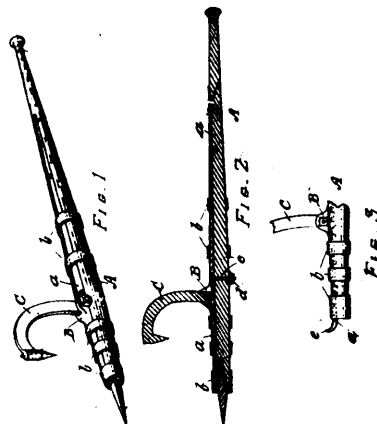
18991 Capewell's Horse-Shoe Nail Machine.



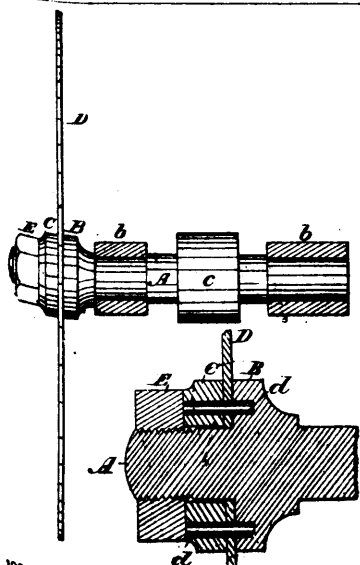
18992 Backus' Dust Arrester.



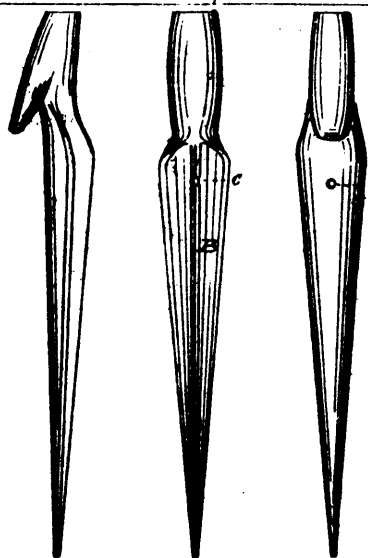
18993 Spare's Two-Wheeled Carriage.



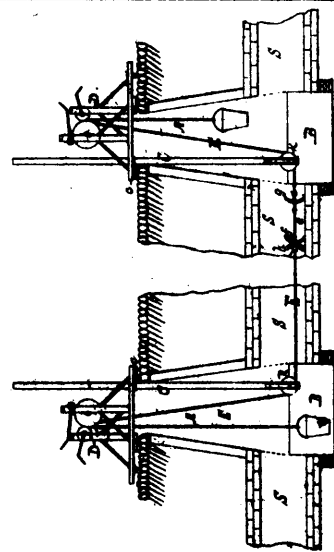
18994 Talbot's Cant Hook Lever.



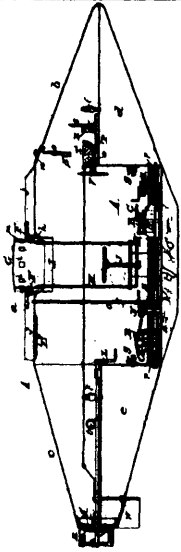
18995 Sherman's Hanging Circular Saw.



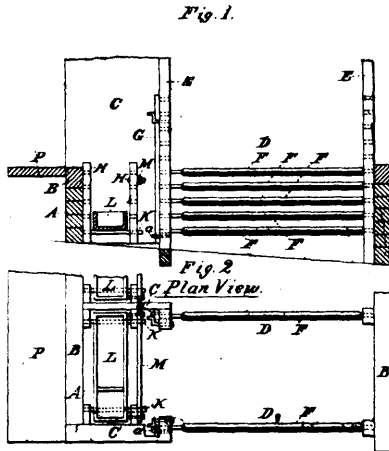
18996 Dawson's Tent Peg.



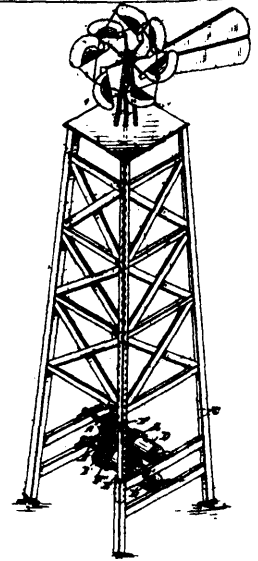
18997 Dark's Device for Cleaning Street Sewers.



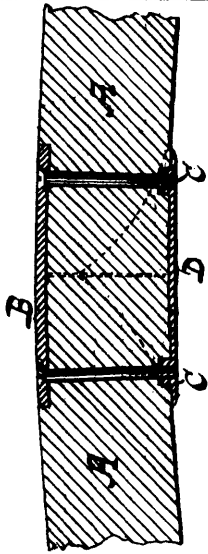
18998 Jopling's Submarine Boat.



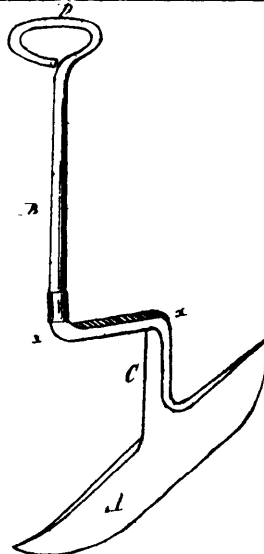
18999 Knight's Stable.



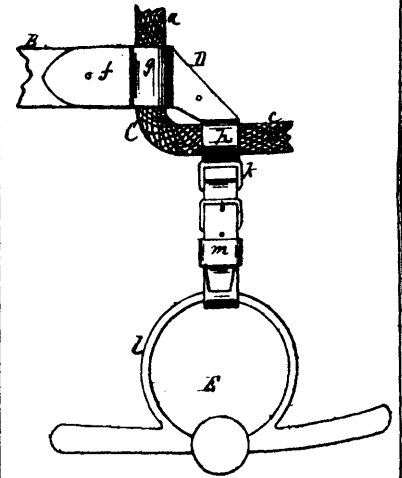
19000 Babcock's Device for Converting Motion.



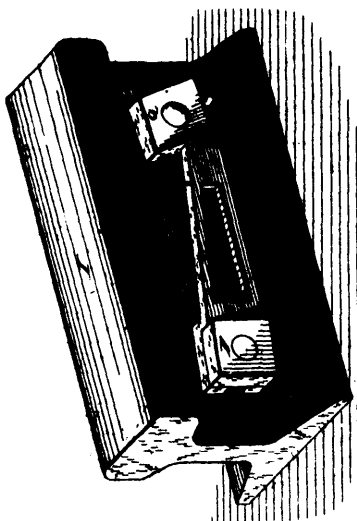
19001 McGuire's Felly Plate for Wheels.



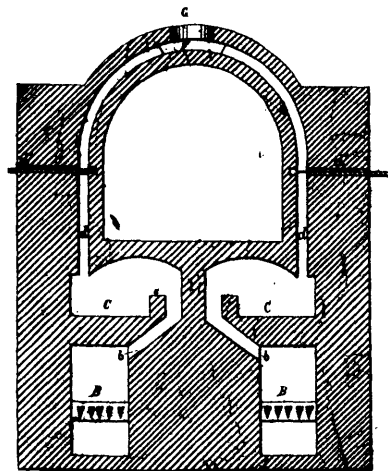
19002 McMillen's Hay Knife.



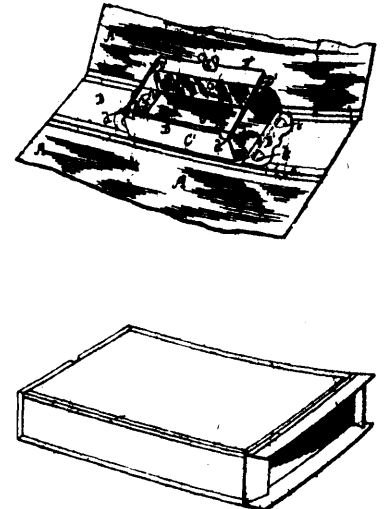
19003 Lighthouse's Halter.



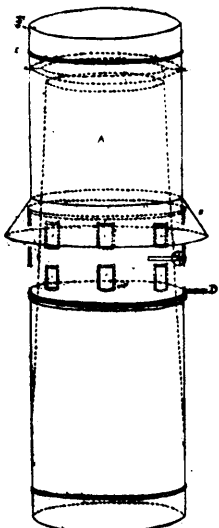
19004 Moore's Nut Lock.



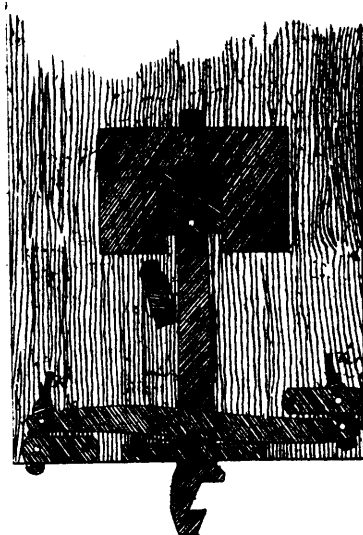
19005 Nellis' Heating, Tempering, and Annealing Furnace, &c.



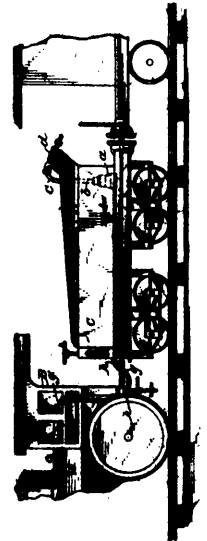
19006 Shannon's Temporary Binder.



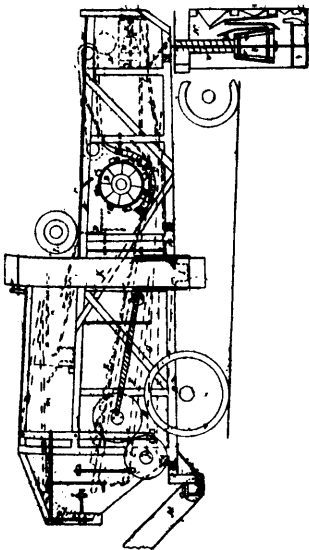
19007 Rodrigue's Apparatus for Purifying Air in Houses, &c.



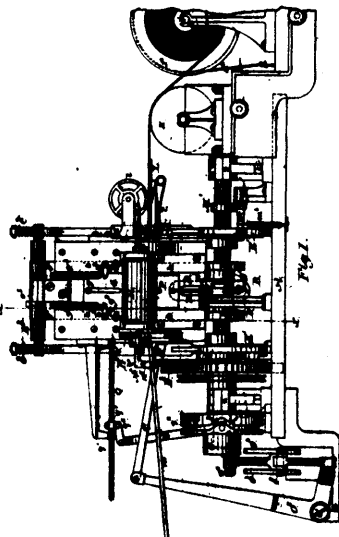
19008 Letourneau's Car-Coupling.



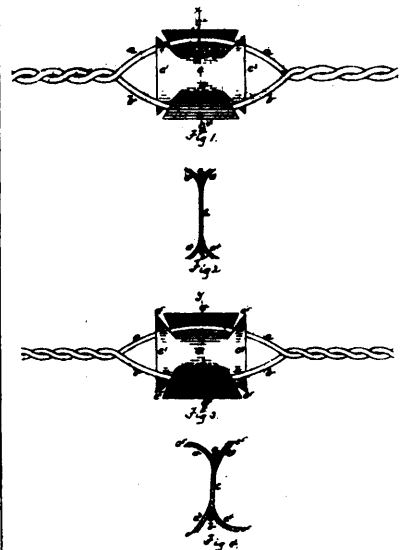
19009 Havens' Steam Fire Engine.



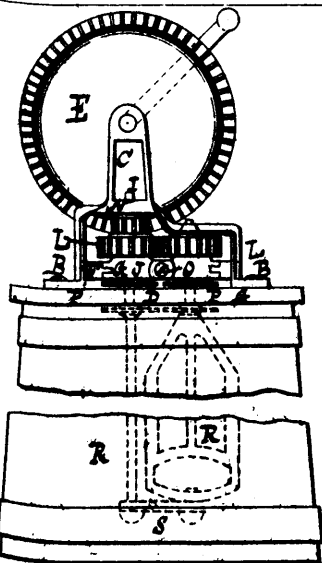
19010 Morris' Threshing Machine.



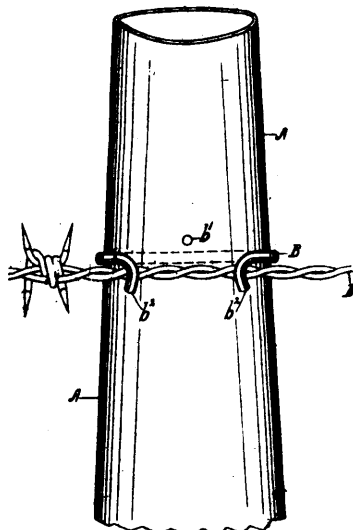
19011 Burns and Buckman's Machine for Making Cigarettes.



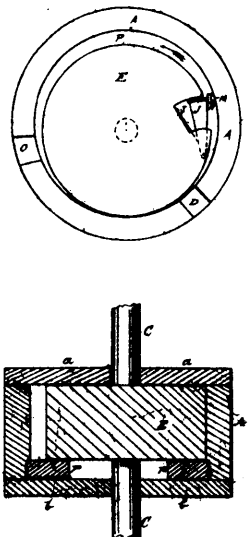
19012 Stubbe's Wire Fence.



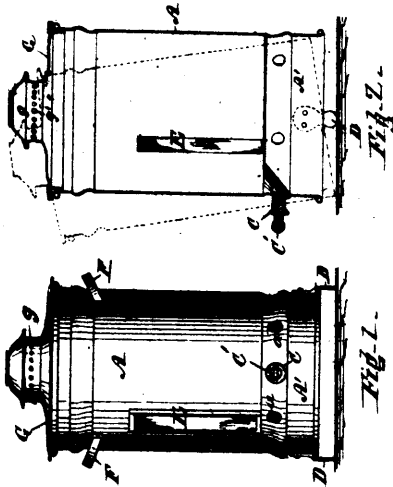
19013 Nelson's Charrn.



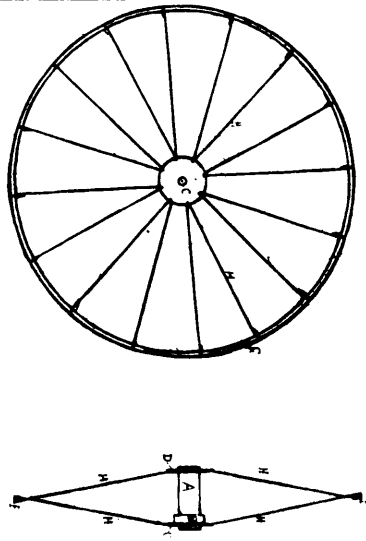
19014 Sharon's Fence Post.



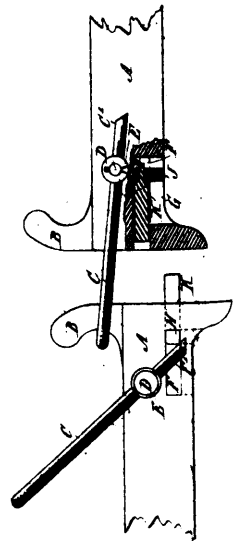
19015 Duffield's Rotary Steam Engine.



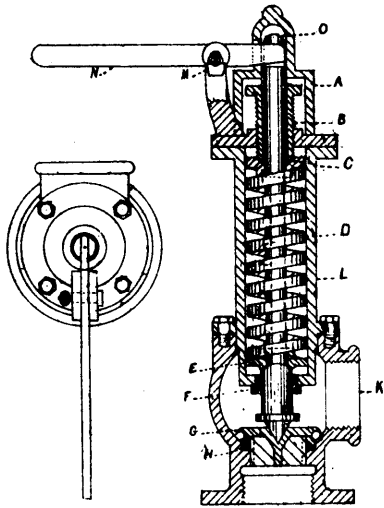
19016 Howes' Creamer.



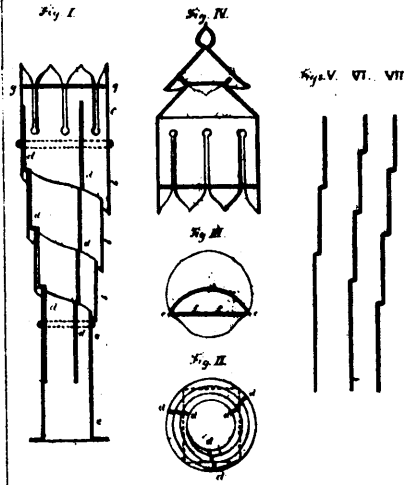
19017 Ladd's Wire Wheel.



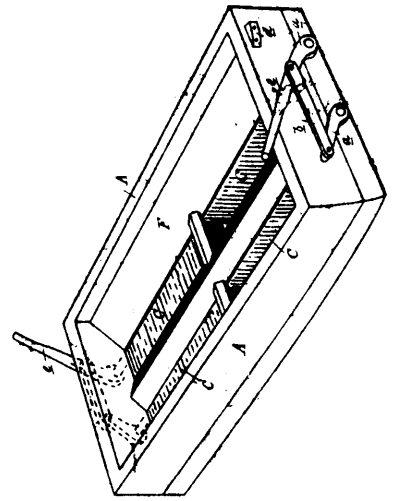
19018 Nyce and Hunsicker's Car-Couplers.



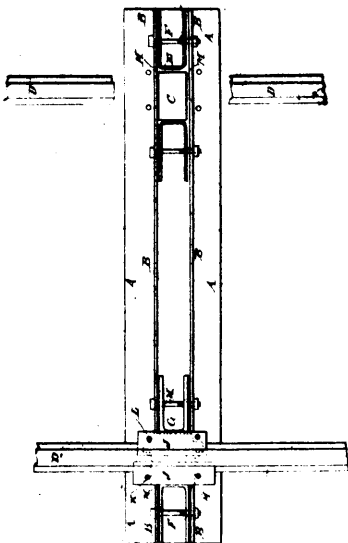
19019 Porteous' Lock-up Safety Valve.



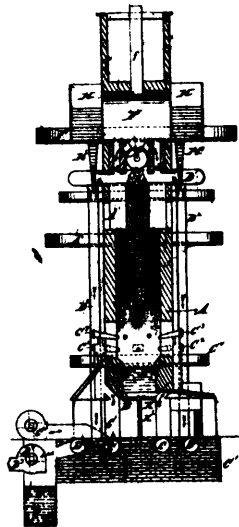
19020 Wright's Chimney Top and Ventilator.



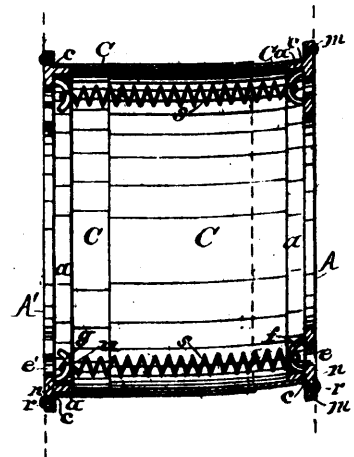
19021 Newth's Dumping Bottom.



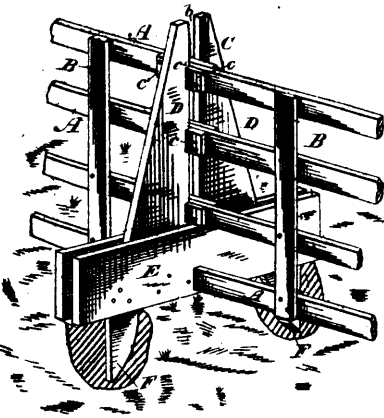
19022 Van Orden's Metallic Railroad Tie.



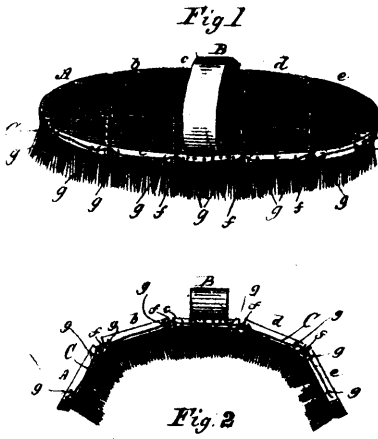
19023 Collian's Furnace for Reducing Ores and Metals.



