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INVENTIONS PATENTED.

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

No. 19,272. Hand Broadcast Seed Sower.

(*Semoir à la Volée à Main.*)

Amos E. Shrock, Joseph Leman and Louis M. Emond, Goshen, Ind., U.S., 5th May, 1884; 5 years.

Claim.—1st. In a hand broadcast seed sower, the metallic guide bar G, secured transversely on the pivot bar H, and having its ends turned upwards, and the openings h formed in them, substantially as shown and for the purpose set forth. 2nd. In a hand broadcast seed sower, the vibrating feed plate C having the raised edge i, substantially as herein shown and described.

No. 19,273. Fly Book. (*Livret à Mouches de Pêche.*)

Thomas B. Mills, New York, (Assignee of C. G. Levison, Brooklyn, N.Y., U.S., 5th May, 1884; 5 years.

Claim.—1st. The combination, with the leaf of a fly-book having books or clips at one end, and elastic or spring retainers at the other end, of eye guides for the several retainers, each attached to the leaf and receiving a retainer through it, substantially as herein described. 2nd. The combination, with the leaf, of elastic or spring retainers on opposite sides thereof, and an eye-guide consisting of a tube or ring inserted through the leaf, and receiving the two said retainers through its portions which are presented on opposite sides of the leaf, substantially as herein described. 3rd. The combination, with the leaf A, having books or clips a at one end, of retainers, each consisting of the spring D and attached cord D2, and a pulley f around which said cord passes, substantially as herein described.

No. 19,274. Vaginal Syringe.

(*Seringue Vaginale.*)

James A. Hawley and Lorenzo C. Hall, Canandaigua, N.Y., U.S., 5th May, 1884; 5 years.

Claim.—1st. The improved vaginal syringe, hereinbefore described, inclosing an ordinary speculum or vaginal tube is fitted with a plug inclosing two pipes of suitable lengths, in combination with compressible and expandible induction and eduction bulbs, whereby water may be injected and forcibly withdrawn as rapidly as injected, substantially as set forth. 2nd. The combination, with a speculum or vaginal tube, of the plug b fitted to the inner end of the speculum, the inflexible pipes h, h1, having their inner ends inclosed by, and flush with, the inner face of the plug b, and having their opposite ends projected out of the opposite end of the speculum and around the pipes h, h1, and induction and eduction bulbs, whereby water may be injected and forcibly withdrawn as rapidly as injected, substantially as described.

No. 19,275. Feed Grinding Mill.

(*Moulin à Blé.*)

C. N. McLaughlin, Onatanna, (Co-inventor with D. J. Ames, Austin,) Minn., 5th May, 1884; 5 years.

Claim.—1st. The combination, with the runner bar D, provided with a semi-spherical cavity d, having lugs g, of the spindle E, having the rounded end and curved pin a and a1, adapted to fit into the semi-spherical cavity and between the lugs, whereby the runner being revolved by the pins and lugs is free to move in any direction

on the rounded head of the spindle, and the runner shaft not passing through the hopper, substantially as and for the purpose hereinbefore set forth. 2nd. The runner bar D, having fine cutting grooves at its outer edge, and a spiral conveyer F, at right angles thereto at its centre, said spiral conveyer being provided with tangential wings e, with deep cut tangential furrows e1 arranged between them, said furrows being sunk below the fine cutting groove to serve as reservoirs or chambers, to assist in conveying the grain to the grinding surface, substantially as and for the purpose hereinbefore set forth.

No. 19,276. Railway Frog.

(*Rail de Raccordement.*)

William J. Morden, Chicago, Ill., U.S., 7th May, 1884; 5 years.

Claim.—A solid frog point B, provided with a bearing projection a, adapted to rest on the flanges of the wing rails, said projection being formed integral with the point, and of one homogeneous mass of metal, substantially as shown and described and for the purpose set forth.

No. 19,277. Preparation of Petroleum, or Oleine and other Mineral Oils for Painting Purposes. (*Préparation du Pétrole, ou de l'Oleïne et autres Huiles Minérales pour la Peinture.*)

Donald A. Stewart, Toronto, Ont., 7th May, 1884; 5 years.

Claim.—The process of desiccating and deodorizing vegetable and mineral oils by mixing the same with, (a) sulphate of iron, (b) lime, chloride of lime or carbonate of lime, (c) bicarbonate of soda or silicate of soda or bicarbonate of potash, (d) liquid ammonia, (e) muriatic acid or glacial acid, and (f) carbolic acid, substantially as described.

No. 19,278. Process and Apparatus for Preparing Beer and other Fermented Liquids for the Market. (*Procédé de Préparation de la Bière et autres Liqueurs Fermentées pour le Commerce.*)

Casper Pfaudler, Rochester, N.Y., U.S., 7th May, 1884; 5 years.

Claim.—1st. The process of preparing beer and other fermentable liquids for the market, which consists in holding such beer or other liquid during fermentation under a controllable hydrostatic pressure, and carrying off the barn which rises from the fermenting mass by a current of liquid, substantially as set forth. 2nd. The combination, substantially as hereinbefore described, with a fermenting cask or vessel, of a pipe filled with water or other liquid, for holding the liquid in the cask under a hydrostatic pressure, the regulator for controlling this pressure, and the spout f, for passing a current of liquid through the hydrostatic pipe and the regulator. 3rd. The combination, substantially as hereinbefore described, with a series of fermenting casks or vessels, a series of hydrostatic pipes, one for each cask, and the regulator for controlling the pressure in the hydrostatic pipes and in the cask. 4th. The combination, substantially as hereinbefore described, with a series of fermenting casks or vessels, a series of hydrostatic pipes, one for each cask, the regulator for controlling the pressure, and the spouts f, one for each of the hydrostatic pipes. 5th. The combination, substantially as described, with two series of fermenting casks or vessels A, A1, A2, of a series of hydrostatic pipes a, a1, one for each cask, the regulator B connected to all the hydrostatic pipes by a pipe b, the water supply pipes E, F and spouts f, connected to the hydrostatic pipes a, and the water supply pipes E, F and spouts f1, connected to the hydrostatic pipes a1.

No. 19,279. Process for Filtering and Decolorizing Sugar-Liquors, Syrups and Saccharine Juices. (*Procédé pour Filtrer et Décolorer les Liqueurs de Sucre, Sirops et Jus Saccharins.*)

Fritz Kleeman, Schoemingen, Germany, 7th May, 1884; 5 years.

Claim.—1st. The herein described means or process of treating sugar liquors, syrups and saccharine juices, to facilitate filtration and decolorization, said means or process consisting in adding to, or mixing with the liquor, a quantity of broken or pulverulent brown coal, tertiary coal, lignite or peat, previous to passing to passing the liquor through the usual filters, filter beds, or filter presses, substantially as herein set forth. 2nd. The herein described means or process of filtering and decolorizing sugar-liquors, syrups and saccharine juices, which consists in passing the liquor through a mass of broken pieces or lumps of brown coal, tertiary coal, lignite or peat contained within any suitable vessel. 3rd. The herein described filtering and decolorizing medium for treating sugar liquors, syrups and saccharine juices, said medium consisting of a mass of broken or pulverulent brown coal, tertiary coal, lignite or peat contained within any suitable vessel, substantially as herein set forth.

No. 19,280. Revolving Cylinder Engine.

(*Machine à Cylindre Tournant.*)

John J. Blair, Tacoma, Washington, U.S., 9th May, 1884; 5 years.

Claim.—1st. In a revolving cylinder engine, the combination, with a fixed hollow cylindrical piston, of the swinging gates J, the revolving cylinder A and the revolving valves O held within the cylindrical valve chamber in the piston, substantially as herein shown and described. 2nd. In a revolving cylinder engine, the combination, with a fixed hollow cylindrical piston, of the swinging gates J, the revolving cylinder A, the revolving valves O held within the cylindrical chamber in the piston, and of the sliding valves P adapted to close either of the channels or ports K, or the channels or ports K1, substantially as herein shown and described. 3rd. In a revolving cylinder engine, the combination, with a fixed hollow cylindrical piston, of the swinging gates J, the revolving chamber A, the revolving valves O, held within the cylindrical chamber in the piston, and the sliding valves P adapted to close either the channels or ports K, or the channels or ports K1, substantially as herein shown and described. 4th. In a revolving cylinder engine, the combination, with a fixed cylindrical hollow piston E, of the revolving cylinder A, the revolving valves O held in a cylindrical chamber L in the piston, the sliding valves P having projections P1, and the sliding rod R in the shaft of the piston, provided with an annular groove R1 into which the projections P1 of the valves P pass, substantially as herein shown and described. 5th. In a revolving cylinder engine, the combination, with a fixed hollow cylindrical piston E, of the revolving cylinder A, the revolving valves O held in a cylindrical chamber L in the piston, the valve carrier N, the cylindrical journal M and the valve stem M1, secured in one head of the cylinder and connected with the valve carrier N in such a manner as to turn the same, substantially as herein shown and described. 6th. In a revolving cylinder engine, the combination, with the fixed piston E having a cylindrical chamber L in its middle, the cylinder A, the valve carrier N, the valves O, the valve stem M1 secured in the head A2 of the cylinder, the cylindrical journal block M mounted on a valve stem M1 having a squared end M2 projecting into a recess in the valve carrier, substantially as herein shown and described. 7th. In a revolving cylinder engine, the combination, with the fixed piston E provided with two pairs of gates J for running in opposite directions, of the revolving cylinder A, the shaft F connected with the piston, and provided with a steam inlet channel G and a steam outlet channel G1, substantially as herein shown and described. 8th. In a revolving cylinder engine, the combination, with the fixed piston E provided with two pairs of gates J for running in opposite directions, of the revolving cylinder A, the shaft F connected with the piston and connected with the piston, and provided with the steam inlet channel G and the steam outlet channel G1, and of the collars H, H1, held on the shaft and connected with the steam inlet and exhaust pipes, substantially as herein shown and described. 9th. The combination, with a cylindrical piston, of a cylinder, the opening of which is formed of two semi-cylinders elongated at the base or diameter edges, beyond the middle of the circle, whereby two meniscus-steam chambers will be formed between each half of the piston and the corresponding half of the cylinder, substantially as herein shown and described. 10th. The combination, with the cylindrical piston, of a cylinder, the opening of which is formed of two semi-cylinders united at their base or diameter edges, and elongated at the said edges beyond the middle of the circle, whereby two meniscus-shaped steam chambers will be formed between the surface of the piston and the inner surface of the cylinder, a cylindrical valve chamber being formed in the piston, substantially as herein shown and described.

No. 19,281. Attachment for Dress or Bodice Fronts.

(*Renfort pour Devant de Robe ou de Corsage.*)

Ella Whaples, Jackson, Mich., U.S., 9th May, 1884; 5 years.

Claim.—An attachment to dress fronts consisting of the parts A, A1 provided with the buck steels B, B1, and adapted to be used substantially as and for the purposes described.

No. 19,282. Button. (*Bouton.*)

John Bird, Union City, Ct., U.S., 9th May, 1884; 5 years.

Claim.—1st. The swivelled button A, combined with the eyelet B, which has the lower enlargement d that projects beyond the back of the button, and integral cross-bar b, substantially as herein shown and described. 2nd. The button constructed of the parts c and f, bar D and split eyelet a, all combine substantially as herein shown and described. 3rd. The button A having vertical central aperture and another horizontal aperture at right angles therewith, in which horizontal aperture the bar D is received and held so that it traverses the vertical aperture, as set forth.

No. 19,283. Locomotive. (*Locomotive.*)

William E. Cole, Montgomery, Ala., U.S., 9th May, 1884; 5 years.

Claim.—1st. The combination of the poles A and the locomotive frame E provided with grooved wheels B, each having a free longi-

tudinal play upon the axle at all times, substantially as specified. 2nd. The combination of the locomotive frame having cross beams curved upon their under surfaces, as at e, and resting upon the axles and having depending brackets c, with the axle C and grooved wheels B, having at all times a free longitudinal play thereon, substantially as specified. 3rd. The combination of a locomotive frame, provided with wheels having at all times a free longitudinal play upon the axles thereof, and means for driving each of the wheels independently of the other with chains, substantially as specified. 4th. The combination of a frame, a motor mounted thereon, a pair of sprockets mounted on each end of a shaft connected to said motor, and a front and rear wheel, each provided with a sprocket arranged on relatively-opposite sides of said wheels, and chains connecting the sprockets of the shaft and of the wheels, having a free longitudinal play upon the axle, substantially as specified. 5th. The combination of a boiler and engine front, and rear wheels having respectively inner and outer sprockets secured thereon, with a frame narrower at the front and having a shaft bearing sprockets and located between said wheels, and with independent chains connecting said shafts with the inner and outer sprockets, substantially as described. 6th. The combination of the engine C, frame E having wheels B, each having a free longitudinal play upon their axle, and a sprocket b, and connected by a chain b1 to a shaft D adapted to be rotated by said engine, substantially as described. 7th. The combination of the truck E having curved cross-beams e, pedestals c and straps c2 with the axle C and loosely journalled wheels B, having at all times a free longitudinal play upon the axles, substantially as described. 8th. The combination of the engine G, boiler H, crank shaft F, pinion A, gear D1, shaft D, sprockets d, d1, frame E, axle C, wheels B, sprockets b and chains b1, substantially as shown and described. 9th. The combination of the truck E, the axles C having the middle portion of their upper surface slotted transversely, and the pedestals c adapted to receive washers between them and the axles, with sprocket wheels and chains adapted to drive each supporting wheel independently from the other, substantially as described.

No. 19,284. Lantern. (*Lanterne.*)

John B. Stetson, Lincoln, Me., U.S., 9th May, 1884; 5 years.

Claim.—1st. A lantern having a fixed tubular frame severed at a single point above the burner, and a globe mounted in an adjustable cage hinged to the reservoir or air chamber, and provided with a catch, whereby the globe and its cage may be tipped down independently of the frame for filling, trimming and lighting the lamp, and secured, when turned back, into position for use without detachment of any of the parts, substantially as set forth. 2nd. The globe D, plate E, disk F and straps G, in combination with a hinge and catch forming adjustable connections of the globe to the frame, for the purpose set forth. 3rd. In a lantern having a tubular frame, the globe mounted in a hinged cage, in combination with the severed tube J J and overlaps K, K, for the purposes set forth. 4th. In a lantern having a tubular frame, the combination of the frame with the hinged globe, the severed tube J J and the lock L P, substantially as set forth.

No. 19,285. Printer's Dry Rack.

(*Rayon d'Imprimerie.*)

George A. Clapper, Wooster, Ohio, U.S., 9th May, 1884; 5 years.

Claim.—1st. In a dry rack, the opposite corresponding notched standards D, D1, opposite corresponding notches or supports I, I, having bearings B, S, and one or more ratchet stops G, adjustable lattice leaves T, having shafts R, R1 adapted to enter the supports I, I, substantially as and for the purpose specified. 2nd. In a dry rack, the combination of the standards D, D1, united to form a rack frame, with opposite notches or supports I, I, in or upon the inner sides of the standards D, D1, each having opposite bearings B, S, and one or more ratchet stops C, substantially as and for the purpose specified. 3rd. In a dry rack, the combination, with the perpendicular rack frame D, D, having shelf supporting notches or supports I, I, of adjusting leaves or shelves T, adapted to connect with, and be supported by, said notches or supports so as to project from the rack frame either horizontally or obliquely upward, and also to be detached from the supports and rack frame at will, substantially as and for the purpose specified.

No. 19,286. Carriage Shaft Supporter.

(*Support de Limonière de Voiture.*)

George C. Eastman, Lewiston, Me., U.S., 9th May, 1884; 5 years.

Claim.—1st. The shaft supporter having its metallic parts B, B1 provided with grooves to receive the edge of the packing and connected by screws arranged in them to the said parts in combination with the packing A, arranged between the rings of such parts with its inner and outer peripheries, essentially even or flush with the next contiguous surfaces of such rings, all substantially as set forth. 2nd. The shaft supporter composed of the two grooved metallic parts B, B1, the leather packing A and their connection screws C, D, E and F, a bucking tongue G adapted to two of the screws, and a bucking loop I of leather or other suitable material, arranged in eyes extended from the said two parts and connected by packing between them, as specified.

No. 19,287. Cut-out for Electric Lighting and other Electric Circuits.

(*Interrupteur pour Circuits d'Eclairage Electrique et Autres.*)

William M. Thomas and The Grand Rapids Electric Light and Power Company, Grand Rapids, Mich., U.S., 10th May, 1884; 15 years.

Claim.—1st. The combination of the main circuit, the loop circuit, and means operated by the diversion of the current from the loop to automatically cut out the loop circuit, substantially as set forth. 2nd. The combination of the main circuit, the loop circuit, and means operated by the diversion of the current from the loop to automatically short-circuit the loop circuit, substantially as set forth. 3rd.

The combination of the main circuit, the loop circuit, and means operated by the diversion of the current from the loop to automatically both short-circuit and cut-out the loop circuit, substantially as set forth. 4th. The combination of the main circuit, the loop circuit, the terminals of the two circuits which are normally electrically connected, and means operated by the diversion of the current from the loop for automatically breaking the connection between the two circuits, whenever the current is grounded or otherwise diverted in the loop, thereby cutting out the loop and at the same time permitting the terminals of the main line to come together so as to continue the main circuit, substantially as set forth. 5th. The combination of the main circuit, the loop circuit, the terminals of the two circuits which are normally electrically connected, the electro-magnet, the coils of which are included in the loop circuit, and which are so disposed that the current which passes through the coils does not normally energize the magnet, but which does energize the magnet whenever the current in the loop is grounded or otherwise diverted, and the armature of the magnet to which the terminals of the loop circuit are attached, so that, when the magnet is energized by reason of a short-circuit or ground connection in the loop, it will attract its armature, thereby breaking the connection between the terminals of the two circuits and cutting out the loop, substantially as set forth. 6th. The herein-described electrical cut-out apparatus, consisting of the combination of the bed-plate, the terminal springs, the terminal plates normally clamped between the terminal springs, the electro-magnet, the coils of which are wound, as described, the armature, the flexible conductors which connect the coils of the electro-magnet with the terminal plates, the binding posts and the conductors which lead from one set of binding posts to the terminal springs and from another set of binding posts to the coils of the electro-magnet, substantially as set forth. 7th. The herein-described electrical short circuiting and cut-out apparatus, consisting of the combination of the bed plate, the terminal springs, the terminal plates normally clamped between the terminal springs, the electro-magnet, the cores of which are wound, as described, the armature, the flexible conductors that connect the coils of the electro-magnet with the terminal plates, the fixed core of the magnet, its armature, the binding posts and the conductors for electrically connecting the terminal springs with one set of binding posts and the coils of the electro-magnet with another set of binding posts, the conductor for connecting one of the binding posts with the fixed core of the magnet, and the conductor for connecting the armature of the fixed core to another of the binding posts, substantially as set forth.

No. 19,288. Propeller Wheel. (*Roue Propulsive.*)

Harrison C. Pearsons, Ferrysburg, Mich., U. S., 10th May, 1884; 5 years.

Claim.—A propeller wheel blade, sharpened on the after side at the forward or leading edge, and having its forward side constructed with a concave surface, so as to make it tangent to the "line of motion" at the forward edge of the blade, substantially as and for the purpose set forth.

No. 19,289. Prevention and Removal of Scale in Boilers. (*Prévention et Enlèvement des Incrustations dans les Chaudières.*)

George Downie, Saliwas, Cal., U. S., 10th May, 1884; 5 years.

Claim.—The improved method herein described, for preventing and removing scale from steam boilers, consisting essentially in subjecting the interior of the boiler to the action of an infusion or decoction of eucalyptus, substantially as described.

No. 19,290. Speed Changing Mechanism. (*Mécanisme de Changement de la Vitesse.*)

Benjamin B. Powell, Petowskey, Mich., U. S., 10th May, 1884; 5 years.