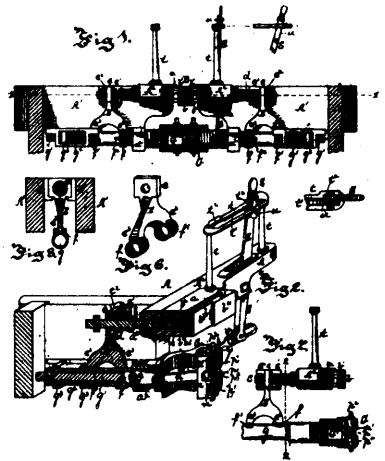
19024 McGuire's Stove Pipe Thimble.



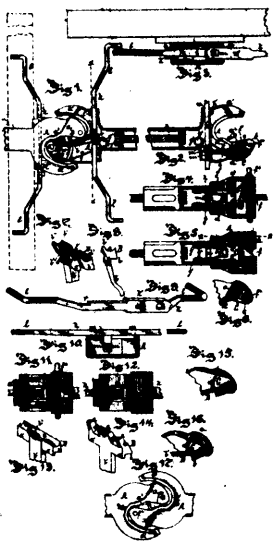
18025 Newton's Fence.



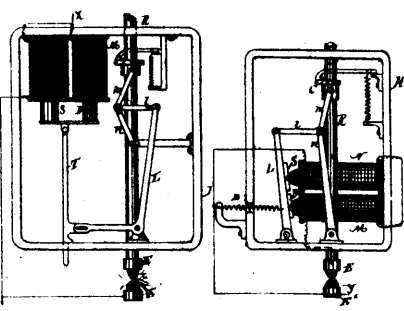
18026 Meakins' Brush.



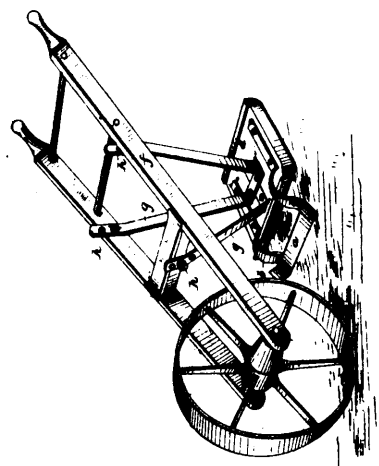
18027 Browning's Car-Coupler.



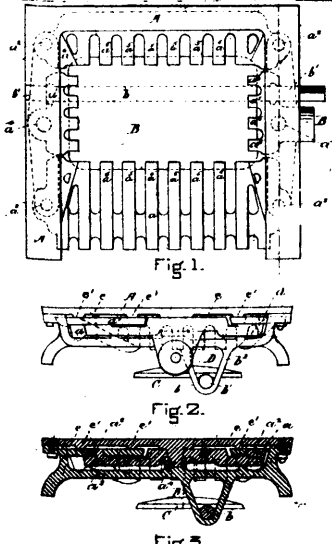
18028 Browning's Car-Coupler.



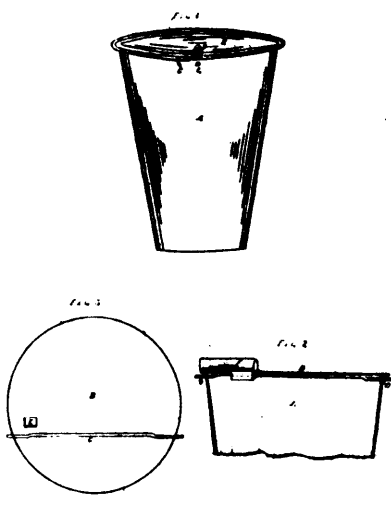
18029 Thomson's Electric Arc Lamp.



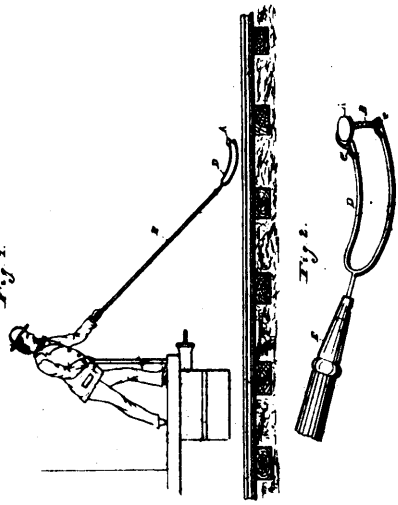
18030 Gregg's Cultivator.



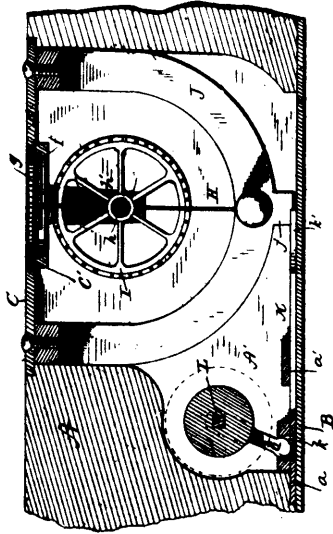
18031 Anthony's Stove Grate.



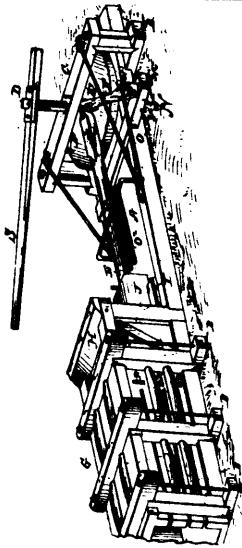
18032 Wells' Cover and Attachment for Sap Buckets.



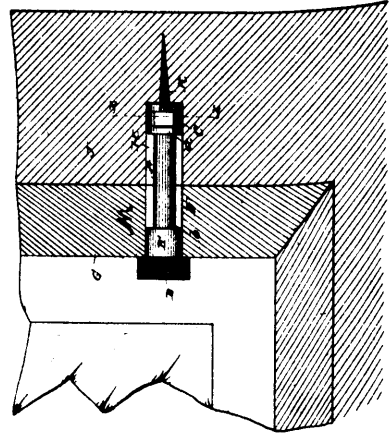
18035 Bevington's Railway Torpedo.



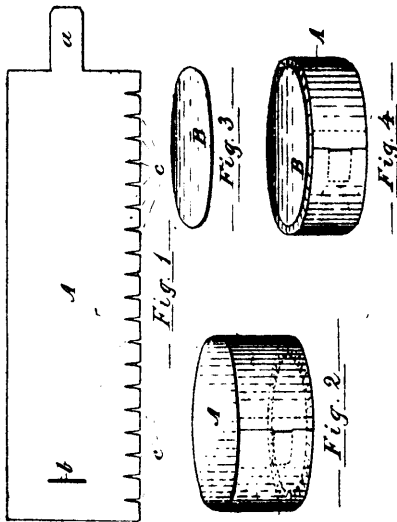
19036 Parkhurst's Pendulum Level.



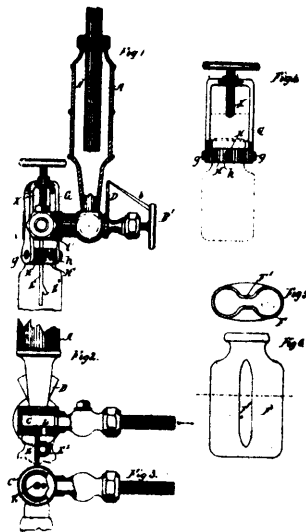
19037 McIver's Baling Press.



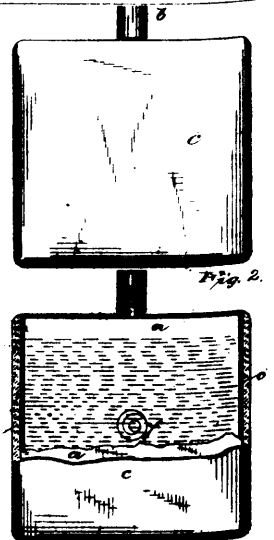
19038 Newmeyer's Window Bead Fastener.



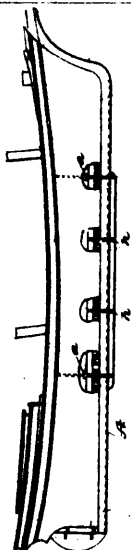
18939 Brenton's Cheese Bandage and Box Combined.



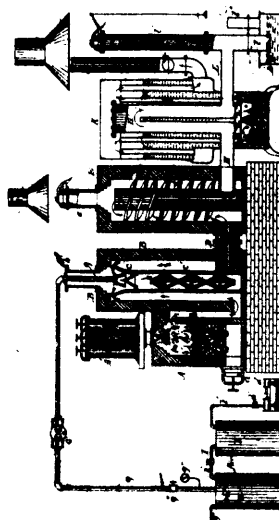
19041 Bell's Lubricator.



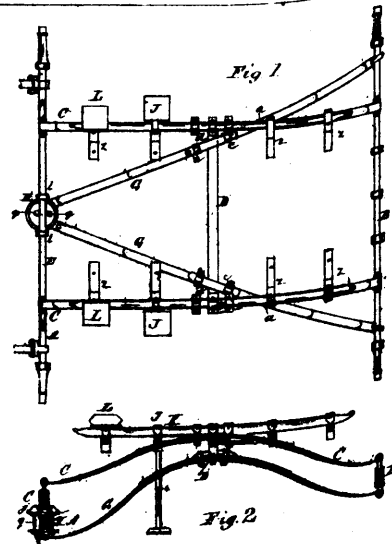
19042 Burling's Slate Cleaner.



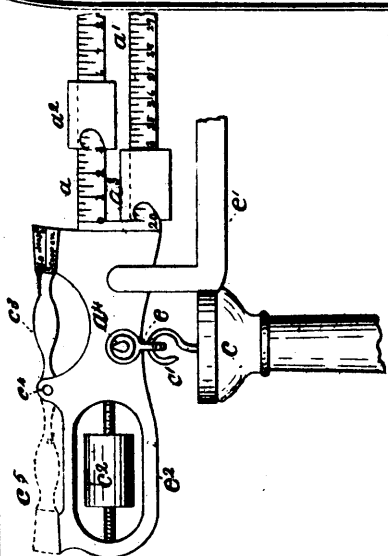
19043 Christensen's Center Board for Vessels.



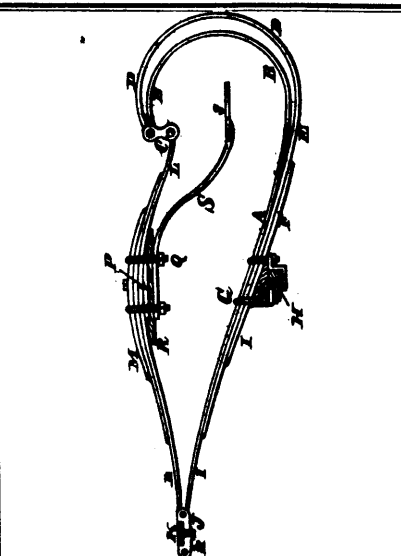
19044 Leadley's Gas Apparatus, &c.



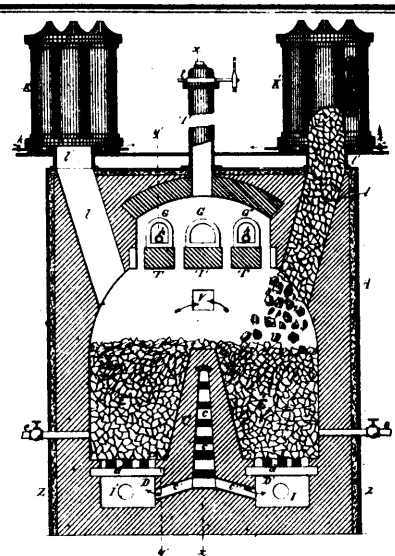
19045 Field's Running Gear for Carriages.



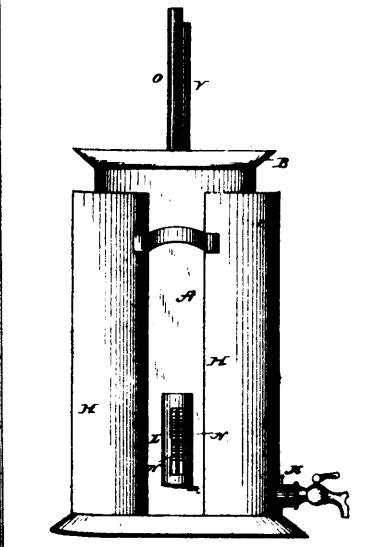
19046 Houghton's Scale.



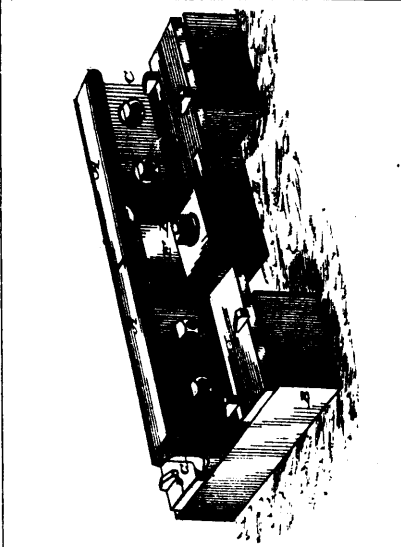
19047 Murch's Running Gear for Vehicles.



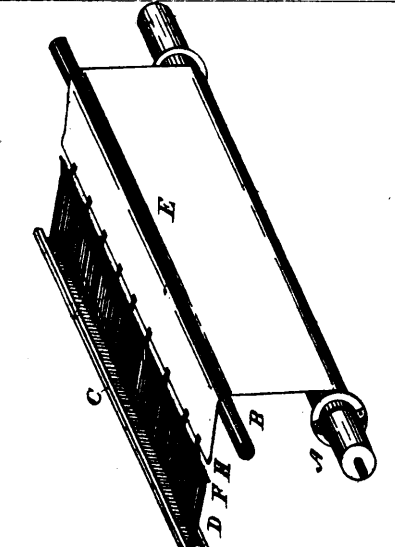
19048 Leadley's Gas Apparatus, &c.



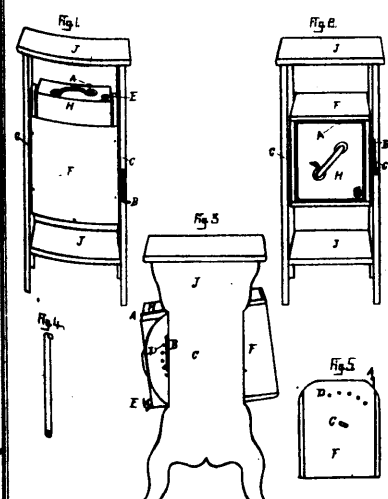
19049 Shive's Churn.



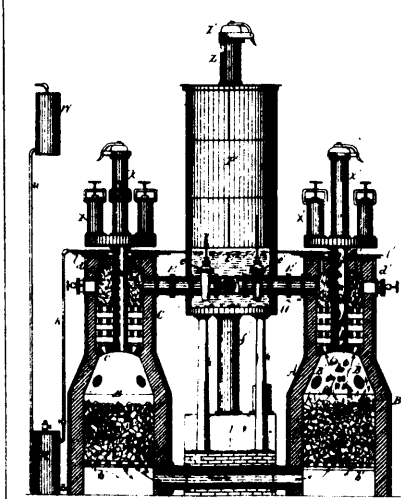
19050 Week's Railway Rail Chair.



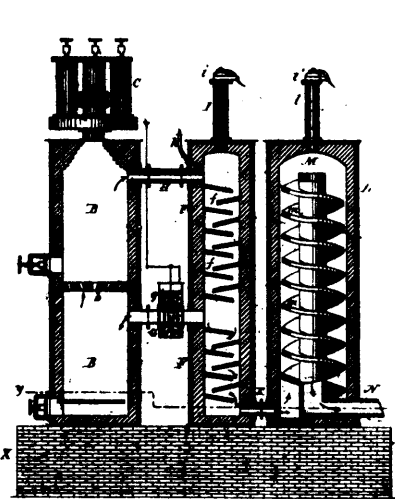
19051 Rice's Loom.



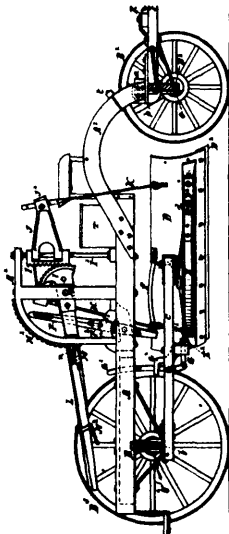
19052 Waterson's Machine for Holding Coal Oil Cans while in Use.



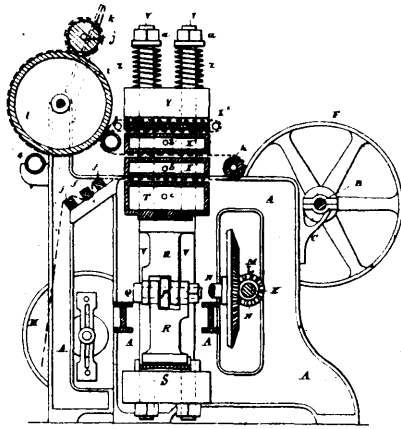
19053 Leadley's Gas Apparatus, &c.



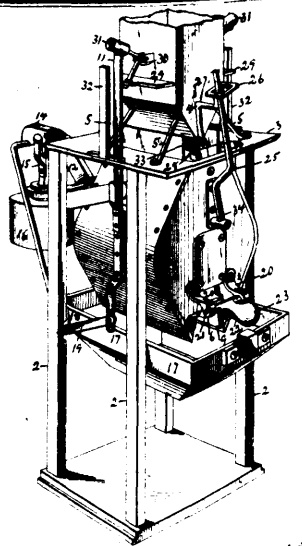
19054 Leadley's Gas Apparatus, &c.



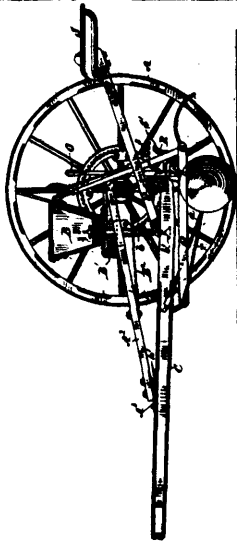
19055 Taft's Machine for Making, Repairing, and Cleaning Roads.



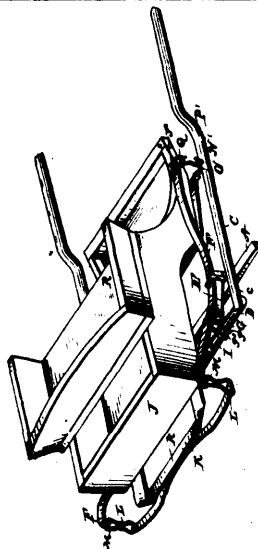
19056 Patrick's Machine for Pressing Cloth.



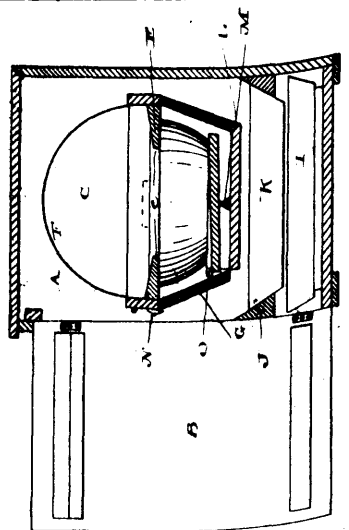
19057 Kuhlman's Automatic Grain Weighing Apparatus.



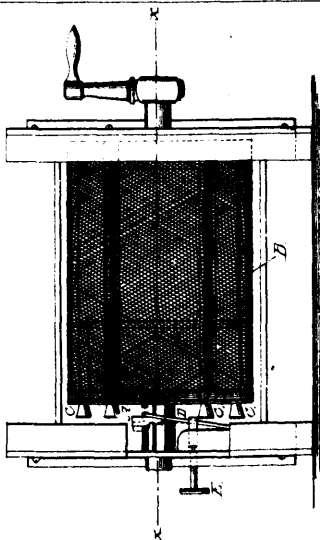
19058 Corbin and Hill's Combined Harrow and Seeder.



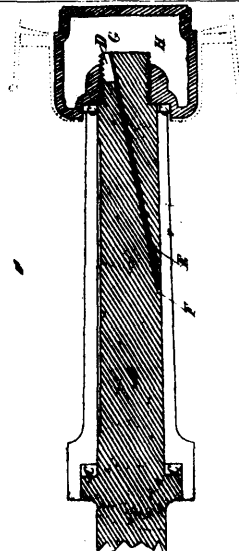
19059 Doherty and Sies' Two-Wheeled Vehicle.



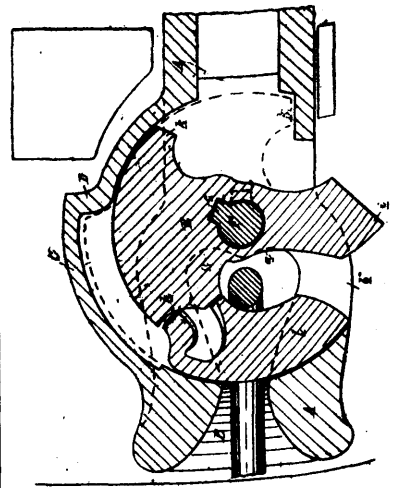
19061 Carmichael's Cylider Sifter.



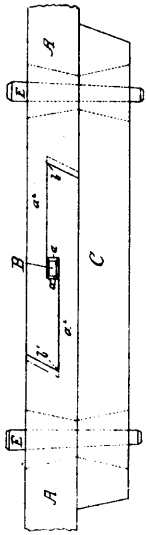
19062 Fiske's Flour Bolt.



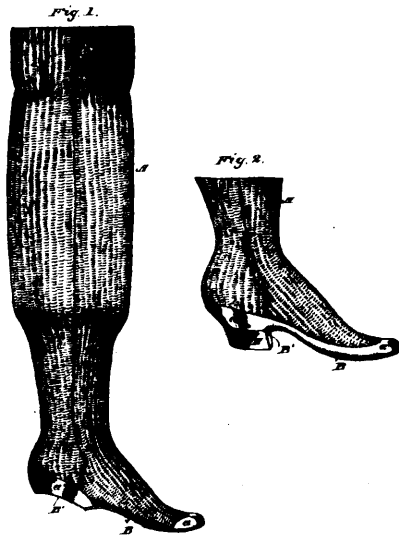
19063 Carrier's Self-Oiling Axle.



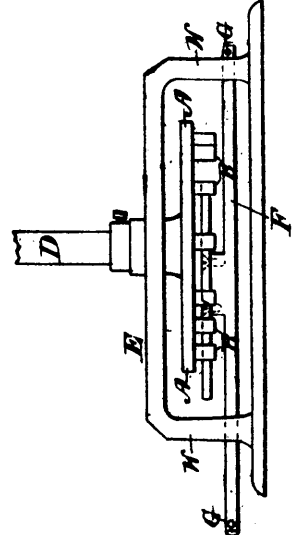
19064 Kiely's Car-Coupling.



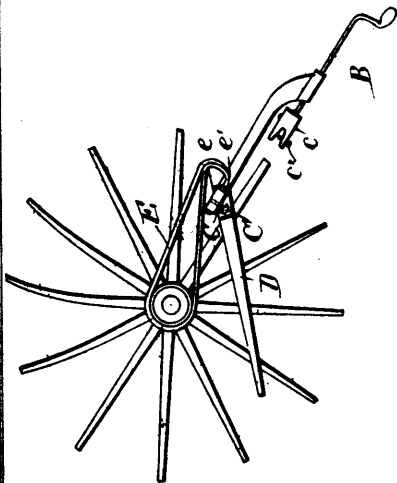
19065 Belanger's Scarfed Joint for Timber Beams.



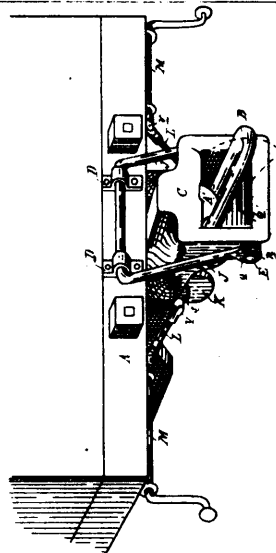
19066 King's Leggin.



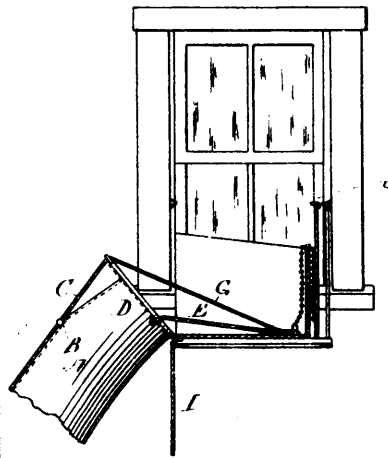
19067 Park's Mechanical Movement.



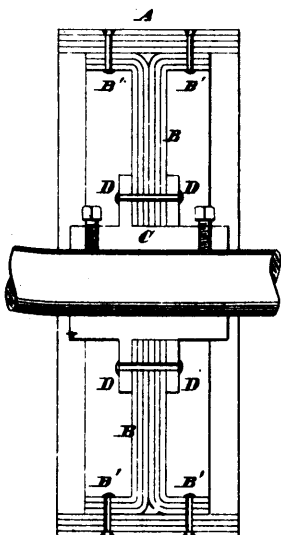
19068 Hosler's Machine for Forming Tenons on Spokes and Boring and Drilling.



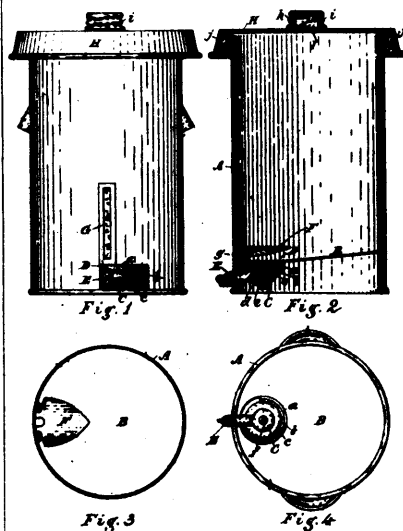
19069 Mark's Car-Coupler.



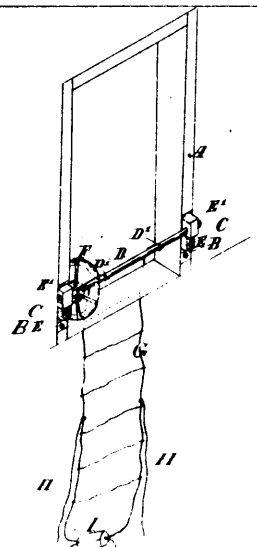
19070 Fairbanks' Fire-Escape and Fire-Escape Support.



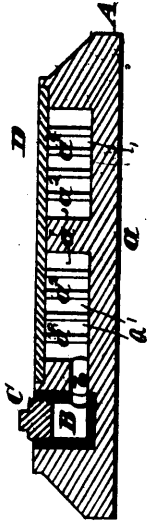
19071 Caldwell's Pulley.



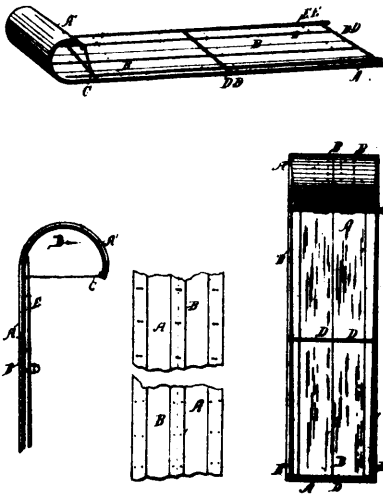
19072 Keirshead's Creamer.



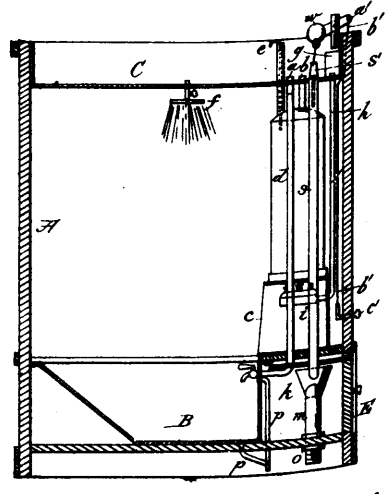
19073 Ingersoll's Fire-Escape or Life-preserver.



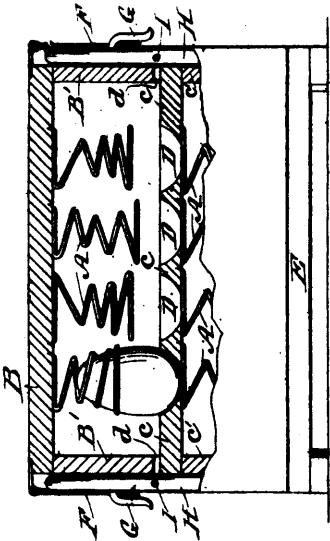
19074 Crutinger's Inking Pad.



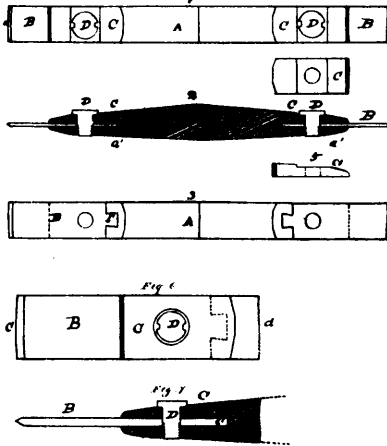
19075 Lane's Toboggan.



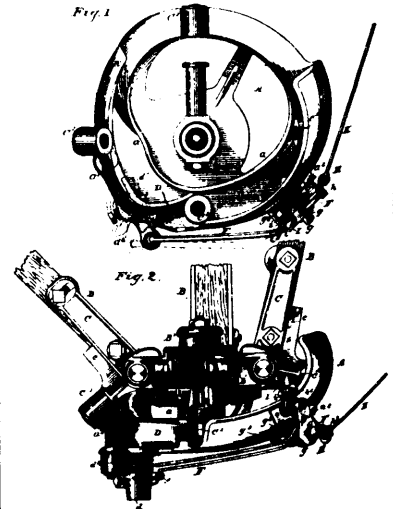
19076 Backus' Combined Bathing Apparatus and Commode.



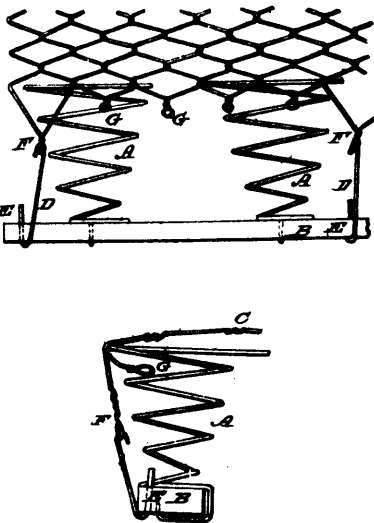
19077 Harris' Egg Carrier.



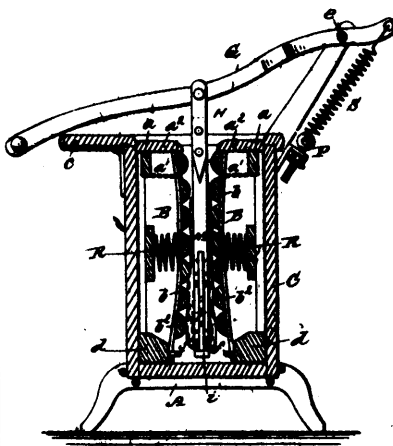
19078 Granger's Millstone Pick.



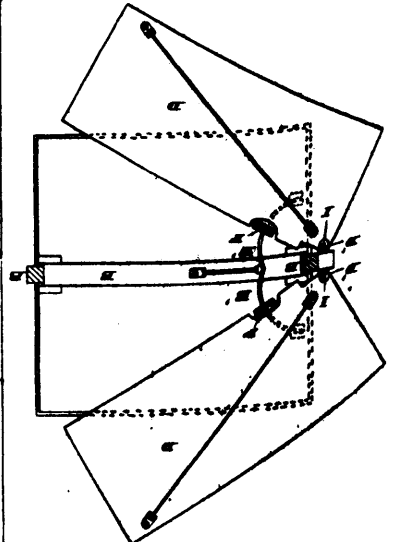
19079 Fildmore's Harvester Rake.



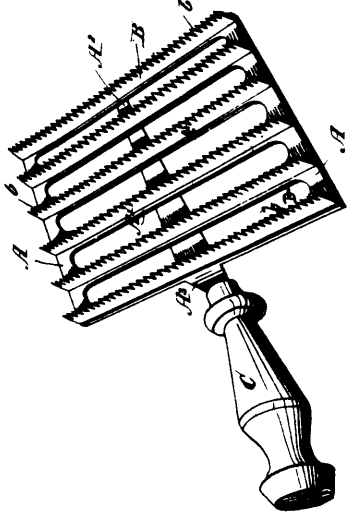
19080 Keith's Spring Bed Bottom.



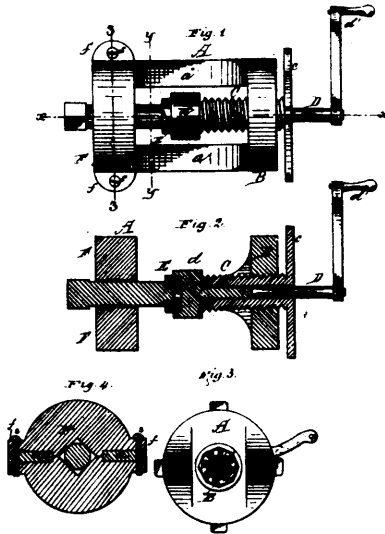
19081 Hardwick's Washing Machine.



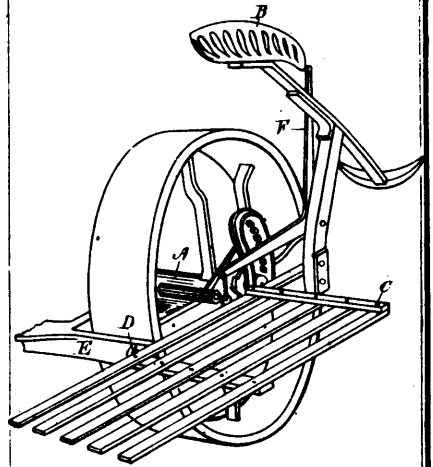
19082 Thackston's Self-Closing Hatchway.



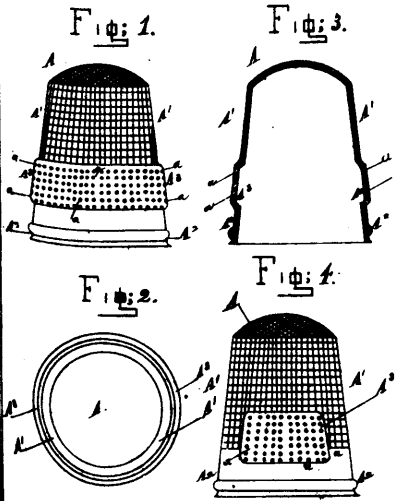
18083 Warren's Curry Comb.



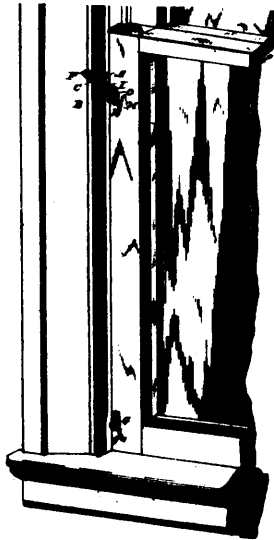
18084 Wright's Wheelwright's Tool.



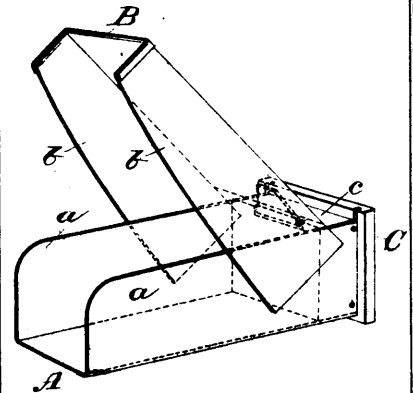
18085 Seiberling's Grain Binding Harvester.



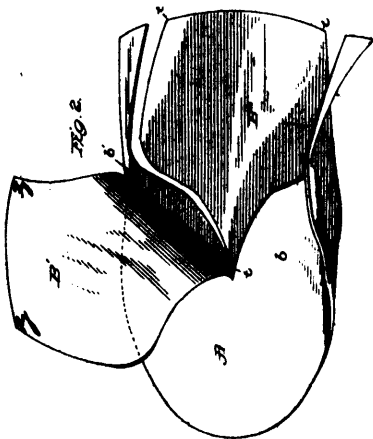
18086 McCartney's Sewing Thimble.



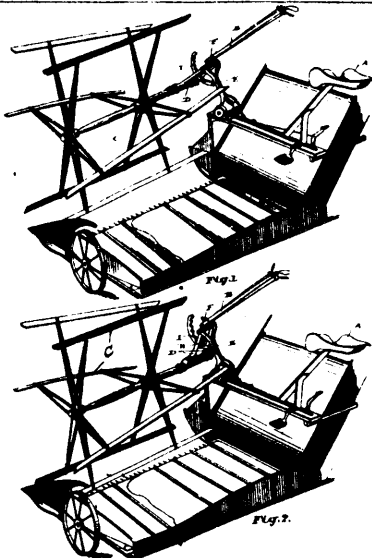
18087 Asimont's Sash-Holder.



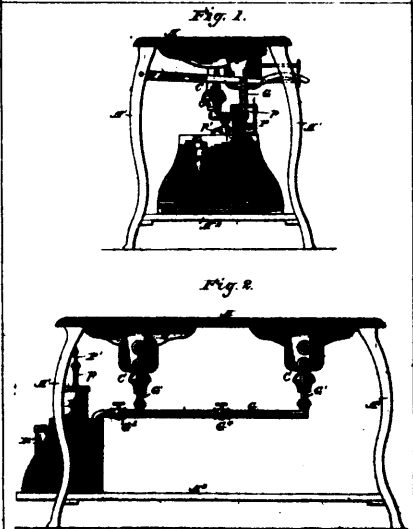
18088 Hoffman's File for Papers.



18089 Sleeper's Improvements in Manufacturing Shoes.



18090 Harris' Harvester.



18091 Brainard's Hydro-Carbon Vapour Stove.

Fig. 1.

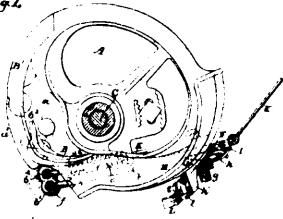
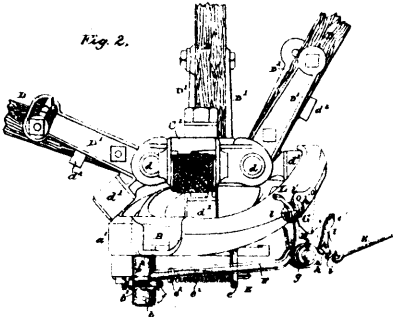
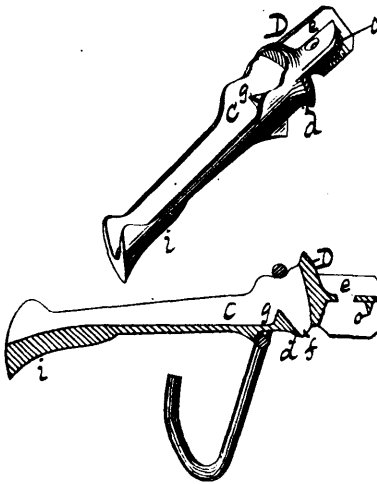


Fig. 2.