Claim.—1st. In a speed-changing mechanism, the combination, with the shafts L, D and their respective pinions K, C, of the spur-wheel B, the lever E with its pinions O, F, the blind-wheel or disk G and its series of differential gears I, J, the eccentric spur-wheel H and the series of pinions P, Q carried by the blind wheel G, and arranged to engage with the eccentric wheel H and pinion O, substantially as specified. 2nd. In combination with the blind wheel G, having a series of differential gears I, J for operation, as described, in connection with the pinion K and eccentric wheel H, the loosely-fitted lever E made capable of engaging by catch or fastening with the blind wheel at the blind points and engaging by gears, through a series of pinions on the blind wheel, with said eccentric wheel and with a driving spur-wheel B, essentially as and for the purposes herein set forth. 3rd. The differential gears I, J, fitted in longitudinally sliding spindles *c*, in combination with the disk or wheel G which carries them, and springs *d*, the fixed arm or bracket M having inclined guiding-faces *e, e*, and the pinion K, substantially as described. 4th. The locking-lever N in combination with the sliding spindles *c*, in which it is fitted to engage the gears I, J, the springs *d* and the blind-wheel G, essentially as and for the purposes herein described. 5th. The lever E having sloping guiding faces *s, s*, in combination with the sliding spindles in the gears Q, P, the springs *o*, the blind wheel G, the eccentric spur-wheel H and the lever pinion O, substantially as specified.

No. 19,291. Application of Wire Gauze in the Construction of Floors, Partitions, &c. (*Application de Tissu Métallique dans la Confection des Planchers, Cloisons, &c.*)

James McCarroll, New York, N. Y., U. S., 10th May, 1884; 5 years.

Claim.—Walls, ceilings, floors, partitions, or compartments of building, composed of two or more thicknesses or layers of wire gauze, or netting, with a view to preventing the occurrence of the spread of fire, and for the admission of light and air through such walls or partitions hitherto impervious to both.

No. 19,292. Process for Changing Hemlock Tanned Leather to the Appearance of Oak Tanned Leather.

(*Procédé pour Changer l'apparence du Cuir Tanné à la Pruche en celle de Cuir Tanné au Chêne.*)

John P. Gurnett, Toronto, Ont., 10th May, 1884; 5 years.

Claim.—The process of making hemlock tanned leather, either before or after being tanned, have the resemblance and appearance of oak tanned leather by using picric acid and pumerick, in the proportions and manner hereinbefore set forth and substantially as described, the use of the said ingredient as aforesaid being my invention.

No. 19,293. Process for Manufacturing Carbons for Electric Lamps.

(*Procédé pour Fabriquer les Charbons pour Lampes Électriques.*)

Alexander Bernstein, Boston, Mass., U. S., 12th May, 1884; 5 years.

Claim.—1st. The method or process of manufacturing hollow carbons for incandescent electric lamps, it consisting in cutting suitable organic substances, such as paper, into sheets of suitable size, rolling the same into the desired form and then carbonizing the paper cylinders thus produced. 2nd. The hereinbefore described method of manufacturing hollow carbons for use in incandescent electric lamps, it consisting in rolling sheets of paper into a cylindrical form by means of suitable cores or mandrels, and next withdrawing the mandrels and carbonizing the paper cylinders, substantially as specified. 3rd. The hereinbefore described process of forming or manufacturing hollow carbons for incandescent electric lamps, the said process consisting in cutting textile fabrics or paper into sheets of the desired shape and size, covering one side of the said sheets with suitable carbonaceous cement, and next rolling the said sheets into the desired form, and next carbonizing them, whereby a hollow carbon of great density and homogeneity is produced, substantially as specified. 4th. For an incandescent electric lamp, a tubular light-giving conductor or carbon made of paper, or a textile fabric, and carbonized, substantially as described.

No. 19,294. Mechanism for Warping, Spooling and Reccoping Yarn Directly from Cops. (*Machine pour Ourdir, Bobiner et Rebobiner le Fil directement des Bobines.*)

Robert L. Carr, Fall River, Mass., U. S., 12th May, 1884; 15 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of the beam, its driving mechanism, the tension device and the yarn delivering stand provided with cop supporting spindles, which permit a cop to backwardly rotate thereon or therewith as the yarn is drawn from the cops on its way to the beam, as set forth. 2nd. The combination, substantially as hereinbefore set forth, of the beam, its driving mechanism, the tension device and a yarn delivering stand provided with a series of cop-supporting spindles, which slightly yield under the tension of the yarn and permit cops to be backwardly rotated thereon, or therewith, as set forth. 3rd. The combination, with yarn winding mechanism, of an unwinding spindle which is capable of bodily movement under the tension of yarn from a cop carried by said spindle, substantially as described, whereby, in unwinding a broken or imperfect cop, said spindle may slightly change its position with relation to the line of the yarn leading therefrom, and thereby enabling the yarn to free itself from a "mat" or "snarl" in the cop, as set forth. 4th. The combination, with yarn winding mechanism, of an unwinding spindle rotatively mounted and a yielding head bearing for said spindle, which permits the latter to be deflected under the tension of yarn drawn from a cop mounted on said spindle, substantially as described.

No. 19,295. Bark-Cutter. (*Hache-Force.*)

Jeremiah Dugnean, Lowell, Mass., U. S., 12th May, 1884; 5 years.

Claim.—1st. The combination of the lever A provided with the pin holes *c* and mortise *a*, through which is a limited knife-holder, and the spring *d* which claps the log and is held and adjusted to said log by a screw *d*, the pin *a* at which is a limited knife through the holes *c* in the lever A, and knife-lever and the knife-holder, the knife-holder B which is provided with holes *b* and, when inserted through the mortise *a*, is held there by the pin *a* and having also a spring *e* which is adjusted to the log by a screw *e*, and the U-shaped knife C which is fastened to the knife-holder B by means of adjustable screws *f*, which pass through slots *g* in the knife and through the knife-holder B, all parts being combined, substantially in the manner and for the purpose shown and described. 2nd. In a bark-cutter, the combination of the lever A and the knife-holder B secured to the lever, substantially as described and for the purposes set forth. 3rd. The combination of the lever A, the spring *d*, adjusting screw *d* and knife-holder B, all substantially as and for the purposes described. 4th. The combination of the lever A and the knife-holder B, the spring *e* and the screw *e*, all substantially as and for the purposes described. 5th. The combination of the knife-holder B, the knife C and the adjustable screw *f*, all substantially as and for the purposes described.

No. 19,296. Incrustation Preventive for Steam Boilers. (*Préventif Contre les Incrustations dans les Chaudières à Vapeur.*)

Frederick Froxel, Danville, Ill., U. S., 12th May, 1884; 5 years.

Claim.—A preparation or compound for extracting lime from water and removing scale from boilers, composed of concentrated lye, resin and alum, in substantially the proportions above set forth.

No. 19,297. Machine for Threading the Points of Lag-Screws. (*Machine à Fileter les Pointes des Vis à Bois.*)

Henry E. Coy, Toledo, Ohio, U. S., 12th May, 1884; 5 years.

Claim.—1st. In a machine for threading the points of lag-screws, the clamping-jaws O having a female thread, and mounted upon the sliding standards L provided with the cam plate M and lever N, in combination with the sliding blocks Q, carrying the point-threading tools R, substantially as set forth. 2nd. In a machine for threading the points of lag-screws, the blocks Q, Q having upon their outer edges the wheels *t, t*, and carrying the point-threading tools R, R, in combination with the sliding standards L, L, springs S, S and pivoted former-levers I, I, substantially as described. 3rd. In a machine for threading the points of lag-screws, the base G adjustable on the bed E, and the sliding base J carrying the threaded clamping-jaws O, O, in combination with cam plate M, lever N, blocks Q, Q, carrying point-threading tools R, R, springs S, S and former-levers I, I, substantially as specified. 4th. In a machine for threading the points of lag-screws, the longitudinally-sliding base G, guide K, carrying the blocks L, L, and threaded screw-clamp O, in combination with blocks Q, Q, carrying the point-threading tools and having transverse movements towards and from each other, substantially as set forth. 5th. In a screw-threading machine, the combination of the sliding base J, the transversely sliding standards L, the screw clamp O, the sliding blocks Q and the point-threading tools K, the clamp and tools being capable of independent movements, substantially as set forth.

No. 19,298. Automatic Grain and Water Elevator. (*Elevateur automatique pour les Grains et l'Eau.*)

Jacob B. Brimer and William M. Brimer, 12th May, 1884; 5 years.

Claim.—1st. An elevator in which the buckets or carriers are automatically operated to discharge their contents at various points along their line of travel, as set forth. 2nd. The combination, in an elevator, of the buckets pivotally secured upon an endless belt or chain, with means, substantially as described, for tripping and righting the buckets at such points along their line as it is desired to discharge their contents. 3rd. The combination, with a chute provided with traps, of the pivoted elevator bucket provided with an arm or lever secured to the bucket at a line at one side of its centre of gravity, and having a bearing upon the chute in which said traps for tripping the arm are located, substantially as described. 4th. The combination, with a chute provided in one of its sides with doors, of an endless belt or chain carrying pivoted buckets, each provided with an arm or lever, said arms being adapted to maintain the buckets in position for holding their contents, substantially in the manner described, and the doors, when open, being arranged to constitute traps for tripping the arms so as to allow the buckets to tilt and discharge their contents, as set forth. 5th. A pivoted elevator bucket provided with a pivot having a projecting lug, in combination with a bearing upon the endless belt or chain, and stops against which the said lug is adapted to strike, in order to limit the extent of vibration of the bucket, substantially as described. 6th. The combination of the endless belt or chain with the swinging elevator bucket, provided with a pivot having a projecting lug, the double-walled slotted bearings H and the stops L, said members being constructed and arranged, substantially as for and for the purposes described.

No. 19,299. System of Electric Railway.

(*Système de Chemin de Fer Electrique.*)

Frederick H. Danchell, Millstone, Eng., 12th May, 1884; 5 years.

Claim.—1st. In an electric railway locomotive, a frictional driving wheel located on the motor spindles and centrally between two bearing wheels driven thereby, in combination with means for keeping them in frictional contact, substantially as set forth. 2nd. An electric motor carriage or locomotive having wheels for running on a lower track, guide wheels for running against an upper lateral current conducting guideway, elastic current collecting appliances a motor having a driving wheel on its spindle, located centrally between two driven bearing-wheels and adjustable frictional driving contact appliances, substantially as set forth. 3rd. A railway system consisting of an electric motor carriage, as secondly claimed, a lower track, upper lateral current conducting guideway held in frames or on posts, and a dynamo machine for supplying the said guideway and motor with current, substantially as set forth.