19092 Pridmore's Harvester Rake.



19093 Post's Sap Spout.

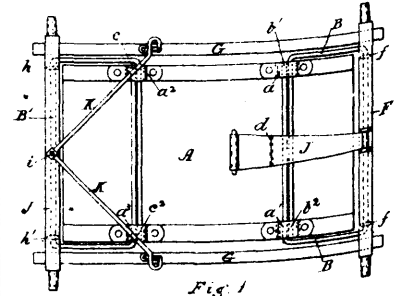


Fig. 1

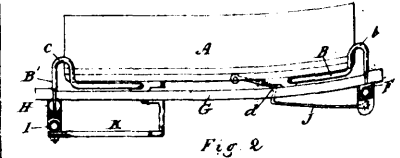
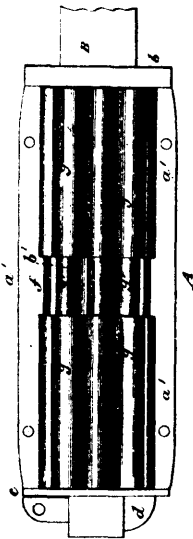
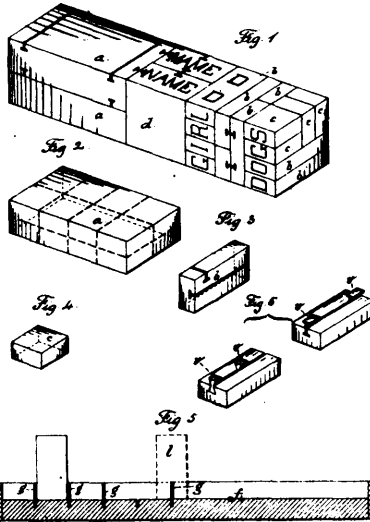


Fig. 2

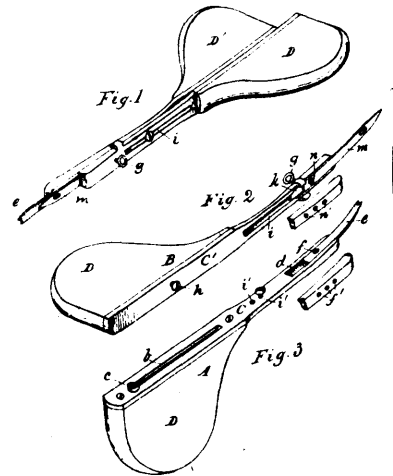
19094 Budd's Torsion Spring.



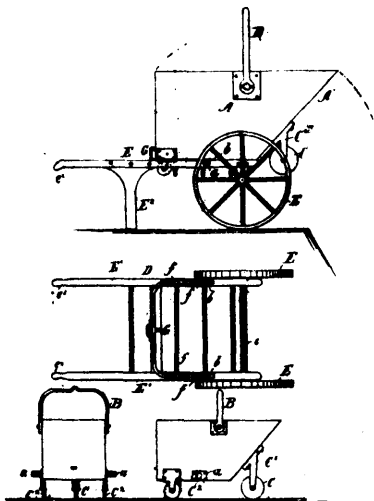
19095 Parvin's Axle and Axle Box.



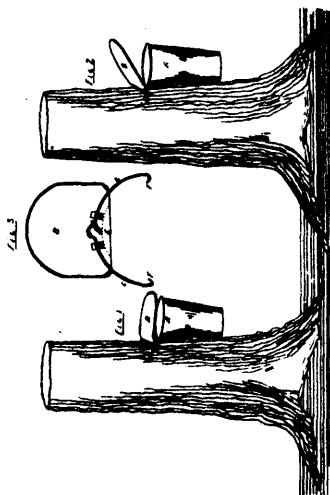
19096 Scott's Toy Blocks.



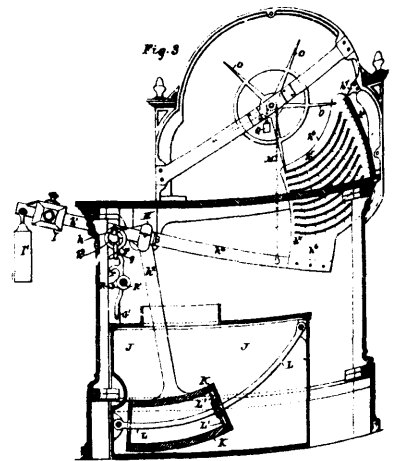
19097 Park's Embroidering Machine



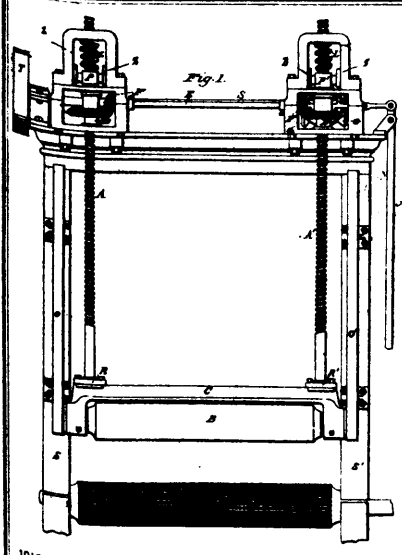
19099 Brown's Hoisting Bucket



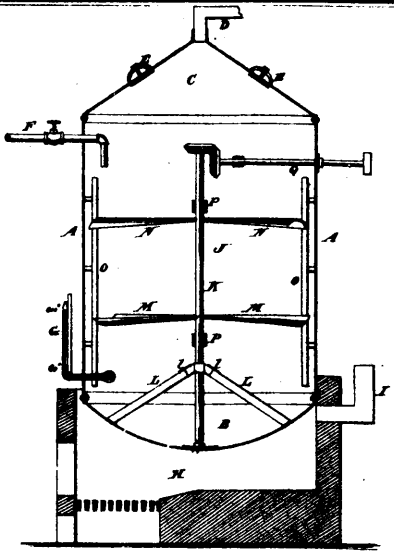
19100 Wood and Potter's Cover for Sap Bucket.



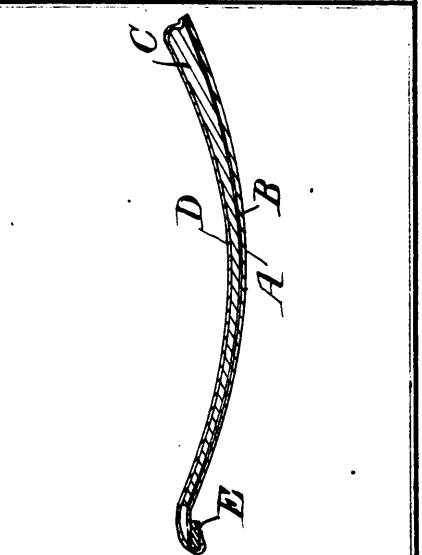
19101 Wolner's Weighing Machine.



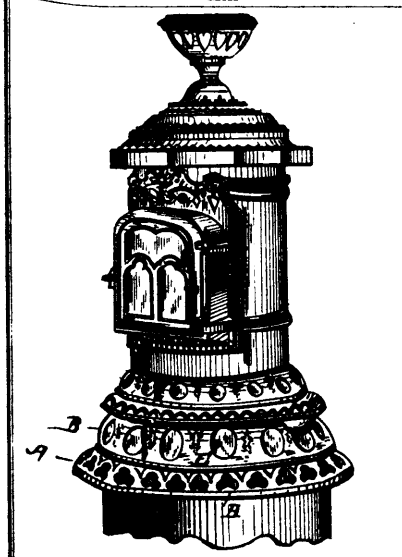
19102 Wickes' Press Roller Gear of Gang Saw Mill.



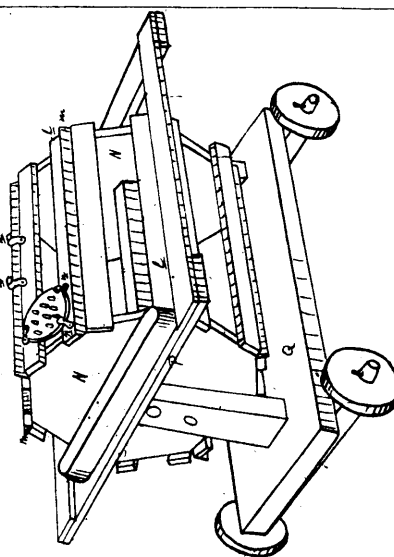
19103 Gill's Lubricating Oil.



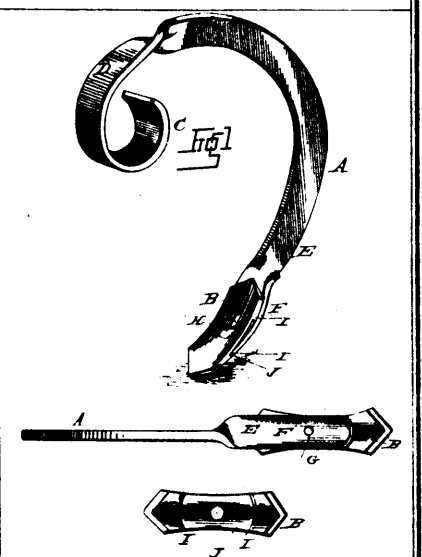
19104 Pagett's Riding Saddle.



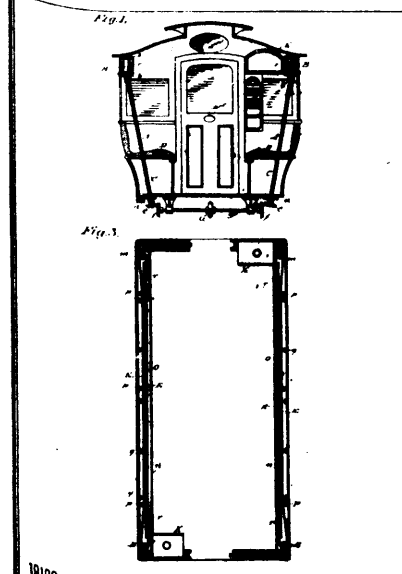
19106 Keyser's Stove.



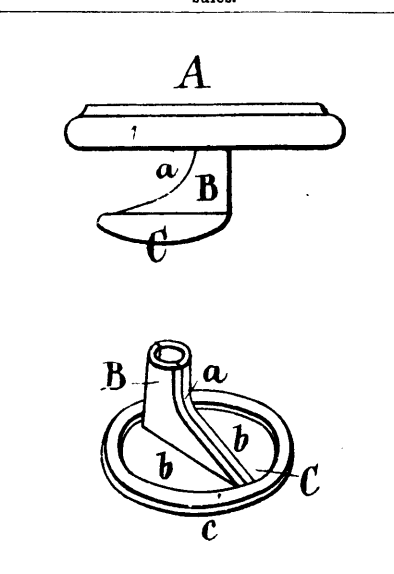
19107 Krehbel's Manufacture of Gelatine Capsules.



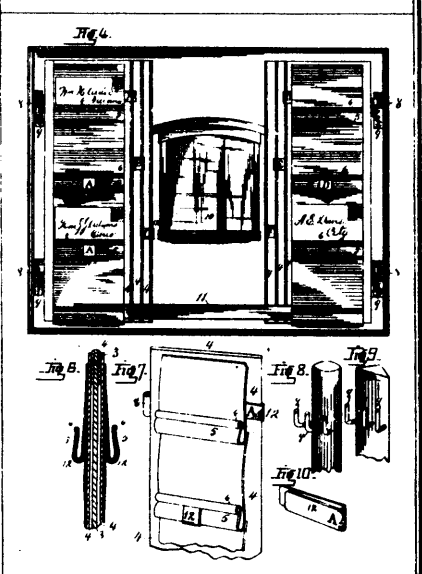
19108 Stanton's Harrow-Tooth.



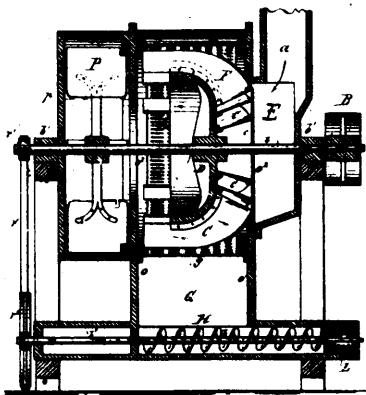
19109 Bowles' Advertising Device.



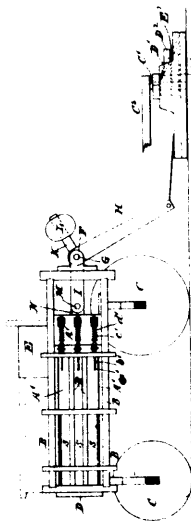
19110 Smitten's Button and Stud.



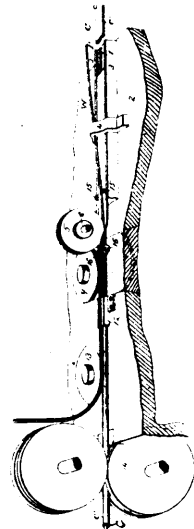
19111 Gray's Postal Cabinet.



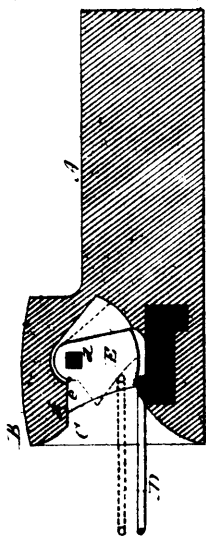
19112 McIntyre's Method of and Apparatus for Separating Dust from Air.



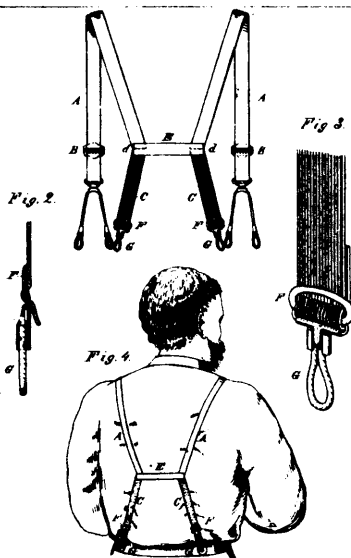
19113 Lord's Press for Hay, &c.



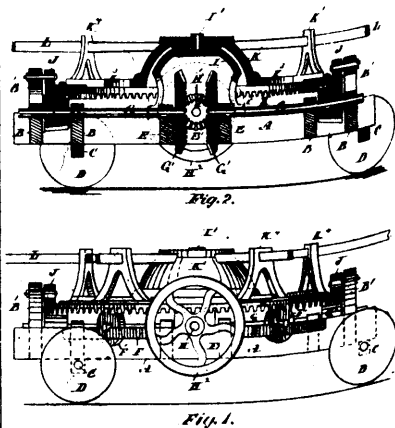
19114 Smith's Process and Apparatus for Covering Wire for Electrical Purposes.



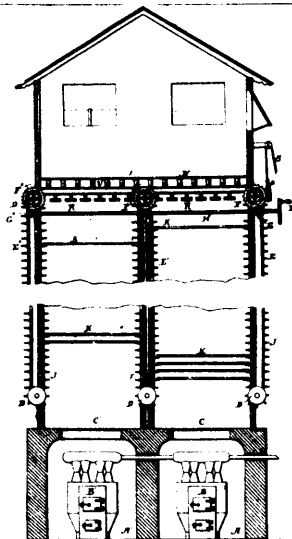
19115 Granger's Car-Coupling.



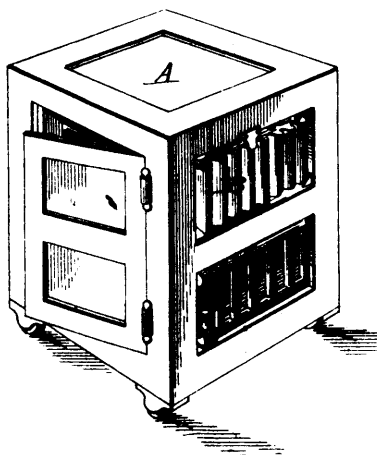
19118 Atwood's Suspender.



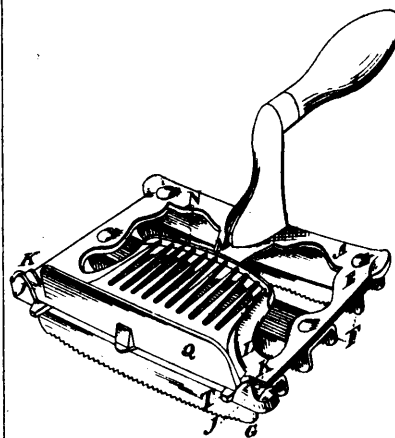
19117 Sandford's Horse Power.



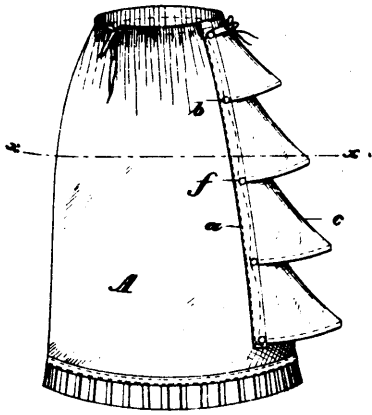
19118 Langhead and Fleming's Fruit Dryer.



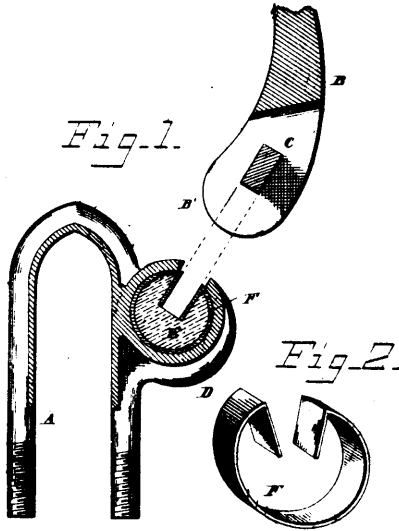
19119 Johnson's Fire Proof Safe and Vault.



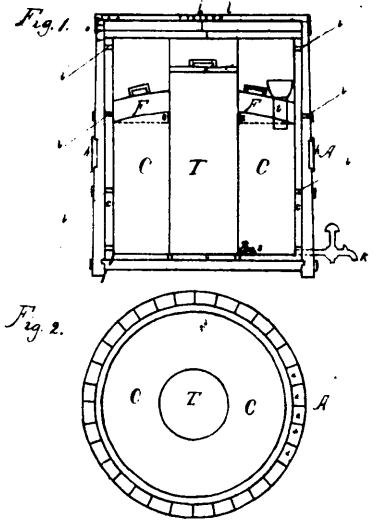
19120 Canfield's Curry Comb.



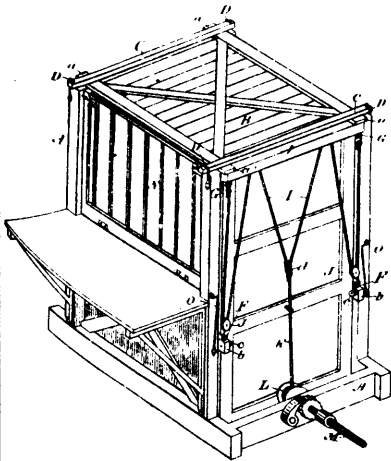
18121 Dryfoos' Skirt.



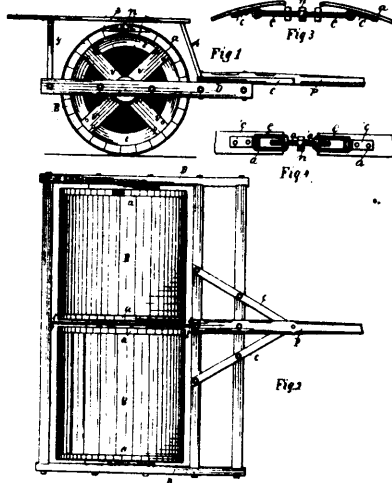
19122 Shanahan's Thill-Coupling.



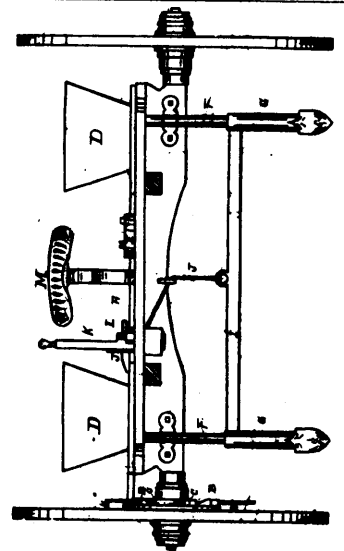
19123 Stanley's Machine for Transporting Cream.



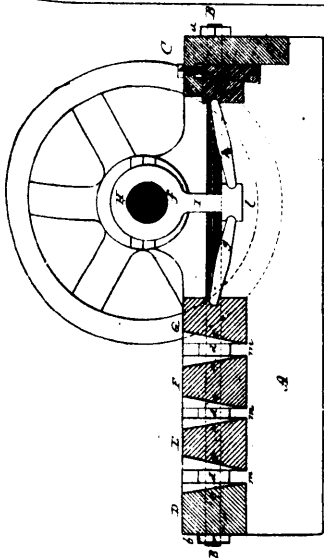
18124 Johnston's Machine for Packing Hay.



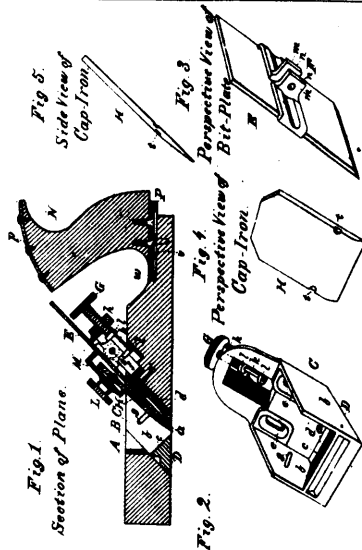
18125 Horton's Land Roller.



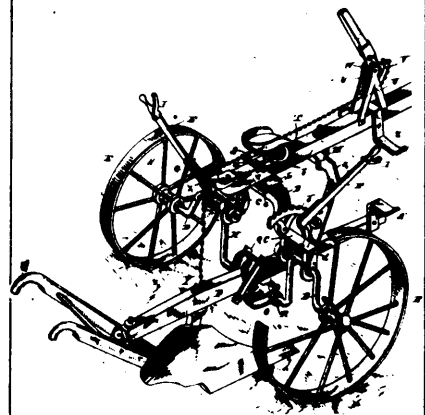
19126 Smith's Seed Planter.



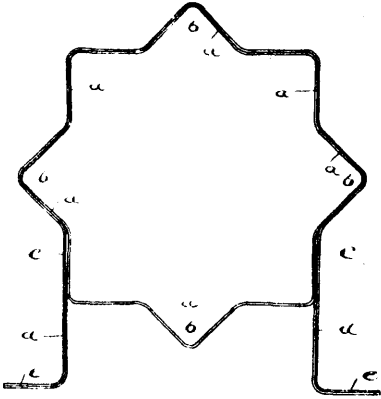
18127 Blake's Stone Crusher.



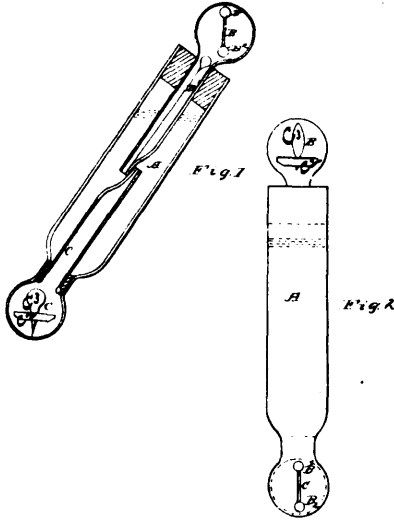
18128 Bridges' Bench Plane.



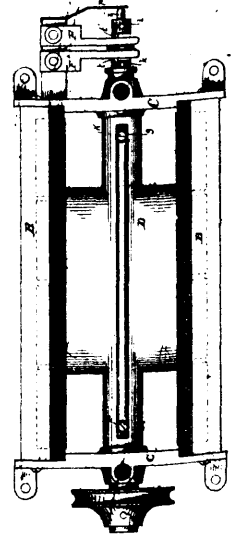
18129 Eberhart's Sulky Plough.



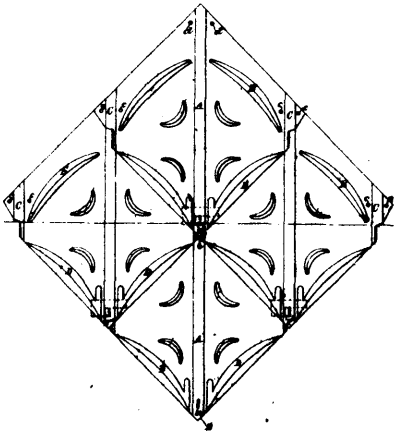
19130 Ringham's Water Conductor.



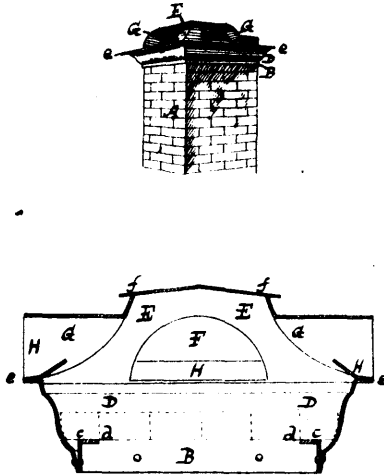
19131 MacGeorge's Clinometer Compasses and Apparatus for Reading their Indications.



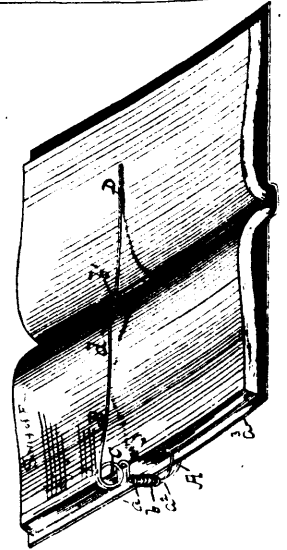
19132 Stabler's Magneto-Generator of Electricity.



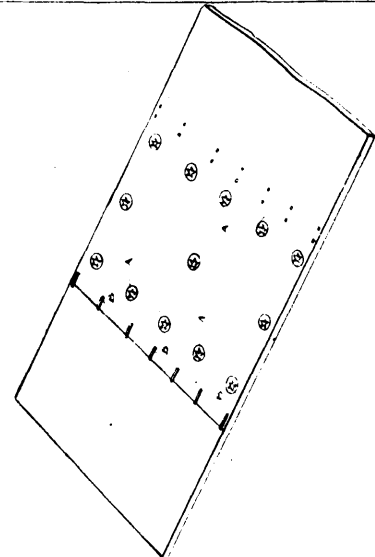
19133 Mott's Metallic Shingle.



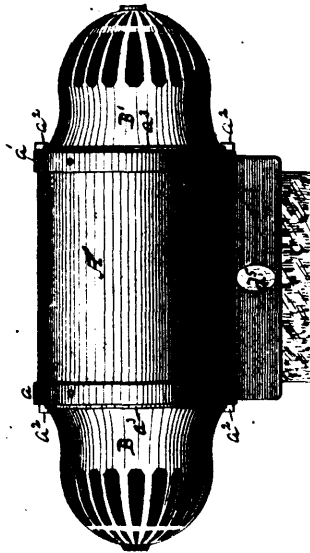
19134 Smith's Chimney Protector.



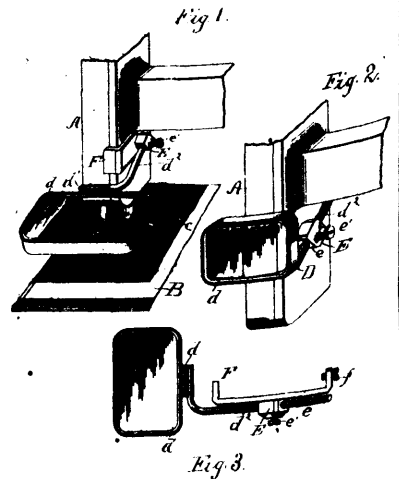
19135 Flint's Leaf-Holder for Books.



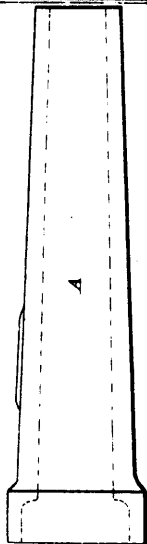
19136 Kiddy's Leather Belting.



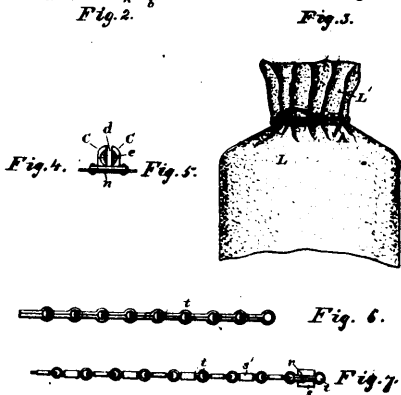
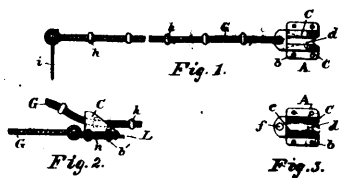
19137 Earl's Device for Holding and Cutting Paper from Rolls.



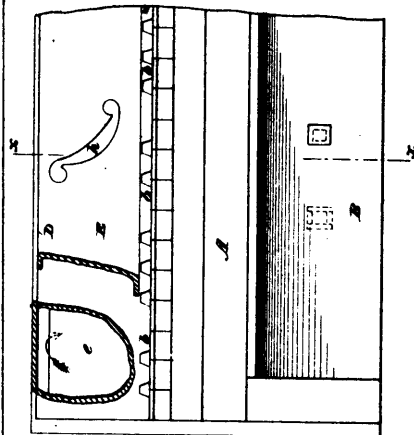
19138 Watts' Optical Attachment for Sewing Machines.



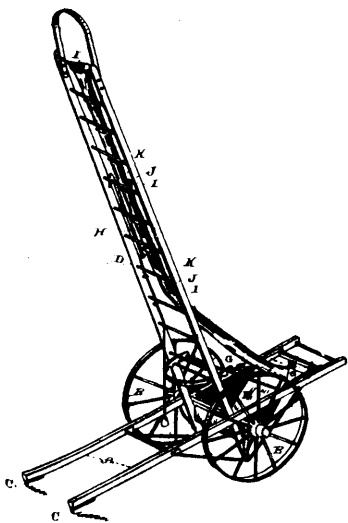
19139 Parmelee's Scalp for Carriage Axles.



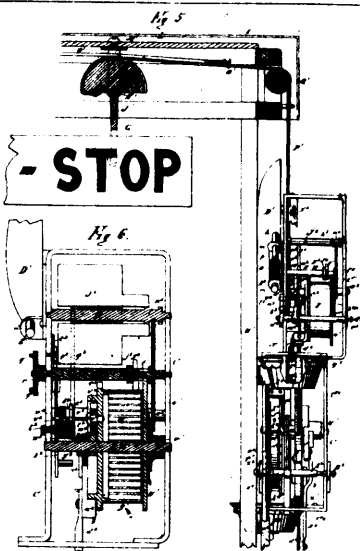
19140 Ladd's Tie for Bags, Bales and Bundles.



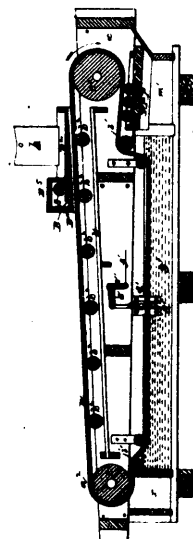
19141 Leighton's Organ.



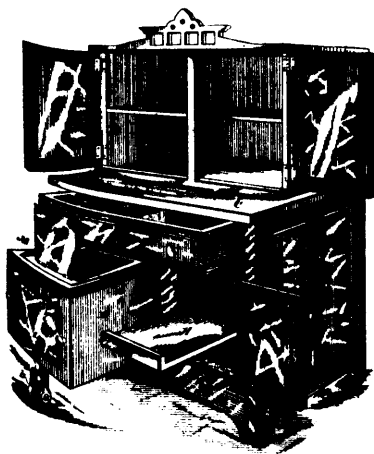
19142 Titus' Portable Ladder for Gathering Fruits.



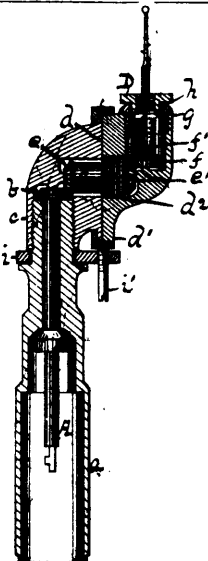
19143 Chase's Pneumatic Railway Signal.



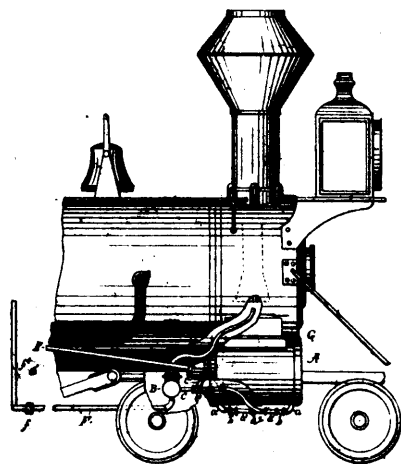
19144 Logan's Apparatus for the Extraction of Gold, &c



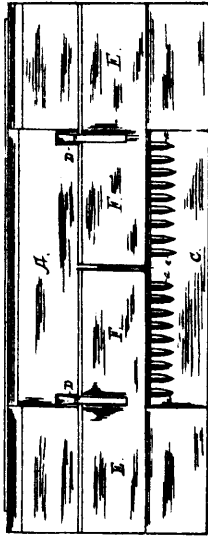
19145 Hanna's Kitchen Cabinet.



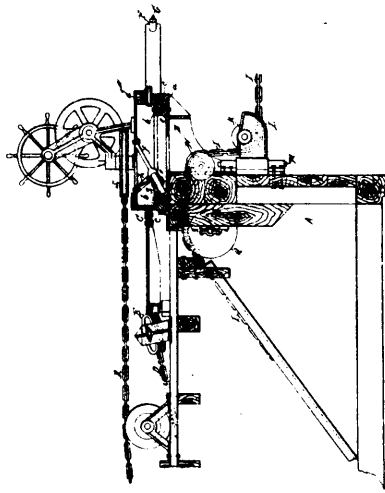
19146 Lincoln's Dental Engine Hand Piece.



19147 Porter's Cylinder Cock Invisible Steam Escape.



19148 Bunker's Fire Box Lining for Cooking Stoves.



19149 Osgood's Dredge.

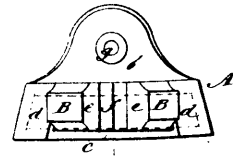


Fig. 1

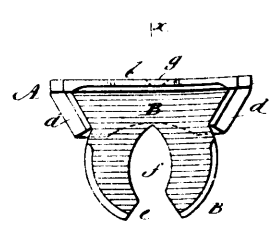


Fig. 2

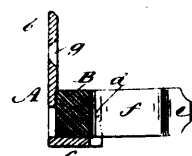
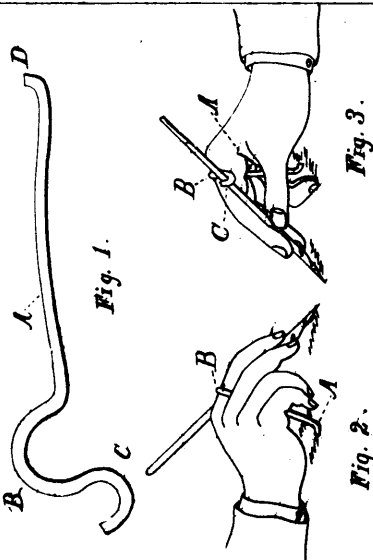
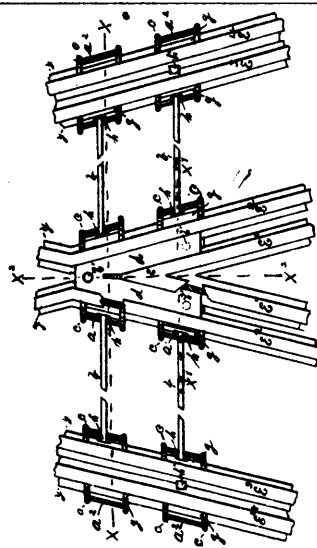


Fig. 3

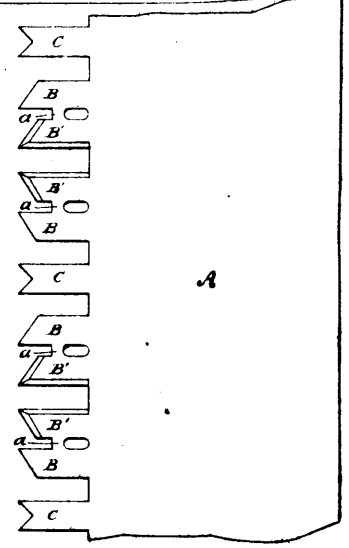
19150 Frazier and Coburn's Broom-Holder.



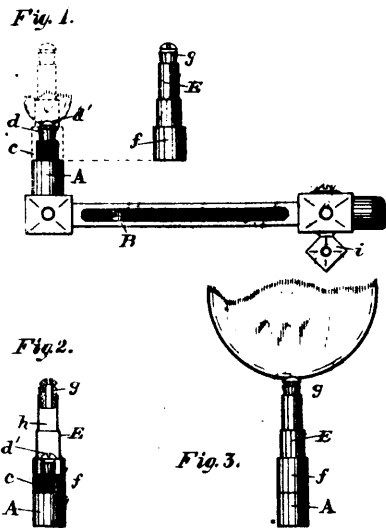
19151 Camson's Pen Staff and Hand Support.



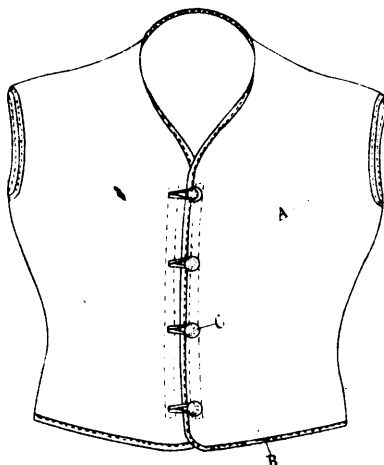
19152 Close's Railway Rail Chair.



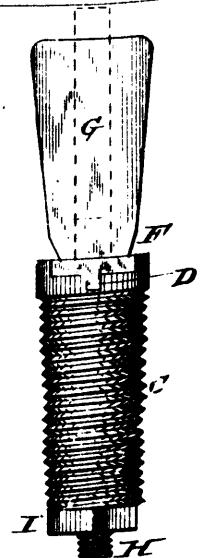
19153 Medill's Cross-Cut Saw.



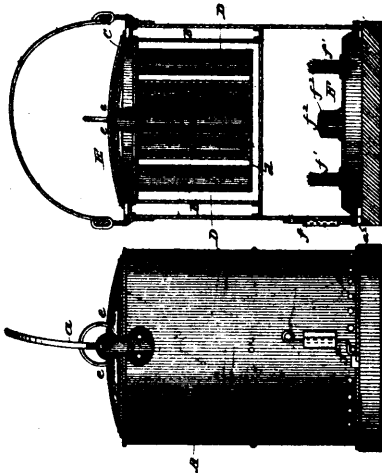
19154 Wilson's Gas Burner.



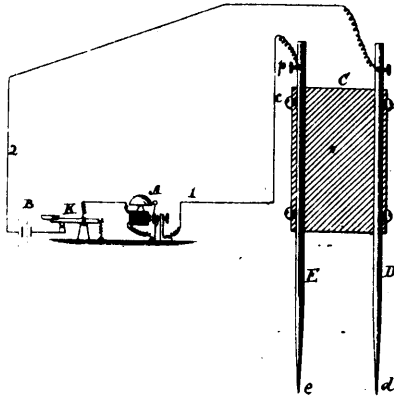
19155 Baker's Manufacture of Undergarment.



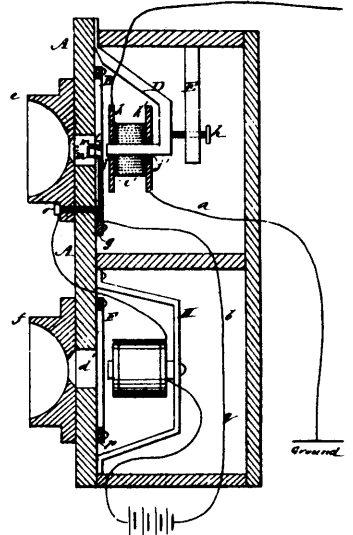
19157 Hornier's Thrashing Machine.



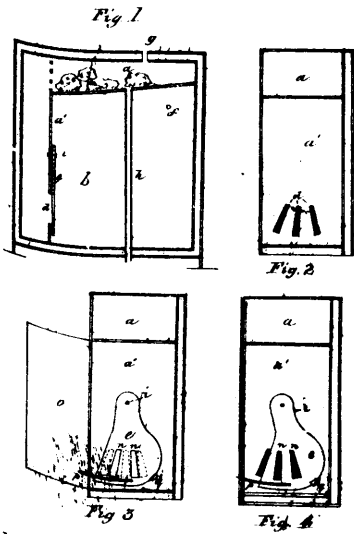
19158 Murray and Gibbs' Apparatus for Thawing Giant Powder and Nitro-Glycerine.