No. 19,300. Refrigerator or Butter-Cooler.

(*Réfrigérateur ou Garde-Beurre.*)

Orrin M. Whitman, Boston, Mass., U. S., 12th May, 1884; 5 years.

Claim.—1st. The combination of the ice-holder, provided with one or more cell-receiving openings and a stop to each, as described, with a revoluble cell arranged in and pivoted to the opening, and provided with a crank and spring arranged and adapted to hold the cell in either an open or closed position, as set forth. 2nd. In a refrigerator or butter-cooler, the combination, with the ice-holder provided with one or more cell-receiving openings, each of which is provided with a suitable stop with a revoluble cell constructed, substantially as explained, and arranged in and pivoted to the opening, and means for holding the cell in either the open or closed position, as and for the purpose set forth.

No. 19,301. Pulp and Hair Washing Machine. (*Machine à Laver la Pulpe et le Poil.*)

Emil J. F. Quirin, Tioga Centre, N. Y., U. S., 12th May, 1884; 5 years.

Claim.—1st. A machine for washing pulp, hair or other substance, consisting of a suitable box provided with a false bottom, and having stationary vertically projecting prongs, and a rotary or revolving shaft carrying a series of radial beaters arranged, with relation to the

stationary prongs, so that, as the shaft revolves, the beaters will pass between them, substantially as and for the purpose set forth. 2nd. In a machine for washing pulp, hair, or other substance, of radially arranged beaters, of a series of vertical and stationary prongs, a concave bottom having an opening covered with a netting or screen, and a chamber arranged underneath it and connecting with an upright chamber, substantially as and for the purpose specified. 3rd. In a machine for washing pulp, hair or other substance, provided with a revolving shaft carrying beaters, the combination of a horizontal and an upright chamber, a gate connected thereto, and a discharge spout provided with a suitable gate, substantially as and for the purpose set forth. 4th. In a washing machine for pulp, hair or other substance, the horizontal chamber M, in connection with the upright chamber L, with gate O and elevated overflow R, to discharge the dirt and impurities with a continuous flow of water, keeping the box full during the operation, substantially as and for the purpose specified.

No. 19,302. Fanning Mill. (*Tirare Cribleur.*)

Elijah J. Devins, Coldwater, Mich., U. S., 12th May, 1884; 5 years.

Claim.—1st. In a fanning mill, and in combination with the hopper thereof, the feed slide K, strap N and shaft L, substantially as described. 2nd. In a fanning mill, the fan P, the blades R of which are secured alternately upon opposite faces of a central disk or hub Q, the outer ends of such blades being free, the outer edges being spiral or S-shaped, substantially as set forth. 3rd. In a fanning mill, the combination of the shoe B, studs b, ratchet plates c, screens d, arms e, shoe E, shaft F, hopper I, slide K, strap N, shaft L, pan P, hub Q and fan blades R, when constructed, arranged and operating, substantially as and for the purpose specified.

No. 19,303. Dynamo-Generator Electric Machine or Electric Generator. (*Machine Dynamo-Electrique ou Générateur Electrique.*)

Sebastian Z. de Ferranti and Alfred Thompson, London, Eng., 12th May, 1884; 15 years.

Claim.—1st. Our improved dynamo-electric machine with no iron armature pole pieces, but with zig-zag conductor so formed that the radial parts of the zig-zag are at the same distance apart as the field magnet poles on either sides of it, substantially as described. 2nd. Our improved dynamo-electric machine in which the armature consists of a wheel encircled by a zig-zag conductor, bolted or attached to the wheel in such manner as to transmit to the body of the zig-zag the centrifugal strain which arises from the rotation of the zig-zag conductor and which tends to separate it from the wheel. 3rd. Our improved dynamo-electric machine in which the armature consists of a wheel encircled by a zig-zag conductor formed by winding a wire or metal band, with suitable insulation round and round into a hoop, then bending the hoop to a zig-zag form and attaching it to the periphery of the wheel. 4th. Our improved double zig-zag method of winding the field magnets of dynamo-electric machines.

No. 19,304. Whiffletree. (*Palonnier.*)

John Grems, Leyden, N. Y., U. S., 12th May, 1884; 5 years.

Claim.—1st. The combination, with a whiffletree, of a rear brace C carried around each end of the whiffletree and there rivetted, as shown and described. 2nd. The combination, with a whiffletree brace and hook, of the rivets d, d and the plate c, the latter provided with a middle groove fitting over the hook-shank, and on each side, with a hole for a rivet, as shown and described.

No. 19,305. Compensating Pendulum.

(*Pendule Compensateur.*)

Frank C. Greenleaf, Summit Station, N. Y., U. S., 12th May, 1884; 5 years.

Claim.—1st. The frame A provided with an adjustable weight suspended upon a thermostatic bearing and adapted to be adjusted vertically, substantially as described and for the purposes set forth. 2nd. In a pendulum spring, the open frame A provided at its upper end with a thermostatic spring C, and vertically-adjustable weight B, substantially as shown and for the purpose set forth. 3rd. In a pendulum-weight an open frame having attached at its upper portion of the thermostatic bar, a d means for vertically adjusting therefrom, a rod same, said thermostatic bar having depending therefrom, a sub-which carries an adjustable weight, the parts being combined, substantially as shown and for the purpose set forth. 4th. In combination with the open frame having a thermostatic bar secured to one side within the frame, and at the opposite side of said frame a means for vertically adjusting the free end of the bar, a screw-threaded rod attached to the underside of the bar and passing through a guide on the lower part of the frame, and a pointer secured to the frame, the parts being organized, substantially as shown and for the purposes set forth. 5th. In a compensating pendulum-weight, the thermostatic bar having a weight or bob carrying-rod secured to the underside of the same, and a frame, and means for attaching said frame to the pendulum rod, for the purposes set forth. 6th. In a compensating pendulum-weight, the open frame A having rigidly secured at one side of the same, a thermostatic bar provided at its under-central portion with a partially screw-threaded rod I, which carries a vertically-adjustable weight, the free end of the thermostatic bar being partially adjustable by means of a spring C and set-screw, and a guide d located near the base of the frame, and pointer E attached to the frame opposite the spring C, the parts being organized and combined, substantially as shown and for the purpose set forth.

No. 19,306. Milk Can. (*Boîte à Lait.*)

Joseph Klein, Formosa, Ont., 12th May, 1884; 5 years.

Claim.—1st. The self-submerging cover a a, constructed in manner aforesaid. 2nd. The cloth (either woollen or cotton) or other pliable and absorbing material placed between the cover and the can, to absorb the steam and moisture issuing from the warm milk.

No. 19,307. Reed and Hat-Sweat.*(Jonc et Bourrelet de Chapeau.)*

George S. Bracher, New York, N.Y., U.S., 12th May, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a reed of rattan, or analogous material, impregnated with a filling material, and surface hardened by compression and friction, substantially as and for the purposes specified. 2nd. A method of treating reeds to improve their qualities and appearance, for hat-sweats and other purposes, consisting in colouring, filling, compressing and surface-finishing, substantially as set forth. 3rd. A hat-sweat provided with a reed, dressed and finished with a coating of varnish, and attached to the edge of said hat-sweat without a covering, substantially as set forth. 4th. A hat-sweat provided with a reed dressed and finished with a coating of varnish, without covering except the enclosing stitches, whereby it is united to the sweat, substantially as hereinbefore set forth. 5th. A hat-sweat provided with a reed *a* without covering, and the back strip *p* united to said sweat, but concealed behind the reed, substantially as and for the purposes hereinbefore set forth.

No. 19,308. Apparatus for Cutting Pile Fabric.*(Appareil pour Tailler les Tissus à Poil.)*

Charles Coupland, Seymour, Ct., U.S., 12th May, 1884; 5 years.

Claim.—1st. The combination of the straining bars *A*, *A*₁ with the rolls *B*, *B*₁, means for operating said rolls, tension bar *C* arranged with its upper edge substantially in line with the space *a* between bars, supplemental tension bars *b*, *b*₁, *b*₂, etc., arranged behind the bar *C*, a series or system of circular cutters arranged to rotate coincident with the space *a*, means for operating said cutters of rollers, two series of rollers arranged to co-operate with the rolls *B*, *B*₁, drawing the double pile fabric to the cutters, and means for operating said series of rollers, all substantially as and for the purpose herein set forth. 2nd. The combination, with straining bars and means, substantially as described, for drawing the double pile fabric *lo*, and between the same, of a bar carrying a series or system of circular cutters *D*, extending substantially the width of the fabric to be cut, arranged opposite to, or coincident with the space between the said bars, and gears or toothed pinions, attached to the spindles of said cutters, driving gears arranged to co-operate with the gears on pinions aforesaid, and means for transmitting a reciprocating motion to the cutter carrying bar, all substantially as and for the purpose herein set forth. 3rd. The combination of a spindle *I* carrying a circular cutter *D*, with a shell or socket for receiving and supporting the bearing portion of said spindle, a stuffing box at the bottom of said shell or socket, a gear or pinion attached to the lower end of said spindle projected through the stuffing box aforesaid, means for driving the said pinion, and a bar *G*₁ for carrying the cutter in due relation to the double pile fabric to be severed, all substantially as and for the purpose herein set forth. 4th. The combination of a cutter *D* and its carrying spindle *I*, cylindrical as to its lower portion, tapered as to its upper portion, and circumferentially recessed at or near the middle of such cylindrical part, with a shell or socket cylindrical as to the lower, and tapering as to the upper part of its interior, said, and a bar *G*₁ for carrying the cutter on the spindle in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth. 5th. The combination, with the straining bars *A*, *A*₁ and means, substantially as described, for drawing the double pile fabric to, and between the same, of the reciprocating bar *G*₁ carrying a series or system of circular cutters, extending substantially the width of the fabric to be cut, having gears on their spindles, means for reciprocating said bar *G*₁, and provided with a series or system of gears, or toothed wheels, for transmitting a positive or non-slipping rotatory motion to the spindles of the cutters, and means for rotating said shaft, substantially as and for the purpose herein set forth. 6th. The combination of a circular cutter *D* and a spindle tapered at its upper part, with a shell or socket composed of an internally cylindrical flanged sleeve *I*, and a cap *U*, arranged to carry the cutter in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth. 7th. The combination of a cutter and its carrying spindle tapered as to its upper portion, cylindrical as to its lower portion, circumferentially recessed at or near the middle of its said cylindrical portion and having the thin or thread-like spiral groove *g* above the circumferential recess, with a shell or socket internally cylindrical below and tapered above, and a bar *G*₁ for carrying the cutter on the spindle in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth. 8th. The combination of a cutter and its carrying spindle *I*, a shell or socket for holding the bearing portion thereof, a bar *G*₁ for supporting and carrying the said shell or socket, and a bolt or pin *T*, extended transversely through the bar *G*₁, with its side fitted into a groove or notch formed in one side of the shell or socket, whereby provision is made for retaining the socket securely upon the bar *G*₁, as the latter carries the cutter in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth. 9th. The combination of the spindle *I*, cylindrical as to its lower, and tapering as to its upper portion, provided at or near the centre of its cylindrical part with a circumferential recess, and having at its extremity a screw thread *s*, with a circular cutter *D*, nut *J* and *J*₁, a shell or socket composed of the sleeve *I* and cap *U*, a stuffing box *u* at the bottom of the sleeve *I*, a toothed gear or pinion *n* at the lower projecting end of the spindle, an oil feeding pipe *r*, arranged coincident with the circumferential recess of the spindle, a bar *G*₁ for carrying the circular cutter in due relation with the double pile fabric to be severed, and a bolt or pin *s*, passed transversely through the bar *G*₁, with its sides fitted into a notch or recess formed in the adjacent surface of the sleeve *I*, all substantially as and for the purpose herein set forth. 10th. The combination, with the bar *G*, means for reciprocating said bar, the cutters and the spindles provided with the pinions *m*, of the secondary shaft *n*, supported in bearings connected to the said bar *G*, and provided with gears *m*, through which a rotary motion is communicated to the spindles of the cutters, means for ro-