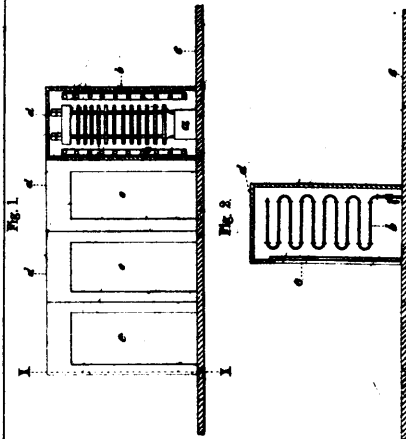
19159 Prince's Mode and Means for Electrically Locating and Following Veins of Metal in the Earth.



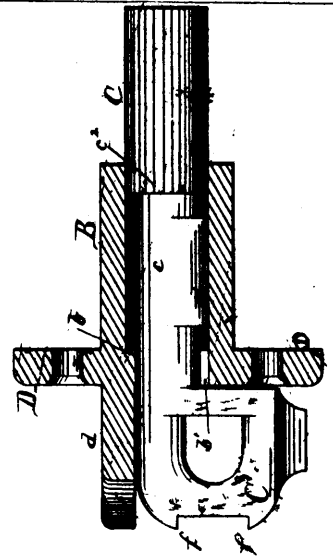
19160 Egan's Telephone.



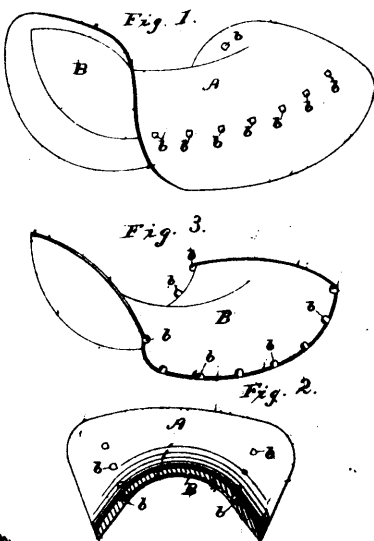
19162 Carllie's Refrigerator.



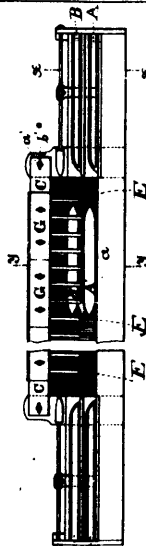
19163 Davidson's Manufacture of Linseed Oil.



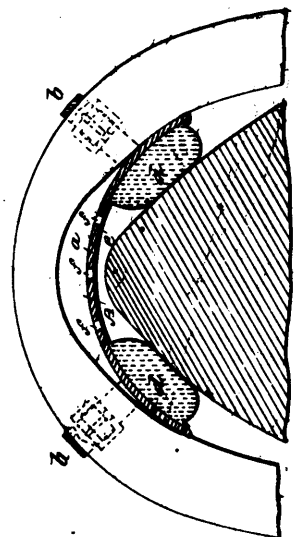
19165 Barnard's Seal Lock.



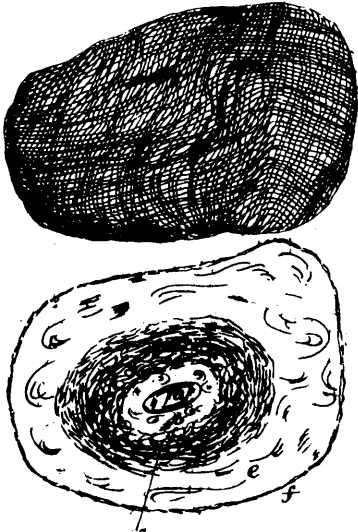
19166 Curtie's Metal Lined Harness.



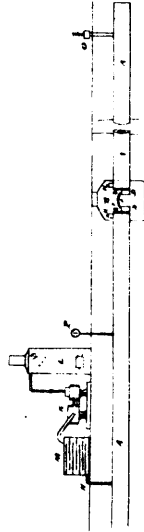
19167 Coupland's Loom for Weaving Double File Fabrics.



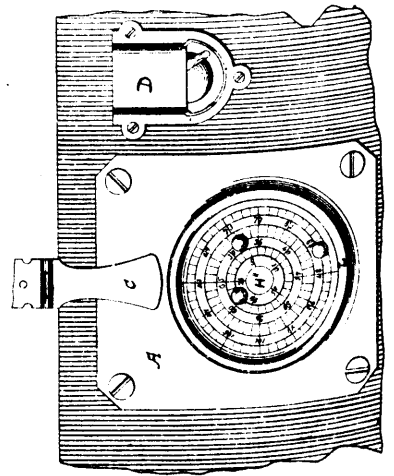
19168 Cochran's Horse Collar Pad.



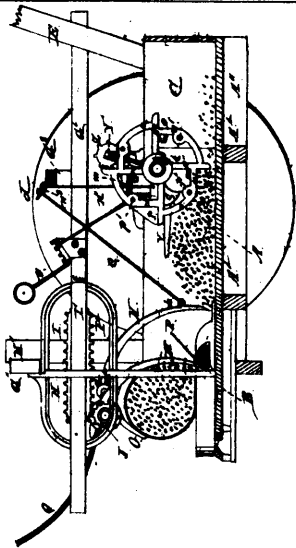
18169 Gamgee's Substitute for Sponges for Medical and other Purposes.



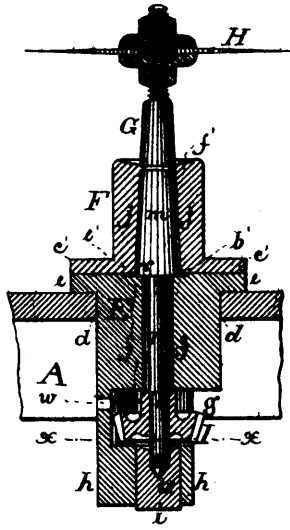
18170 Hunter's Underground Conductor.



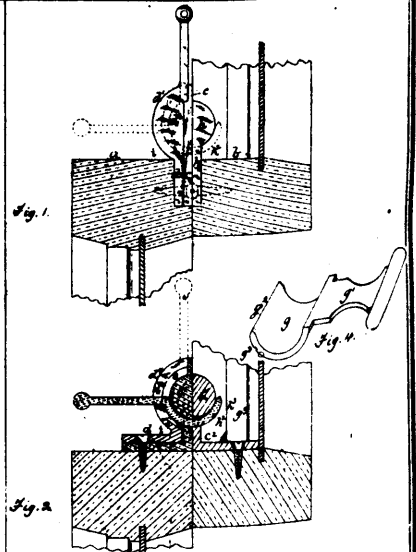
18171 Tregoning's Combination Lock.



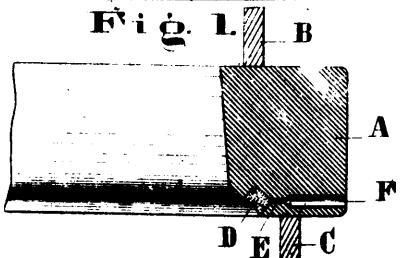
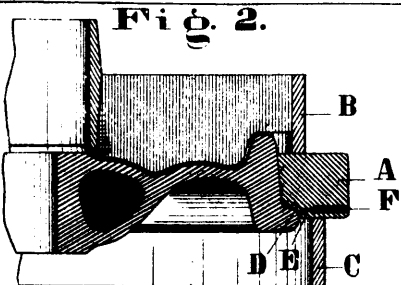
19172 Blood's Grain Binding Harvester.



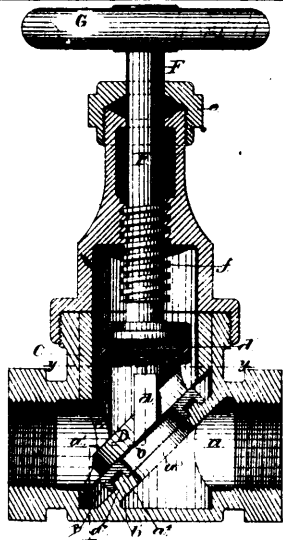
19173 Coupland's Spindle and Bearing for Rotary Cutters.



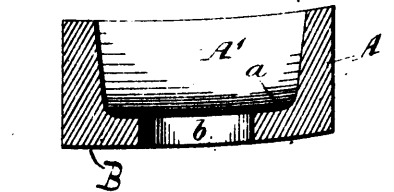
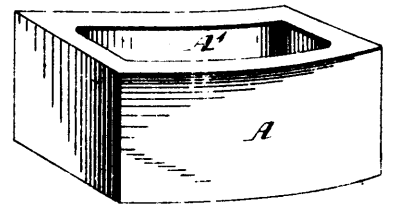
19174 Mathes' Sash Fastener



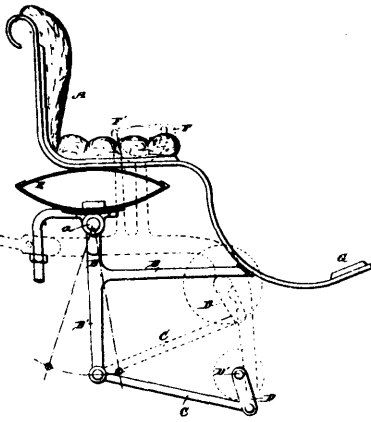
19175 Barr's Car Wheel Chilli.



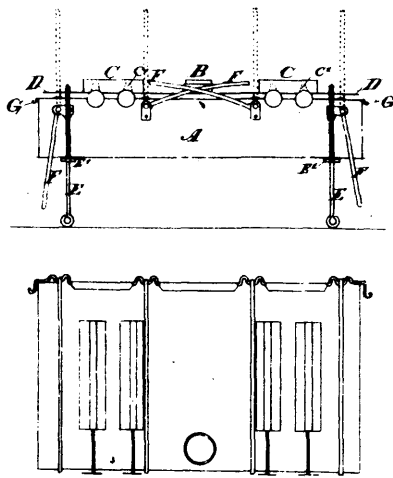
19176 Blessing's Stop Valve.



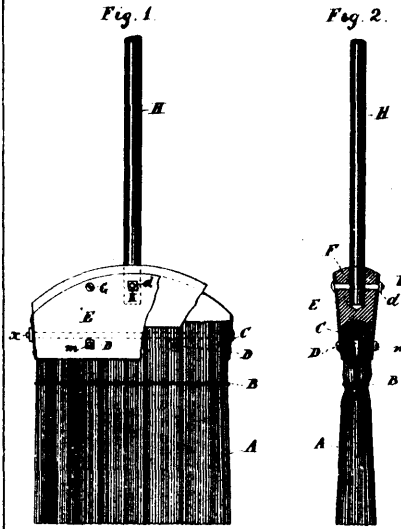
19177 Lee's Building Brick.



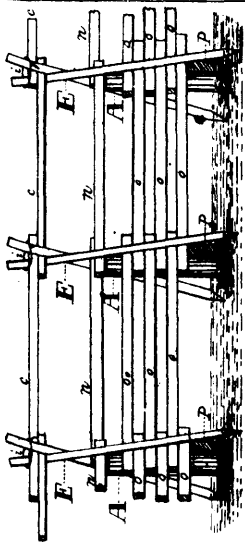
19178 Stephens' Means of Obtaining and Applying Motive Power for Propelling Tricycles, Boats, &c.



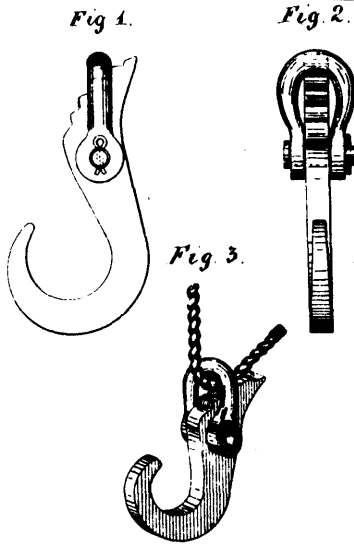
19179 Cameron and Rourke's Coal Oil Stove.



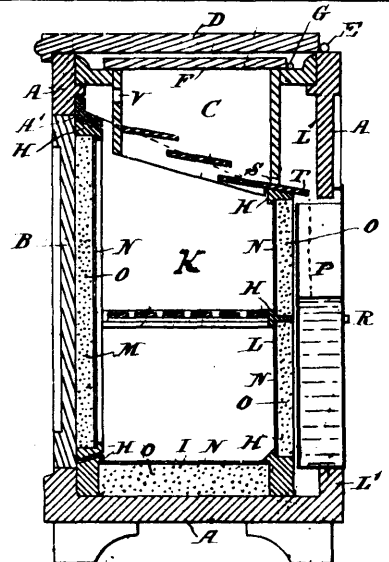
19180 Paine's Broom.



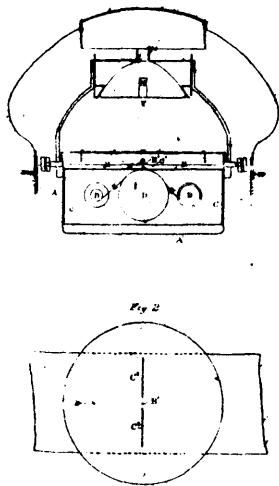
19181 Elliott's Fence.



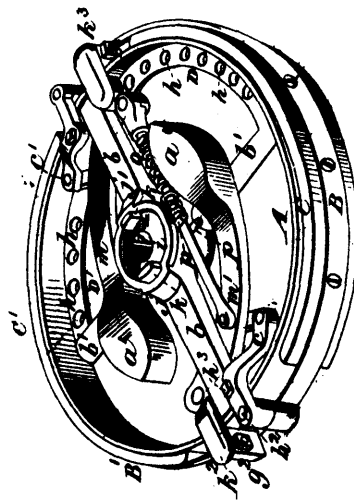
19182 Green's Clutch Hook.



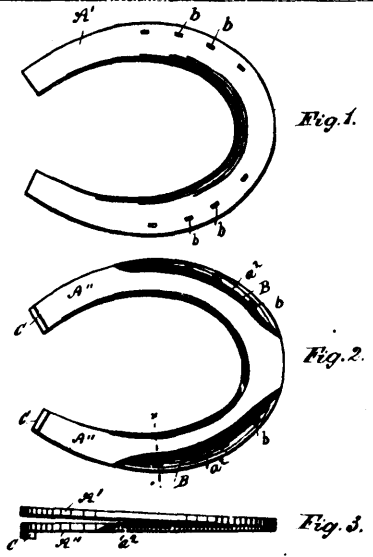
19183 Prowse's Construction of Refrigerators.



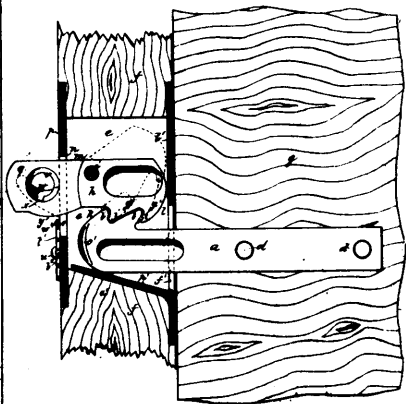
19184 Pickwell's Self-Registering Compass.



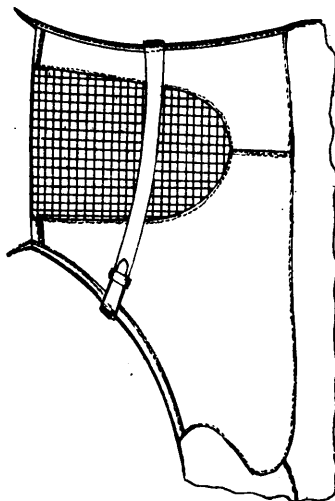
19185 Reeve's Governor for Mechanical Power.



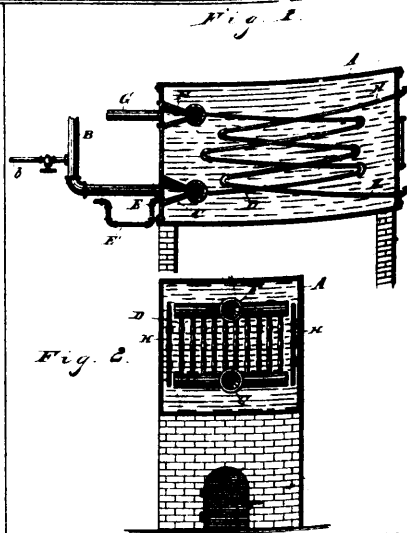
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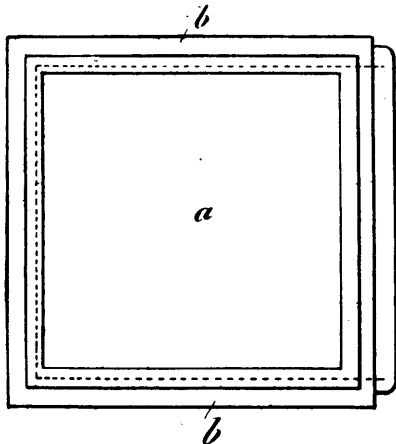
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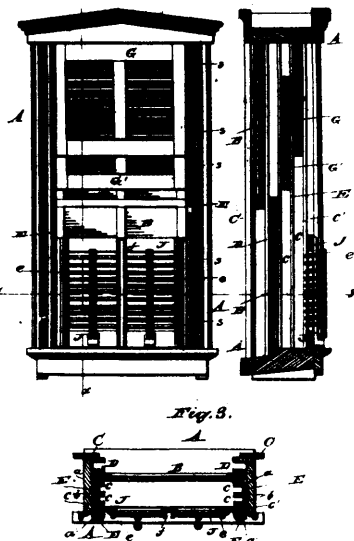
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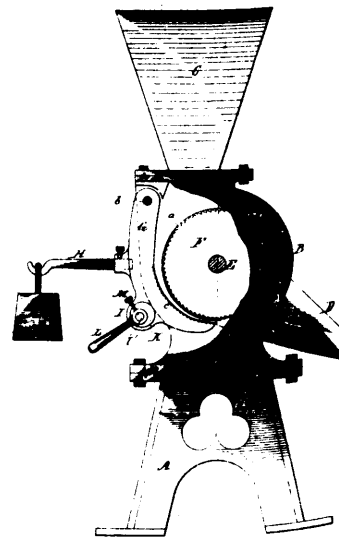
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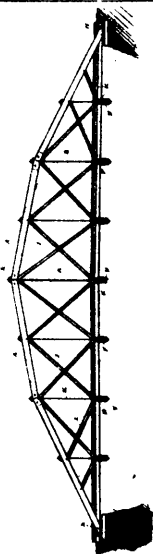
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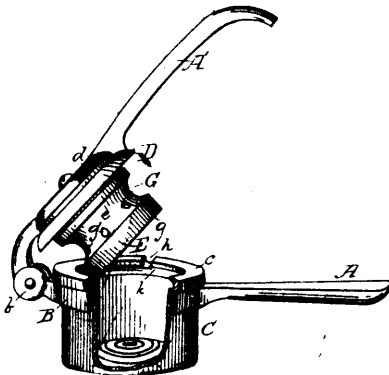
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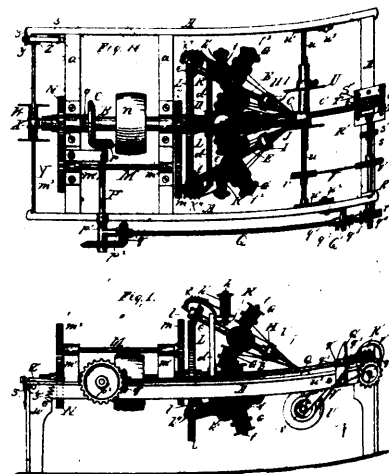
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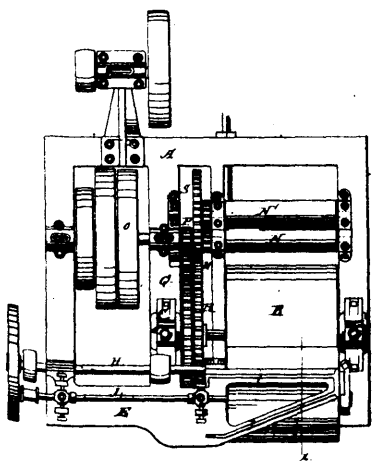
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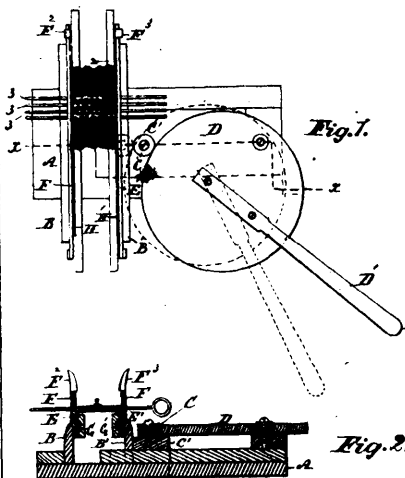
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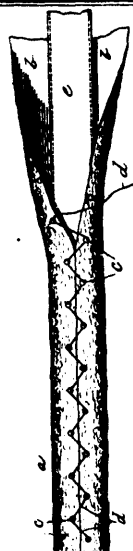
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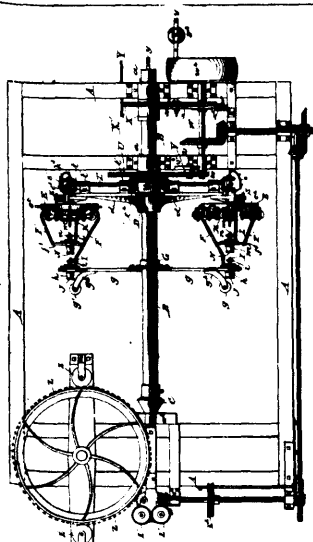
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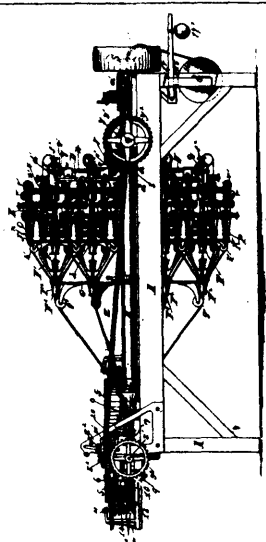
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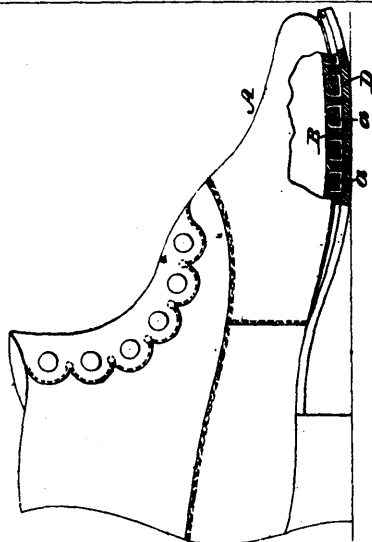
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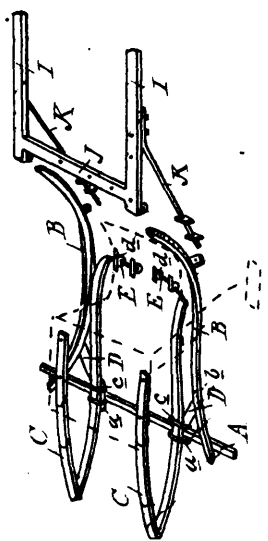
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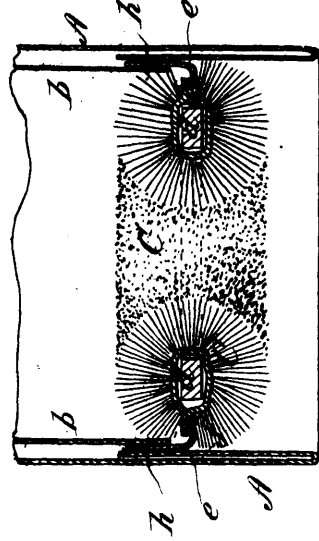
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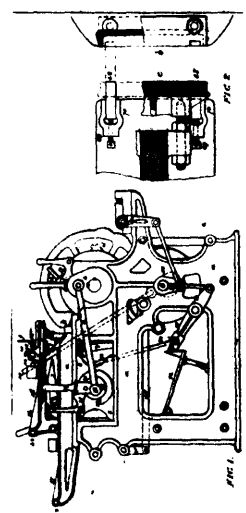
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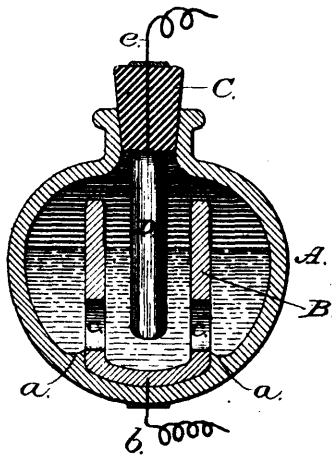
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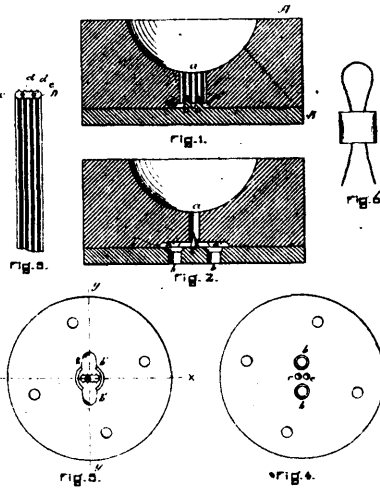
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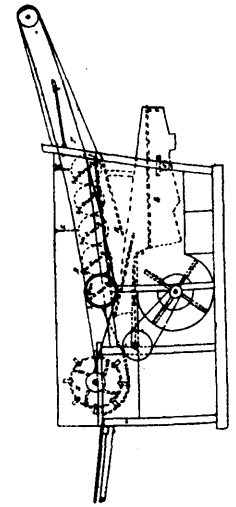
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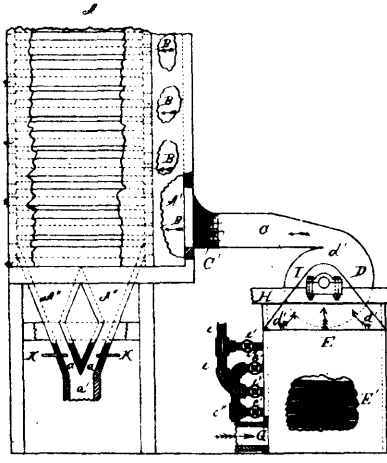
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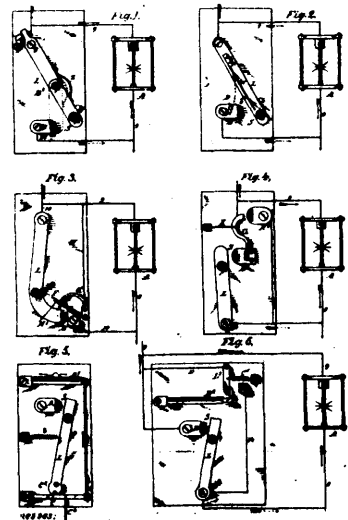
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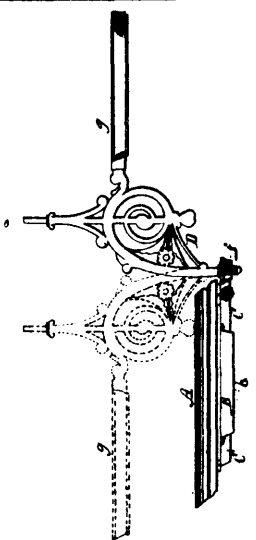
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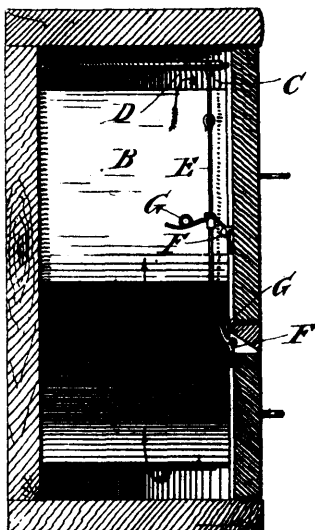
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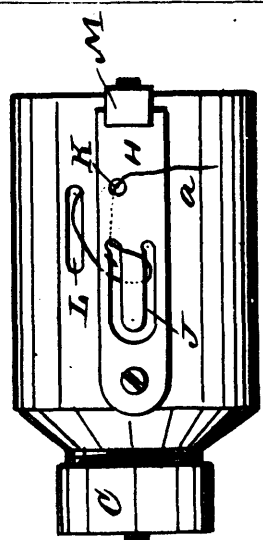
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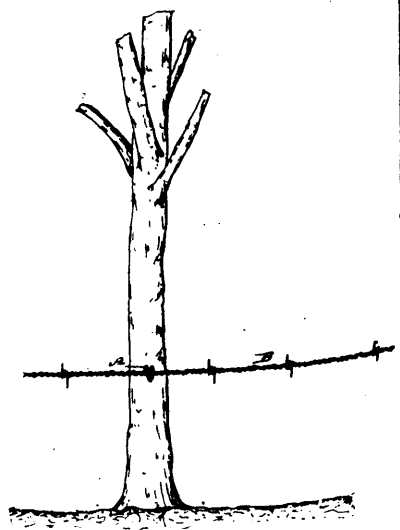
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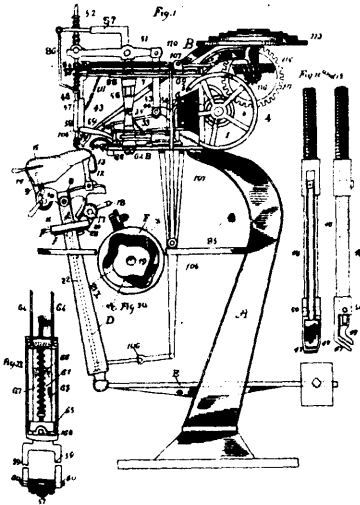
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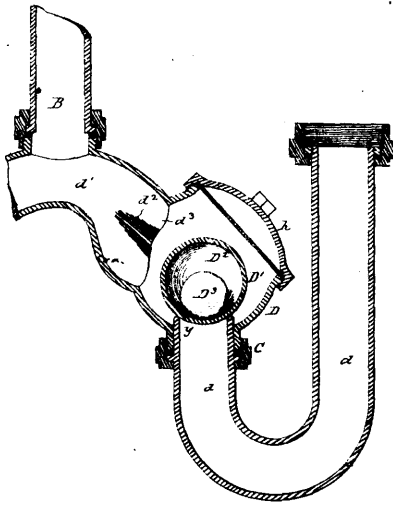
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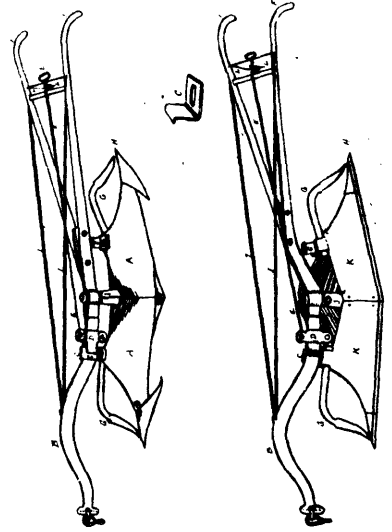
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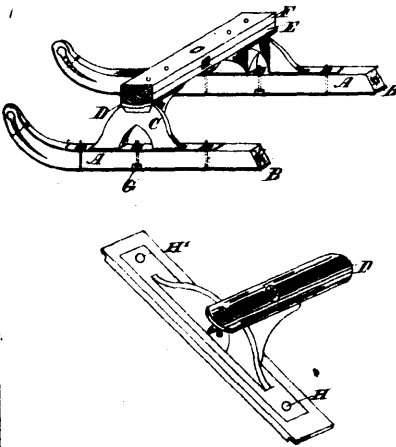
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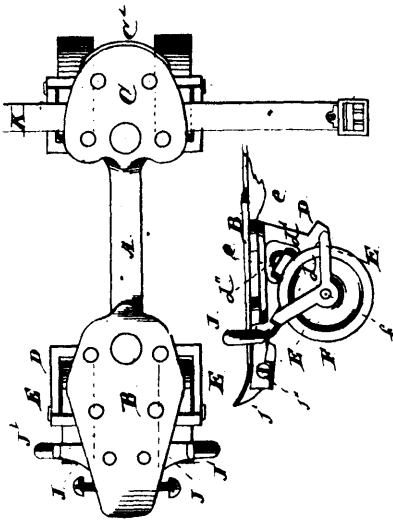
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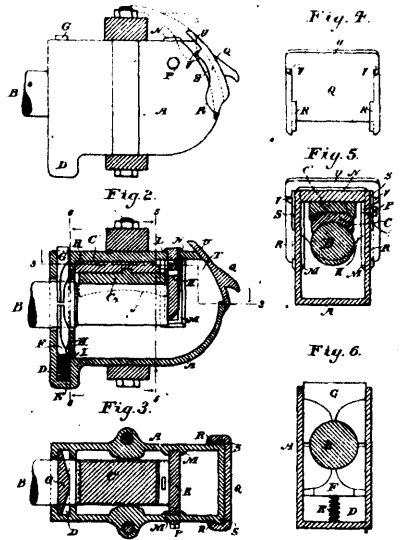
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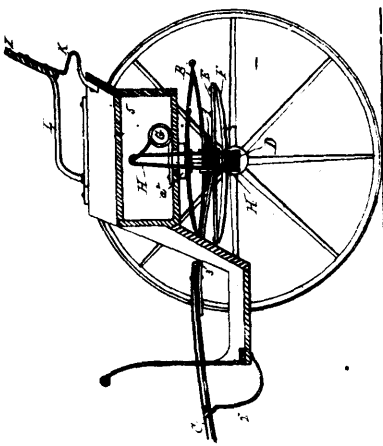
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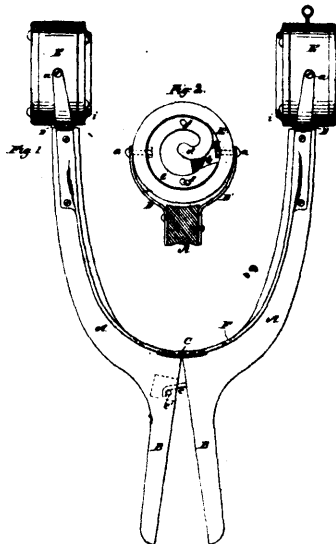
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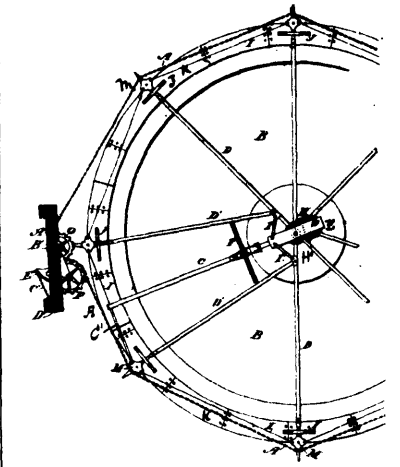
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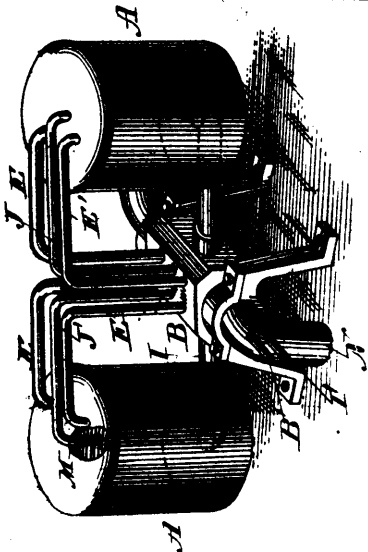
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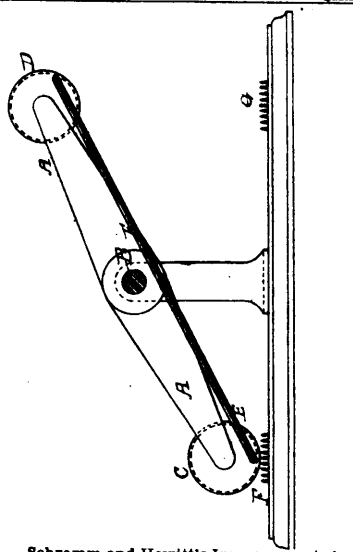
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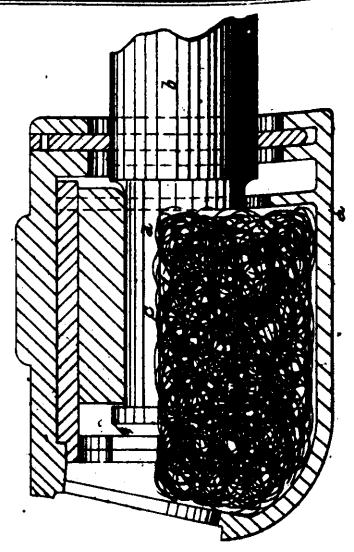
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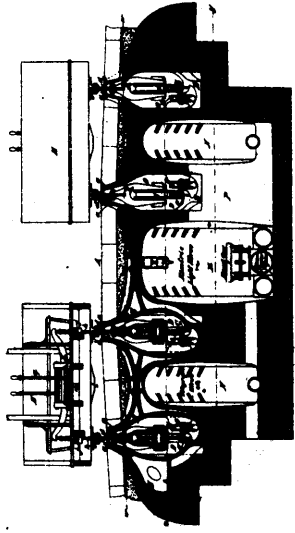
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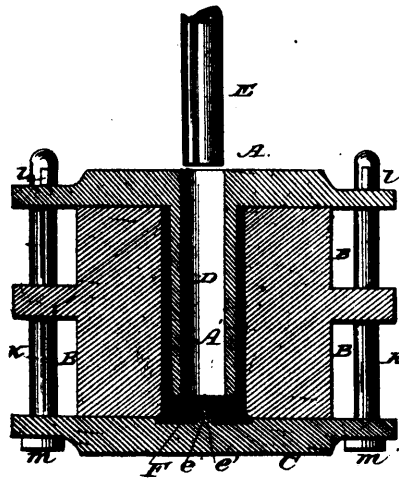
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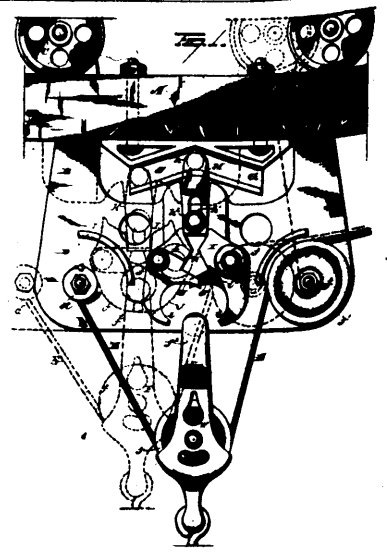
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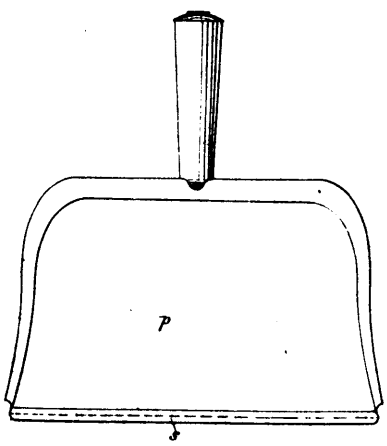
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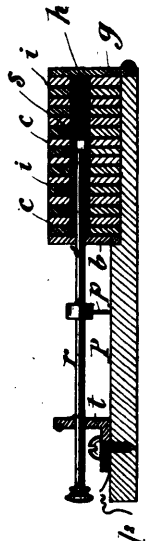
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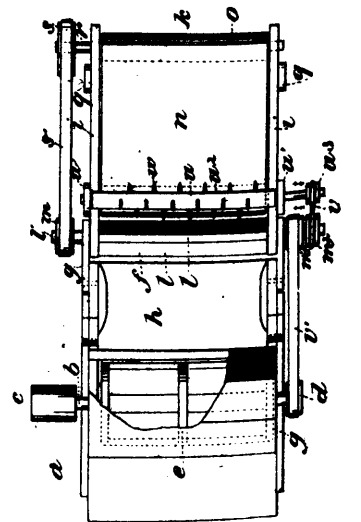
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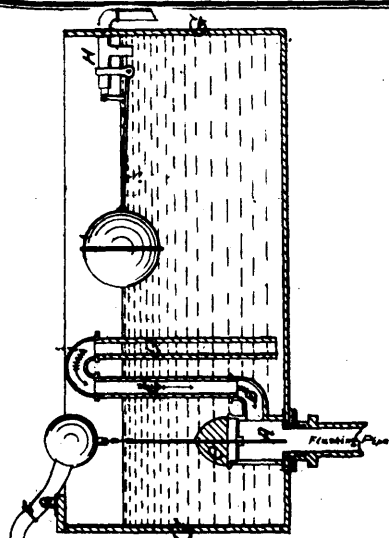
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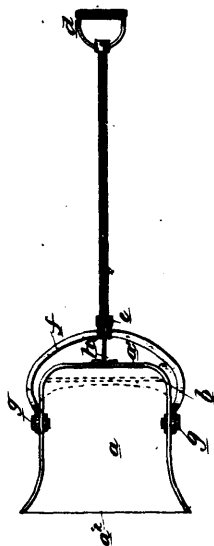
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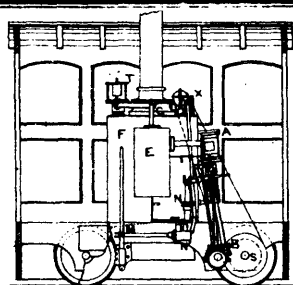


FIG. 1.