tating said shaft, a collar *k* fast upon the shaft *n*, cheeks *K*₁ and the bracket *l*, depending from the bar *G*₁, substantially as and for the purpose herein set forth. 11th. The combination, substantially as described, of a series or system of sharpening devices, corresponding in number with the cutter, with a series or system of circular cutters extending substantially the width of the fabric, and a bar arranged to carry the said cutters in due relation with the double pile fabric to be severed, and means for operating the said cutters, all substantially as and for the purpose herein set forth. 12th. The combination, with a reciprocating bar *G*₁ and the circular cutters carried on said bar *G*₁, in due relation to the double pile fabric to be severed, of a shaft supported in suitable bearings upon said bar *G*₁, sharpening devices provided on said shaft, and which, by the rotation of the said shaft, are brought at intervals upon the circumferential or edge portions of the rotary cutters, and means for actuating the said shaft, the cutters and the bar *G*₁, all substantially as and for the purpose herein set forth. 13th. The combination, with the reciprocating bar *G*₁ and the circular cutters carried by said bar, in due relation with the double pile fabric to be severed, of two shafts *K*₂ and *K*₃ supported in bearings upon the said bar *G*₁, means whereby said shafts are geared together for simultaneous rotation in opposite directions, each shaft being provided with sharpening devices, which, by the rotation of the two shafts, are brought at intervals upon the opposite upper and lower edge portions or edges of the rotary cutters, and means for actuating the cutters, the bar *G*₁ and the shafts *K*₂ and *K*₃, all substantially as and for the purpose herein set forth. 14th. The combination, with the bar *G*₁, means for reciprocating said bar, the cutters carried by said bar and means for rotating the same, of the standards *u*, and the two parallel shafts *K*₂ and *K*₃, the latter having its end projected and formed with a longitudinal spline *u*₁, gear wheels connecting said shafts, the pinion *u*₁, the yoke *u*₂, the wheel *D*₁ and means for operating said wheel gearing, substantially as described, for connecting the pinions *u*₁ with the wheel *D*₁, and sharpening devices attached to the shafts *K*₂ and *K*₃, adapted to be applied at intervals to the upper and lower circumferential portions or edges of the rotary cutters by the rotation of the said shafts, substantially as and for the purpose herein set forth. 15th. The combination, with circular cutters and means for rotating the same, of arc-shaped sharpening blocks *m*^{*}, springs for supporting said blocks, shafts carrying said blocks and means for rotating said shafts, all substantially as and for the purpose herein set forth. 16th. The combination, with circular cutters arranged to act in due relation with the double pile fabric to be severed, of sharpening devices composed of an adjustable block *b*^{*}, an adjusting screw bolt *f*^{*}, a spring *K*^{*}, an arc-shaped sharpening block *m*^{*}, and a shaft carrying the said parts and arranged in relation with the cutters to bring the sharpening block in contact with the cutters during a portion of the revolution of said shaft, means for actuating said shaft and the cutters, and means for transmitting movement from one to the other of the shafts *K*₂, *K*₃, all substantially as and for the purpose herein set forth. 17th. The combination, with a circular cutter and its spindle, means for operating said spindle and straining bars, across which the double pile fabric may be strained in opposite directions, of the brace *β*₃, with the block *b*^{*}, spring *K*^{*}, block *m*^{*}, shaft *K*₃, means for connecting blocks *b*^{*} to the said shaft, and means for actuating said shaft, all substantially as and for the purpose herein set forth. 18th. The combination, with circular cutters arranged to act in due relation with the double pile fabric to be severed, of a shaft arranged parallel with said cutters and radially bored to receive bolts *f*^{*}, the said bolts *f*^{*} constructed with flanges *g*^{*}, and squared ends *j*^{*}, blocks *b*^{*}, adjustable by means of the bolts *f*^{*}, arc-shaped sharpening block *m*^{*} connected with the blocks *b*^{*}, springs *k*^{*}, a bar *v*^{*} attached to the shaft, to retain the bolts *f*^{*} by bearing against the flanges of the bolts *f*^{*} and means for actuating the cutters and shaft, all substantially as and for the purpose herein set forth. 19th. The combination of the following elements, to wit: straining bars, across which the parts of the double pile fabric may be strained in opposite directions, rolls arranged to draw under tension the said fabrics across the said straining bars, a series or system of circular cutters, a series or system of sockets, for receiving the bearings of the spindles of the cutters and provided with stuffing boxes at their lower ends, a reciprocating bar constructed to carry said sockets and cutters, and means, substantially as described, for actuating the said parts in unison, substantially as and for the purpose herein set forth. 20th. The combination of the following elements, to wit: straining bars, across which the parts of the double pile fabric may be drawn in opposite directions, rolls for drawing said parts in opposite directions across said bars, tension bars for resisting the traction of the aforesaid rolls to duly strain the double pile fabric as it is drawn over the straining bars, a series or system of circular cutters, extending substantially the width of the fabric, carried by spindles of length greater than the diameter of the cutters, and means, substantially as described, for actuating the said parts in unison, substantially as and for the purpose herein set forth. 21st. The combination of the following elements, to wit: straining bars, across which the parts of the double pile fabric may be strained in opposite directions, to present the pile under tension to the action of the cutters, a series or system of circular cutters provided with gears for driving the same with a positive or non-slipping motion, sharpening devices for maintaining uniformly keen edges upon the said cutters, a bar arranged to carry the said cutters and gears, and means, substantially as described, for actuating the said parts in unison, substantially as and for the purpose herein set forth. 22nd. The combination of the following elements, to wit: straining bars, across which the parts of the double pile fabric may be drawn in opposite directions, means, substantially as described, for carrying or adjusting the space between the said straining bars, a series or system of circular cutters extending substantially the width of the fabric arranged opposite, and parallel with the centre of said space, means, substantially as described, for straining the parts of the double pile fabric in opposite directions across the straining bars, and means, substantially as described, for simultaneously rotating the cutters, each upon its own axis, and reciprocating said cutters as a series or system, all substantially as and for the purpose herein set forth. 23rd. The combination of straining bars *A*, *A*₁, with vertical guides for controlling the vertical movement thereof, means, substantially as described, for directing the vertical movement thereof, means, substantially as described, for adjusting and retaining the said straining bars at varied distances from each other as required by the exig-