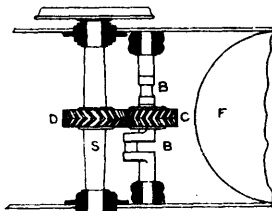
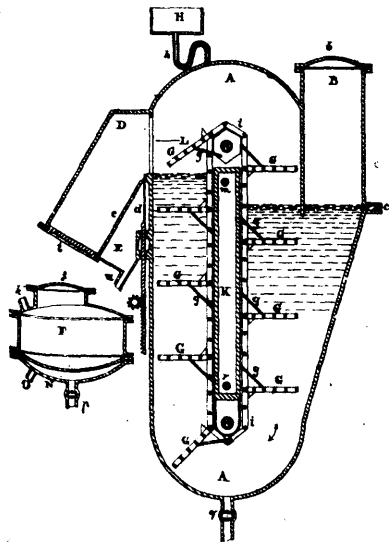


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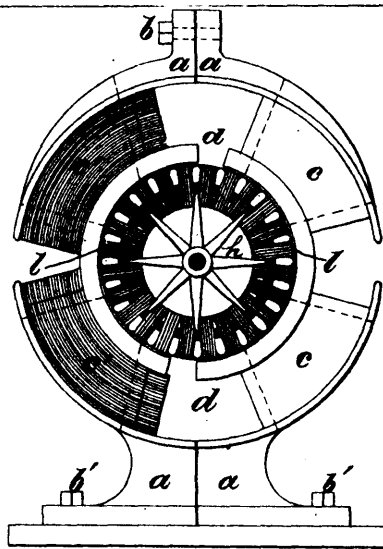
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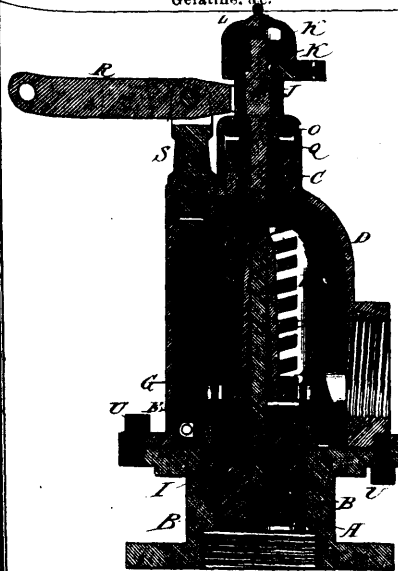
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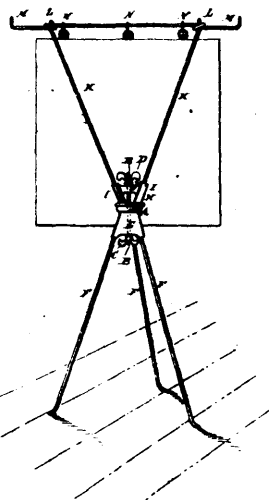
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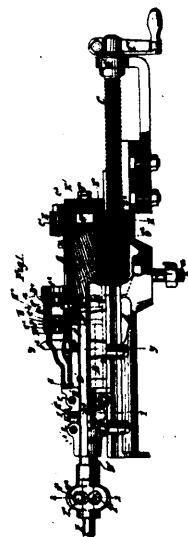
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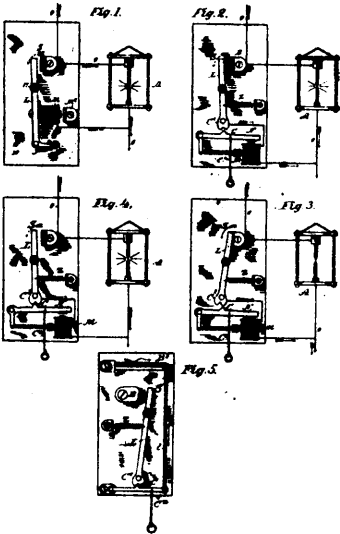
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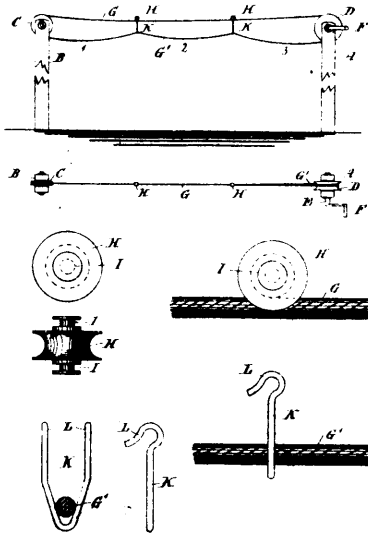
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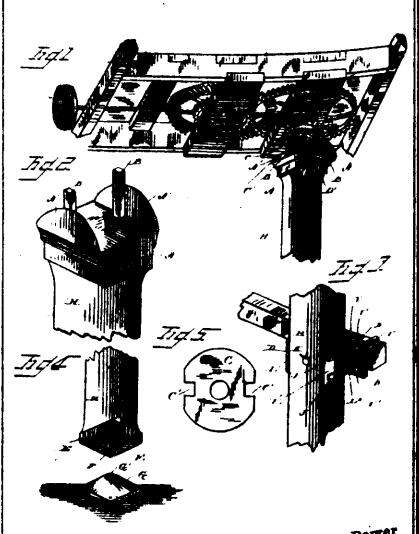
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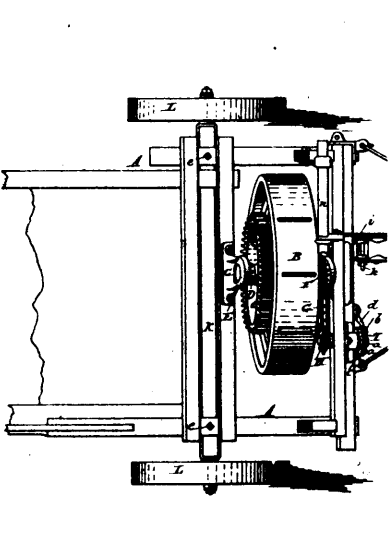
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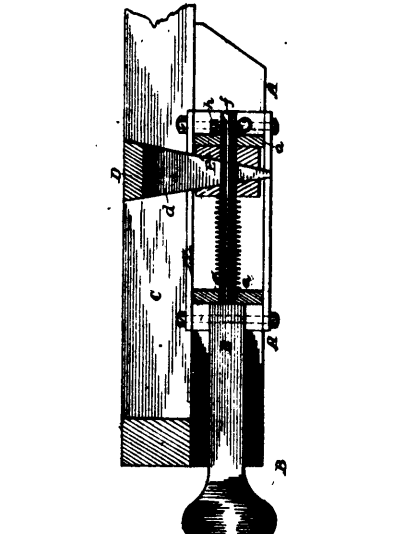
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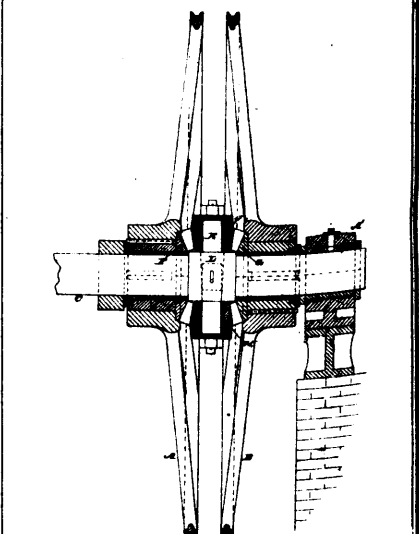
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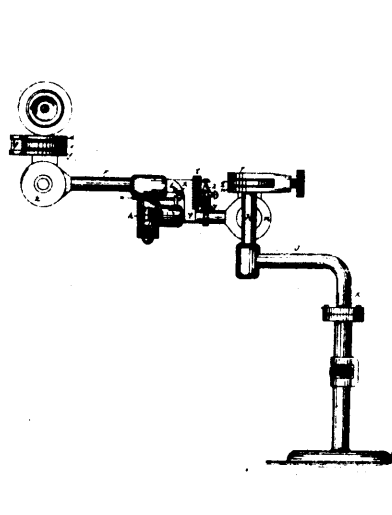
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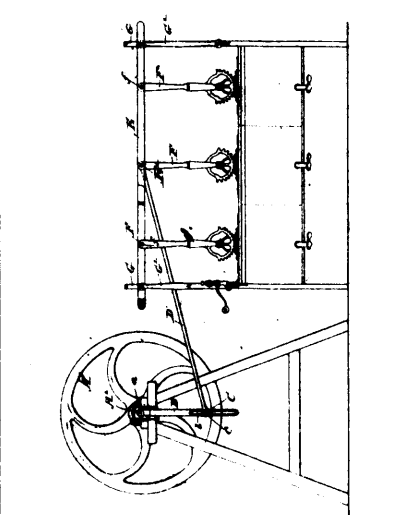
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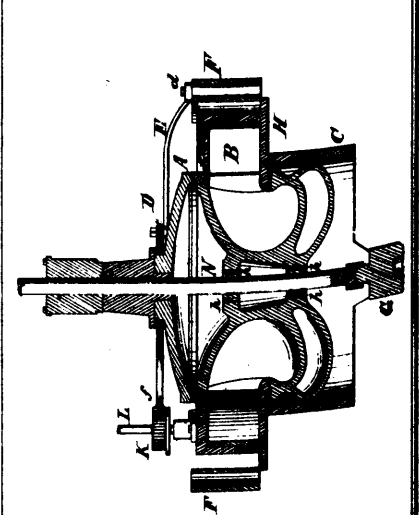
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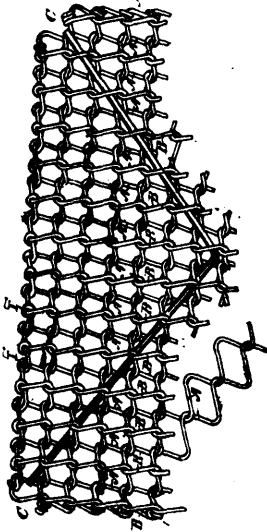
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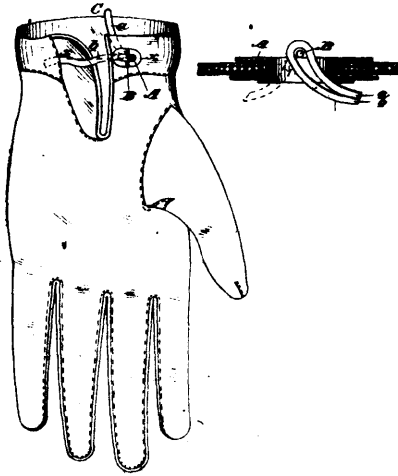
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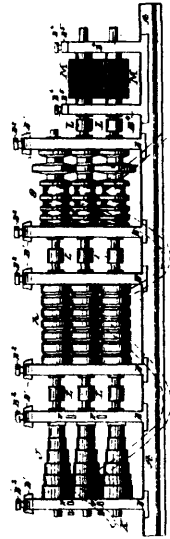
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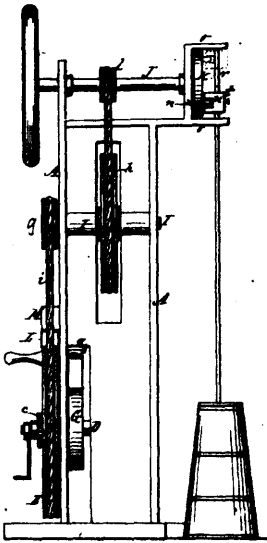
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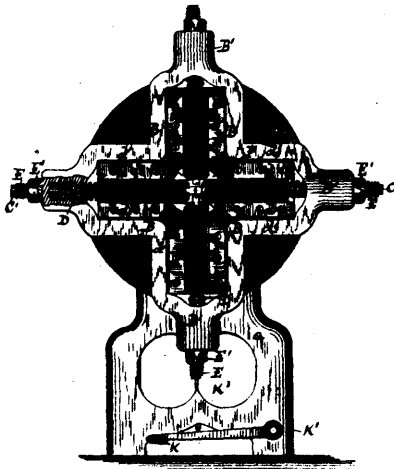
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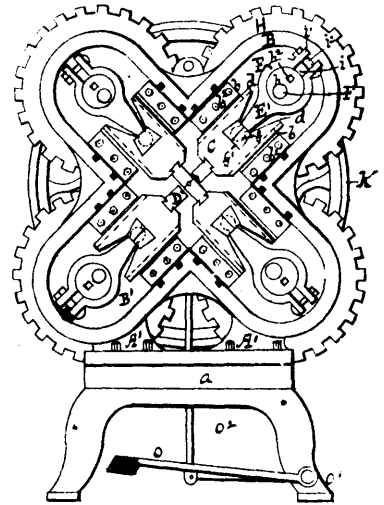
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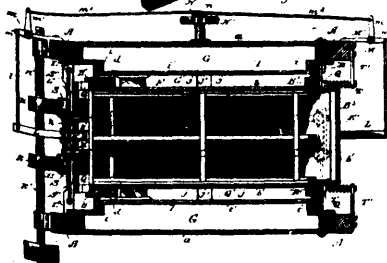
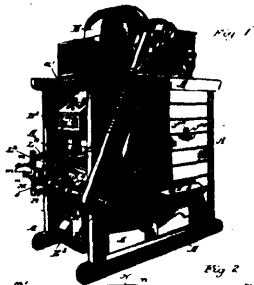
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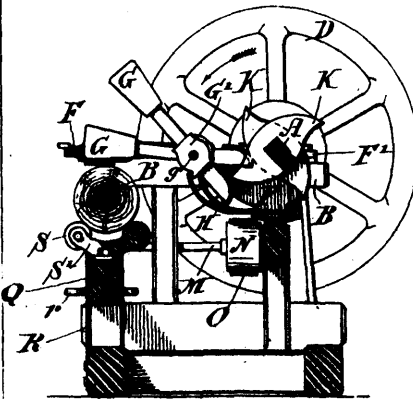
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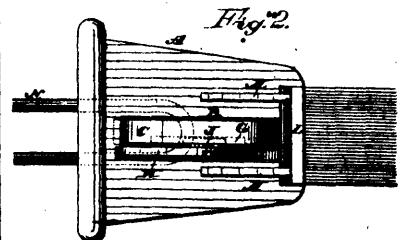
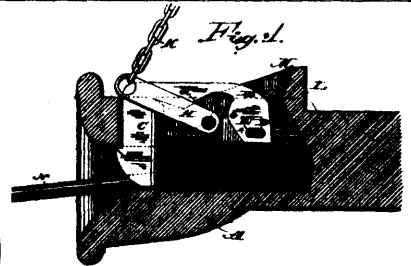
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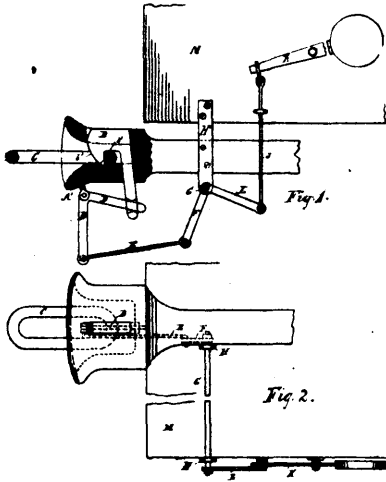
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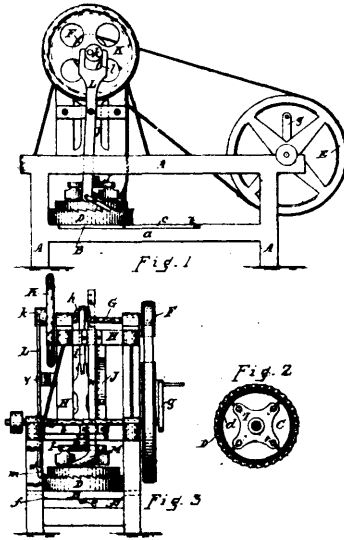
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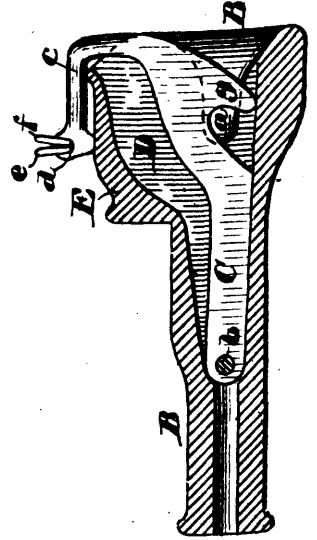
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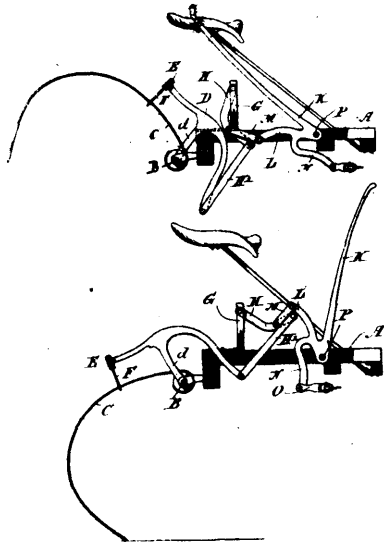
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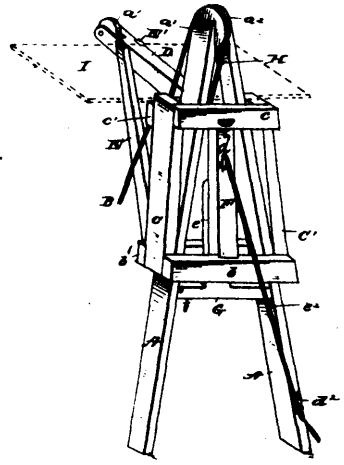
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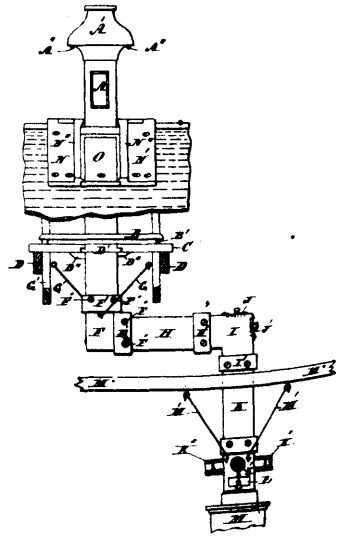
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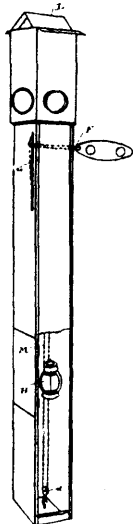
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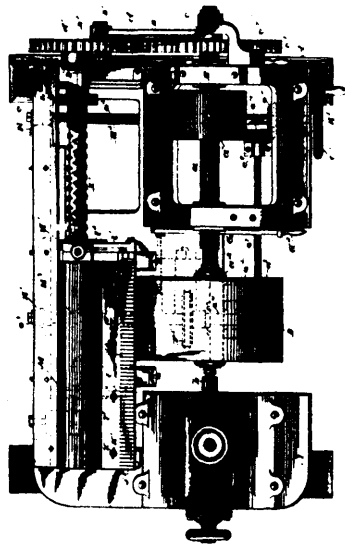
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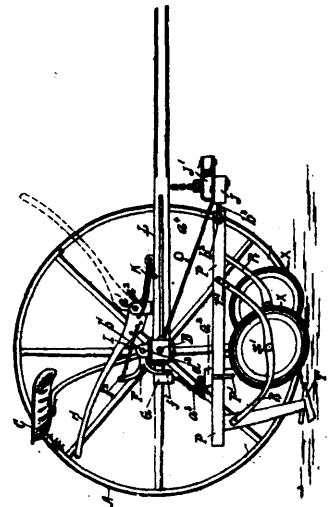
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