encies of work, a series or system of circular cutters placed coincident with the space α between said straining bars, means for rotating said cutters, and means for reciprocating the same, substantially as and for the purpose herein set forth. 24th. The combination of a series or system of circular cutters, with means for operating said cutters, straining bars A_1 , provided at their ends with vertical tongues B_s , brackets having vertical guides C^* , for receiving said tongues, and means, substantially as described, for adjusting the distance between the said straining bars, substantially as and for the purpose herein set forth. 25th. The combination of straining bars A_1 , screws A^* , for limiting the distance between the said straining bars, brackets having nuts W^* , and screw shafts H^* and I^* , acting to rigidly hold the said straining bars in position with reference to each other, substantially as and for the purpose herein set forth. 26th. The combination of brackets D^* , carrying straining bars A_1 , with a series or system of circular cutters placed coincident with the space between said straining bars, means for operating cutters and screws G^* , for adjusting said brackets and consequently the straining bars with reference to said cutting device or mechanism, substantially as and for the purpose herein set forth. 27th. The combination of the brackets D^* , having extensions E^* and nuts s^* , and carrying the straining bars A_1 , with the screws G^* , means, substantially as described, for preventing the longitudinal movement of the said screws, a series or system of circular cutters placed coincident with the space α between said straining bars, means for rotating said cutters, and means for reciprocating the same, all substantially as and for the purpose herein set forth. 28th. The combination of the straining bars A_1 , constructed with the vertical tongues B^* , with the brackets D^* , constructed with the vertical guides C^* , shoulder or nuts w^* and nuts s^* , the screw shafts H^* and I^* , guides for controlling the backward or forward movement of the brackets, screws G^* for affording such backward and forward movement, and means, substantially as described, for adjusting the space between the straining bars A_1 , substantially as and for the purpose herein set forth. 29th. The combination of the fixed dove-tail horizontal guides F^* , the brackets D^* constructed with extensions E^* , having longitudinal grooves corresponding to the guides F^* , the screws G^* for moving the extensions E^* , and consequently the brackets D^* upon the horizontal dove-tail guides F^* , the straining bars A_1 , carried by the said brackets, a series or system of circular cutters placed coincident with the space α between said straining bars, means for rotating said cutters, and means for reciprocating the same, all substantially as and for the purpose herein set forth. 30th. The combination, with the brackets D^* having extensions E^* and the guides F^* , of the straining bars A_1 , carried by said bracket, the screws G^* and squared ends x^* , arranged to give motion to the said brackets, the collar n^* constructed with circumferential grooves u^* , the sleeve or bearing t^* , and tangential pin v^* passed through the said collar and with its side inserted in the circumferential groove of the shaft, substantially as and for the purpose herein set forth. 31st. The combination, with the rolls B^* , B_1 , the straining bars, the series or system of cutters arranged coincident with the space between the said straining bars and the series of rollers B_{11} , B_3 , B_4 and C_1 , C_2 , of which the pulleys a and b , the belt c , means for actuating the rolls B , B_1 , and means for actuating the cutters, all substantially as and for the purpose herein set forth. 32nd. The combination of the rolls B , B_1 and means for actuating said rolls, with straining bars A_1 , cutting mechanism arranged coincident with the space between the said straining bars, means for disconnecting the rolls B , B_1 from the driving or motive power, and means for applying a brake to neutralize the acquired momentum of the rolls simultaneously with the disengagement of the latter from the driving mechanism or motive power, substantially as and for the purpose herein set forth. 33rd. The straining bars A_1 , with cutting mechanism arranged to operate coincident with the space between said bars, rolls B , B_1 , means for driving said rolls from the shaft E_4 , means for driving said shaft lever h , rod g_3 having the laterally projecting inclined plane, means for operating said rod, and means operated by said rod for disconnecting the driving means of shaft E_4 from said shaft, all substantially as and for the purpose herein set forth. 34th. The combination, with the bar G_1 , means for reciprocating said bar, a shaft n and a series of cutters, said shaft and cutters being carried by said bar gearing for transmitting motion to said cutters from said shaft, and means for operating said shaft, of a bracket G^* made in two connected parts and provided with cheeks K_1 , and the collar K on the aforesaid shaft n , all substantially as and for the purpose herein set forth. 35th. The combination, with a bar G_1 , means for reciprocating said bar, a series of cutters carried by said bar, a shaft n mounted in bearings upon the said bar G_1 and having a spline formed thereon, and gearing for imparting a rotary motion from said shaft n to the cutters, of a pulley a provided with an internal groove for the reception of the spline on the said shaft, fixed bearings for said pulley, and means for operating said pulley, all substantially as and for the purpose herein set forth.

No. 19,309. Hand Grenade for Extinguishing Fires. (*Grenade à Main pour Eteindre les Feux.*)

John J. Harden, Chicago, Ill., U.S., 12th May, 1884; 5 years.

Claim.—1st. In a hand grenade for extinguishing fires, the combination with the liquid contents, of solid material of equal or greater specific gravity than the liquid, for the purposes herein set forth. 2nd. In a hand grenade for extinguishing fires, the combination, with the shell thereof, of a wire or metal band, substantially as and for the purpose set forth. 3rd. In a hand grenade for extinguishing fires, the combination, with the shell thereof, of a wire or metal band provided with a loop for suspending the grenade, substantially as described. 4th. In a hand grenade for extinguishing fires, the combination, with the shell thereof provided with a groove for retaining in place a wire, of a wire resting in said groove, substantially as and for the purpose set forth.

No. 19,310. Fare Box. (*Boîte à Billets.*)

Timothy B. Stewart, Hartford, Ct., U.S., 12th May, 1884; 5 years.

Claim.—1st. In a fare box, in combination, the frame a , having the receiving-section b , with trough d for guiding the fares, the in-

spection-section with side panes g , g' , g'' , and the vertical cross partitions g_{11} of glass, the rotary cylinder e , with compartments at the bottom of the latter section, and the drawer f having the vertical partition b_1 , all substantially as described. 2nd. In a fare box of the within described class, the rotary cylinder e , having peripheral compartments, and fast to its axis that projects through the side of the box, the handle h with the flat surfaces co-operating with the spring impelled broad faced bolt i , whereby the cylinder may be held in place to receive the fares, or rotated in either direction to deposit them, all substantially as described.

No. 19,311. Carpet Sweeper.

(*Balayeuse de Tapis.*)

George W. Zeigler, Norwalk, Ohio, U.S., 12th May, 1884; 5 years.

Claim.—1st. In a carpet-sweeper, the combination of the driving wheel, the adjustable double arm bracket having belt tightening wheel, with the brush driving wheel, substantially as set forth. 2nd. A carpet-sweeper provided with operating mechanism, the combination, with said sweeper, of the carpet beater, as described, whereby the sand and dust is first loosened from the carpet and then taken up with the brush. 3rd. A carpet-sweeper provided with operating mechanism, in combination with a spring lever adjusting journal for the bearing of the brush spindle, whereby the brush may be adjusted vertically and held in the desired position by the lever of said spring journal, substantially as set forth. 4th. The combination, in a carpet-sweeper, having operating mechanism, such as described, with the spring adjusting journal, the long arm of said spring being provided with retaining devices, whereby the brush is held in the desired position and a rattling noise and jar is prevented, as set forth. 5th. The combination, in a carpet-sweeper having operating mechanism such as described, of the carpet-beater provided with rollers, whereby the beater is rotated, in the manner and for the purpose set forth. 6th. The carpet-sweeper having the end pieces, constructed as described, for the reception of the cover, in combination with said covers ribbed as shown, and with the removable shoe forming the mouth-piece (see Figs. 4, 6 and 7), whereby the said mouth-piece may be removed and interchanged, substantially as set forth. 7th. A carpet sweeper having operating mechanism for rotating the brush, the end pieces of said sweeper being provided at their bottom ends with inwardly turned flanges for the reception of, and in combination with, the sliding bottom, whereby the dust gathered into the sweeper by the brush may be removed from the box of the sweeper without the remitting the floating dust within the sweeper to again fly about the room, as set forth. 8th. The combination, in a carpet-sweeper having the flanged ends, as described, of the sliding bottom with the ring m , and with spring l , for closing the bottom when open, and for retaining it in position and to prevent rattling, as set forth. 9th. A carpet-sweeper, such as described, having a rotating brush, in combination with a comb or cleaner having the edges parallel with the hairs of the brush, whereby the brush is cleaned without cutting the hairs by reason of the teeth of the comb being adapted to pass between the hair of said brush, substantially as set forth. 10th. The combination of a removable shoe with the mouth-piece of the sweeper, said shoe being adapted to fit over and upon said mouth-piece, as set forth. 11th. The comb or cleaner, constructed as described, as an article of manufacture. 12th. The journal adjusting spring and lever, as an article of manufacture. 13th. The combination, with a carpet-sweeper of the slitted handle piece provided with the section of screw (see Fig. 10) by means of which the handle is screwed in, and with the projecting piece o , and with the disc formed on the side of sweeper in such manner that the handle is kept in a vertical position when desired. 14th. The combination, with a sweeper, of the slitted socket, having the section of screw with a handle provided with a screw to fit therein and with the sleeve K , the coiled spring and the shaft, all arranged substantially as set forth.

No. 19,312. Decoy Duck. (*Appeau-Canard.*)

Henry K. Humphreys, Toronto, Ont., 12th May, 1884; 5 years.

Claim.—1st. A board A , having a hole B made in it, as specified, and a wire C , in combination with a duck E , set into the hole B , and held in position by the wire C , substantially as and for the purpose specified. 2nd. The board A having a hole B cut through it, the wire C , extending from its top side, and the notches D , cut in the back edge of the board, in combination with the duck E , arranged substantially as and for the purpose specified. 3rd. In combination with a duck E , a board A having a hole B cut through it, and corks F tacked on its bottom side, substantially as and for the purpose specified.

No. 19,313. Improvements in Typography. (*Perfectionnements dans la Typographie.*)

Charles H. Davis, Brooklyn, N. Y., U. S., 12th May, 1884; 5 years.

Claim.—1st. The combination of the key levers K , t , impression-lever I , link u , toggle-joint 12 13, slider 14 , puppets p and type punches t , p , arranged substantially as and for the purpose set forth. 2nd. The key levers K , t , and impression-lever I , with an adjusting device 11 , and train of connections to the type-punch t , p , substantially as shown. 3rd. The key levers K , t , impression levers I , l , and its adjustments o , o' , in combination with a train of connections to the type-punch t , p , substantially as shown and described. 4th. The combination of the key levers K , t , the impression lever I , the connections from the impression lever I , l , and including the slider 14 and the return stop 18, arranged substantially as and for the purpose specified. 5th. A punch wheel and its rotating mechanism, the latter in the locking levers l , l' , and with a cushioning spring A , the latter interposed between the driving mechanism and the punch wheel, substantially as and for the purpose set forth. 6th. The device A and e for preventing the communication to the punch wheel, of a reversed motion of the rotating mechanism and in combination with said punch wheel and rotating mechanism, substantially as specified. 7th. In combination with each other and with the mechanism for rotating a carrier containing a set of punches, a continuously operating friction clutch, and a positive clutch e , e' , which is disengaged while a punch is being impressed, substantially as and for the purpose

specified. 8th. The friction plate *f* and means for adjusting it, compressible washer *w*, and a pulley or driving wheel *P*, in combination with a punch wheel and mechanism for revolving the same, substantially as set forth. 9th. A series of key levers *K*, *t* and their connections, in combination with the punch wheel *T*, with one or more flanges *l*, *f* thereon, whereby the type key levers, after a partial movement, are detained until the punch wheel is stopped, substantially as herein described and shown. 10th. A punch wheel provided with detaining flanges *l*, *f*, having a releasing slot *s*, in combination with the key levers *K*, *t*, and connecting mechanism, as herein specified. 11th. A punch wheel provided with detaining flange *l*, *f*, in combination with its rotating mechanism and with the key levers and their connections, arranged, substantially as shown, so as to permit the simultaneous operation of two or more of the latter. 12th. A series of locking devices adjacent to, and arranged around, a punch carrier, the latter furnished with a slotted flange, into which the locking devices may engage singly to prevent motion in the punch carrier, substantially as shown. 13th. The punch wheel *T*, having a slotted detaining flange *l*, *f*, and spur *s*, in combination with the locking levers *l*, *f*, the latter arranged to perform the double function of stopping the punch wheel and locking it to prevent motion thereof in either direction, substantially as set forth. 14th. A punch wheel having a detaining flange *l*, *f*, furnished with a slot *s*, and spur *s*, in combination with checking devices, substantially as shown. 15th. The grooved locking-plate *p*, formed substantially as described, and a series of locking devices pivoted therein, in combination with a spur and slotted detaining flange on a punch carrier, substantially as shown. 16th. The key lever *K*, *t*, and suitable connections, substantially as described, to a series of locking mechanism, substantially as described, in combination with each other and with a detaining flange *l* on a punch wheel or carrier, substantially as set forth. 17th. In a machine for impressing types successively, the combination of a friction wheel *x* and friction plate *z*, and means substantially as described, for engaging them at will with a spacing-carriage and letter-spacing mechanism, and devices connecting them to the friction wheel, and all substantially as described. 18th. A mold-plate and spacing-carriage, in combination with reversible spacing mechanism.

No. 19,314. Combined Smoke-Stack and Feed-Water Heater. (*Cheminee et Réchauffeur de l'Eau d'Alimentation Combinés.*)

James Armstrong, Bridgewater, N. Y., U.S., 12th May, 1884; 5 years.

Claim.—1st. In a feed water heater for locomotive and other steam boilers, the water chambers A, A', connected together by tubes A₂ and provided with interior heating chambers, and pipes C, whereby the escaping products of combustion from the fire-box or furnace, or the exhaust steam from the engine driven thereby may pass into, through and about said water chambers A, A' and tubes A₂ of the heater, substantially as described. 2nd. In a feed water heater for locomotive and other steam boilers, the combination of the water chambers A, A', having passages D, D', connected together by tubes A₂ with pipes C, and enclosing jacket B, whereby the products of combustion or exhaust steam are passed through and about the water contained in said chambers A, A', and tubes A₂, substantially as described. 3rd. In a feed water heater for locomotive and other steam boilers, the combination of the water chambers A, A', A₄, connected together by tubes A₂, and provided with inclosing jacket B, pipes C and passages D, D', with the induction pipe K, education pipe K₁, waste pipes L, K₂, and blow-off pipes *v* and N, substantially as described. 4th. In a feed water heater for locomotive and other steam boilers, provided with water chambers A, A', connected by tubes A₂, the tubes A₂, in combination with the education pipe K₁, whereby heated water is passed from the upper chamber A, into the education pipe K₁ at a point below said water chamber, substantially as described.

No. 19,315. Sawing Machine. (*Sciérie.*)

Hakon K. Olsen, San Francisco, Cal., U.S., 12th May, 1884; 5 years.

Claim.—1st. The combination, with the sliding saw carrier E, of the sleeve D, the nut B₁ attached thereto, and the slotted frame A, pivoted to a post C at *a*, as and for the purpose specified. 2nd. The combination, with the sliding saw carrier E, of the rod G connected thereto by a pivot joint *c*, the bar *n* connected with said rod by a box, the crank arms H, having holes *o*, the movable blocks *d*, and the slotted posts I, the gear wheel *e* on crank shaft, and the gear wheel J on shaft *f*, connected with the screw B, whereby the saw may be reciprocated and fed as described.

No. 19,316. Washing Machine. (*Machine à Laver.*)

George L. Ferris and Jacob C. Huff (Assignees of George D. Ferris), Mexico, Mo., U.S., 12th May, 1884; 5 years.

Claim.—The washing-machine, consisting of the water-holder or receptacle A with the cover B, and of the fabric-cylinder C having peripheral rows of perforations *e*, and the several concentrically-arranged tubes or turners D disposed one in each quarter of, and near, the periphery of the cylinder, said perforations *e* being arranged opposite the tubes D, and the said tubes or turners D opening through the heads of the cylinders and having rows of apertures *f*, one row arranged in each of four sides thereof, said cylinder being rotatable in said receptacle and having a crank or handle for its operation, substantially as shown and described and for the purpose set forth.

No. 19,317. Trunk Tray. (*Compartiments de Coffre.*)

Sigmund M. Michelson and George Sylvester, Milwaukee, Wis., U.S., 12th May, 1884; 5 years.

Claim.—In combination, with a trunk tray, a catch secured on the under side thereof, and adapted, when the tray is removed from the body of the trunk, to receive the balance of the trunk-top, so that the tray will be supported on the front edge of the top when the latter is open, substantially as set forth.

No. 19,318. Sectional Boiler.

(*Chaudière en Sections.*)

Warlen King (Assignee of Archibald Spence), Montréal, Que., 12th May, 1884; 5 years.

Claim.—In a sectional boiler, the upper and more remote sections from the fire provided with the water inlets, whereby the water is first brought into the said upper and remote sections, in combination with a pipe, connected and arranged as described, whereby the partly-heated water is brought down into the lower sections which are in immediate contact with the fire, and in combination with said lower sections, and, further, said sections being provided with the water outlets, the whole constructed and arranged, substantially as described and shown. 2nd. The combination of the section A, pipes B, section C, jacket K, having diaphragm A₂, sections L, L₁, L₂, pipe B' and inlets and outlets, the whole constructed and arranged, substantially as described and shown.

No. 19,319. Lamp. (*Lampe.*)

Allen J. Stephens, Toronto, Ont., and William L. Bartholomew, Muskegon, Mich., U.S., (Assignee of William C. Thayer, Chicago, Ill., U.S.) 12th May, 1884; 5 years.

Claim.—1st. The combination, with a main air supply tube provided near its upper end with a suitable support, of a perforated ring resting on said support, and a deflector supported by said ring, or formed with it, as and for the purpose set forth. 2nd. The combination, with a stationary and revolving tube provided with male and female screws, of a notched collar secured to the revolving tube, and a burner cone provided with inwardly projecting arms resting in said collar, as and for the purposes set forth. 3rd. In combination, with the lamp described and shown, a drip cup removably mounted upon the interior of the base thereof, as and for the purpose set forth. 4th. The combination, with cone I provided with inwardly-projecting arms *d*, ring I surrounding said cone, and perforated disk *c*, of notched collar H, revolving tube E, stationary tube B and wick G, tubes B and F provided with male and female screws, as and for the purpose set forth. 5th. The font A provided with a screw-threaded opening, in combination with stem *i* provided with a screw-threaded section *j*, and float M secured to said stem, as and for the purpose set forth.

No. 19,320. Waggon Jack. (*Chèvre de Carrosserie.*)

Thomas Maxon and James W. Carpenter, Dayton, Ohio, U.S., 12th May, 1884; 5 years.

Claim.—The divided frame A, with its bracket H, in combination with the vertically playing-bar C having its bracket, with steps and guide openings *a*, and the operating lever I, with wheel J, the several parts being constructed and operating as and for the purpose set forth.

No. 19,321. Composition for Cleaning and Renovating Fabrics. (*Composition pour nettoyer et Rafraîchir les Tissus.*)

Charles F. Clarke and Gustavus M. Spencer, (Assignee of Thomas Ewing), Philadelphia, Pa., U.S., 12th May, 1884; 5 years.

Claim.—1st. The within-described compound for cleaning and renovating the colours of fabrics, the same consisting of aniline solution, alkali and ammonia compounded, substantially in the manner and proportion herein set forth. 2nd. The mode herein described, of cleaning and restoring the colours of fabrics, said mode consisting in applying to the fabric a composition of aniline solution, alkali and ammonia, and then sponging the fabric, substantially as specified.

No. 19,322. Fruit and Vegetable Parer and Slicer. (*Peleur et Tranche pour Fruits et Légumes.*)

Henry H. Molineux, London, Eng., (assignee of William E. Brock, Dunellen, N. J., U.S.) 12th May, 1884; 5 years.

Claim.—A parer and slicer having a blade A of sheet metal bent or creased longitudinally, as described, to form a cutting edge *d* and a guiding edge *e*, and having a longitudinal slot *a*, cut out along the crown or bend *b* of the blade forming a discharge opening, all substantially as hereinbefore shown and described.

No. 19,323. Process and Apparatus for Manufacturing Paper Pulp. (*Procédé et Appareil pour la Fabrication de la Pâte à Papier.*)

Goldsbury, II. Pond, Glens Falls, N. Y., and Edmund A. Morse, Rutland, Vt., U.S., 12th May, 1884; 5 years.

Claim.—1st. The cylinder A with cover O, shaft H provided with plates, and arms I, L, the rollers K, K and the steam pipe T to hold and work a charge of saw-dust chips, shavings or other pieces of wood or fibrous material producing a pulp of fine fibre, as herein set forth and described. 2nd. The cylinder A provided with a shaft having plates and arms I, L, between which are hung the rollers K, K, either singly or in a series one above the other, substantially as described. 3rd. The rollers K, K, hung between the plates and arms I, I with adjustable hangings, consisting of the set screws N and springs J to set them out against the inner side of the cylinder A with any pressure required, whereby the rollers are allowed to pass over any large pieces that may be in the charge and resume their regular pressure upon the sides of the cylinder, as fully described and set forth. 4th. The cylinder A provided with shaft H having secured thereto plates, and arms I, I and rollers K, K having an opening D, as described, revolving loosely on the pin P, whereby the rollers are automatically set out on the inner side of the cylinder by the centrifugal force, substantially as set forth. 5th. In a machine for reducing saw-dust or other pieces of wood or fibrous material to pulp, the combination,

with the cylinder A, the shaft conveying-arms and plates on which are secured rollers adapted to be operated by the centrifugal force. 6th. In a machine for reducing saw-dust or other pieces of wood or fibrous material to pulp, the combination, with the cylinder A, a shaft carrying arms and plates in the bifurcated ends of the arms, are secured rollers held in place by set screws and springs. 7th. The process of reducing saw-dust or other pieces of wood or fibrous material to a pulp, consisting of enclosing the same in a tight vessel containing a sufficient quantity of water to float the charge, giving it motion and circulation by a jet of steam under pressure, thereby toughening the fibrous, then subjecting it to a light pressure by rollers set out by centrifugal force against the inner side of the cylinder, as herein described. 8th. The process, of reducing saw-dust or other pieces of wood or other fibrous material to a pulp, consisting of enclosing the same in a light vessel containing a sufficient quantity of water to float the charge, giving it motion and circulation by a jet of steam under pressure, thereby toughening the fibrous, and adding a small per cent of alkali, then subjecting it to a light pressure by the rollers rolling over it on the side of the vessel as they are set out into it by the centrifugal force.

No. 19,324. Manufacture of Portland Cement. (*Fabrication du Ciment de Portland.*)

Robert W. Lesley, Philadelphia, Pa., (Assignee of Edward J. De Smedt, Washington, D. C.) U. S., 12th May, 1884; 5 years.

Claim.—1st. The improvement in the art of manufacturing Portland cement, consisting in combining with cement rocks or hydraulic limestones, either before or after the calcining operation, lime or dolomite in substantially the proportions stated. 2nd. The improvement in the art of manufacturing Portland cement, consisting in combining with cement rocks or hydraulic limestones, either before or after the calcining operation, slaked lime in substantially the proportions stated. 3rd. The process of manufacturing Portland cement, consisting in combining with ground or pulverized cement rocks or hydraulic lime stones, lime or dolomite, in substantially the proportions stated, and subsequently calcining and grinding said compounds, substantially as hereinbefore set forth. 4th. The hereinbefore described product, obtained from the combination, substantially in the manner set forth, of cement rocks or hydraulic limestones with lime or dolomite, in substantially the proportions stated.

No. 19,325. Art of Manufacturing Portland Cement. (*Art de Fabriquer le Ciment de Portland.*)

Robert W. Lesley, Philadelphia, Pa., (Assignee of Edward J. De Smedt, Washington, D. C.) U. S., 12th May, 1884; 5 years.

Claim.—1st. The improvement in the art of manufacturing Portland cement, which consists in adding to, and mixing with, the cement material, a hydro-carbon or other combustible prior to the calcining operation, substantially as and for the purpose hereinbefore set forth. 2nd. The improvement in the art of manufacturing Portland cement which consists in mixing with the paste from which the cement is to be made a combustible, then making up this compound into bricks or other suitable forms and then subjecting the same while still moist to the process of calcination, substantially as hereinbefore set forth. 3rd. A cement paste, composed of hydraulic cement-making materials, in combination, with a combustible material, substantially as hereinbefore set forth.

No. 19,326. Lock Nut. (*Arrête-Ecrou.*)

Nathan E. Shailer, Pullman, Ill., Simon W. Shailer and William W. Shailer, Ivoryton, Ct., U. S., 12th May, 1884; 5 years.

Claim.—1st. The combination of the cup, the spring and the follower having one or more recess on its underside. 2nd. The combination of the cup, the spring and the follower having a ratchet on the upper side, the ratchet teeth having an equal angle or such angle as will permit the nut to be screwed closely and unscrewed by the use of an ordinary wrench. 3rd. The combination, with a bolt, of the cup, the spring and the follower having on its upper side serrations or teeth of equal angle on each side, combined with a nut having on its under side serrations or teeth of equal angle on each side, or of such angle as to permit the nut to be screwed and unscrewed with the use of an ordinary wrench, the serrations or teeth of each follower or nut in use reciprocally closely fitting together. 4th. The combination, with a bolt, of the cup, the spring and the follower having corrugations on its upper side, with a nut having corrugations on its under side or each such side having some reciprocal depression or elevation of such character as will permit, the operation of the same by the use of an ordinary wrench.

No. 19,227. Creamer. (*Boîte à Lait.*)

Levi W. Morrison, Olympia, W. T., U. S., (Assignee of Daniel K. Morrison, Ottawa, Ont.) 12th May, 1884; 5 years.

Claim.—The herein-described creamer, consisting of elliptical body A, having inclined bottom *a*, faucet B and tube C, flattened on its lower end and tapering towards the top, and cover D provided with flange *f*, as and for the purpose explained.

No. 19,328. Car Wheel. (*Roue de Char.*)

William W. Snow, Ramapo, N. Y., U. S., 13th May, 1884; 5 years.

Claim.—1st. In a car-wheel, the combination of the tire A, the separate metal body B *b*, the flange *h* upon its outer edge, the inwardly projecting shoulder *m*, the extended bearing surface *d* presenting an unbroken edge to the core of the hub D, and the hub D provided with a flange bearing upon the outer surface only of the body, substantially as and for the purpose described. 2nd. In a car-wheel, the combination of the tire A, the separate metal body B *b*, the flange *h* upon its outer edge, the tongue and groove joint, the inwardly projecting shoulder *m*, the extended bearing surface *d*, presenting an un-

broken edge to the core of the hub D, and the hub D provided with a flange bearing upon the outer surface only of the body, substantially as and for the purpose described. 3rd. In a car-wheel, the combination of the tire A, the separate metal body B *b*, the extended bearing surface *d* presenting an unbroken edge to the core of the hub D, with its flange bearing upon the outer surface only of the body and core, making a driven joint with the edge of the body B *b*, substantially as described. 4th. A car-wheel composed of the tire A provided with a flange *f*, and the annular groove *a*, the body B *b*, the shoulder *m* and flange *h*, and extended inner bearing surface *d*, the plate *c* and hub B, the whole united by bolts, and the hub and tire or either of them making a driven joint with the body.

No. 19,329. Telephone Receiver. (*Récepteur Téléphonique.*)

George E. Shaw, Chicago, Ill., U. S., 13th May, 1884; 5 years.

Claim.—1st. In a telephone receiver, an incomplete annulus permanently magnetic, the magnetic poles opposite each other at the break in said annulus, and having a neutral point nearly diametrically opposite said breaks, said annulus supporting by its periphery, a magnetic circular diaphragm, and having in its center a vertically projecting arm connected with one pole only of said annulus, and encircled by coils of insulated wire, substantially as described. 2nd. In a telephone receiver, the combination of a permanent magnet having the form of an incomplete annulus, having its poles at the break with a core projecting centrally and vertically from one end of the incomplete annulus, carrying a coil of insulated wire wound to and from on the outer face of the annulus, which is electrically connected with said coil, a diaphragm of magnetic material in contact with the annulus, but not with the core, and an elastic support for the magnet, all substantially as described.

No. 19,330. Telephone. (*Téléphone.*)

Charles E. Allen, Adams, Mass., U. S., 13th May, 1884; 5 years.

Claim.—1st. In the art of telephony, the method, substantially as herein set forth, of obtaining great variations of a powerful current in the line, which consists in causing variations in a local battery circuit to reproduce enlarged variations of a more powerful current in another circuit. 2nd. In the art of telephony, the method substantially as herein set forth, which consists in producing great variations in the powerful currents in the line and adjusting the receiving apparatus, so that it will respond only to such strong variations, thereby practically freeing the apparatus from the disturbances produced by extraneous influences. 3rd. In the art of telephony, the method, substantially as herein set forth, of avoiding the disturbances produced by extraneous influences in the receiving instruments, which consists in screening the variations caused by extraneous influences, and causing only the greater variations in the powerful currents sent to appreciably effect the receiving apparatus. 4th. The combination, substantially as herein set forth, with pivoted supports carrying in electrodes, of electro-magnets adapted to operate said supports in accordance with variation in the current passing through said coils. 5th. The combination, substantially as herein set forth, with the pivoted support carrying electrodes included in one circuit, of electro-magnets included in another circuit, adapted to operate the electrodes levers, so as to cause variations in the circuit including the electrodes in accordance with the variation in the said electro-magnets. 6th. The combination, substantially as herein set forth, with a local circuit including a transmitter, and a series of magnet coils of another circuit including a series of electrodes, and the electrode supports, the arrangement being such that variations in the current of the first circuit produced by the transmitter therein will cause enlarged variations in the more powerful current of the second circuit. 7th. The combination, substantially as herein set forth, with a local circuit, including a transmitter, and a series of magnet coils of another circuit, including a series of electrodes, and the primary of an induction coil, and a receiving instrument in the main line forming the secondary of the induction coil, the arrangement being such that variations in the local circuit caused by the transmitter will cause enlarged variations in the more powerful currents of the second circuit, and the receiver is to be so adjusted that it will respond to these latter variations only. 8th. The combination, substantially as herein set forth, with a local circuit, including a transmitter and a number of magnet coils arranged in series, of another circuit including a battery, a number of pairs of electrodes arranged in multiple arc, and the primary of an induction coil, and a main line including the secondary of the induction coil and a receiver. 9th. The combination, substantially as herein set forth, with a primary circuit, including a transmitter and a number of coils, of another circuit including a battery, a number of electrodes and a number of coils, and the primary of an induction coil, and a main line including the secondary of the induction coil, and a receiver, the arrangement being such that variations in the primary circuit shall operate to produce variations in the second circuit, which latter variations are caused to react upon the electrodes in said circuit, thereby sending greater variations to the line. 10th. The combination, substantially as herein set forth, with a main line over which powerful currents are sent, of a receiving apparatus consisting of two coils, one of which is included in the main line and the other is adjustable in relation thereto, whereby the disturbing currents produced in the main line may be screened, and only the more powerful currents will be rendered appreciable in the receiver.

No. 19,331. Material for Covering Carriages. (*Matériel pour Couvrir les Voitures.*)

Edward W. Harral, Fairfield, Ct., U. S., 13th May, 1884; 5 years.

Claim.—A new material for covering carriages and analogous uses, consisting of a cotton fabric having upon one side a facing of wool, which is forced into the interstices of the threads, and upon the opposite side a facing of waterproof material which enters said interstices, taking firm hold both on the threads and the back of the facing, substantially as described.

No. 19,332. Furnace Grate. (*Grille de Fourneau*)

John A. Price (Assignee of Duncan Wright), Scranton, Penn., U.S., 14th May, 1884; 5 years.

Claim.—1st A cutting and dumping grate, having its fire-supporting arms or bars mounted upon shafts made tubular for the free circulation of air through them, whereby the sections are rendered light and strong and prevented from warping under the action of the heat, substantially as described. 2nd. In a cutting and dumping grate, the combination of the hollow-supporting shafts, open at both ends, and having the longitudinal groove, in combination with the independent fire-supporting arms or bars adapted to be slipped upon the tubular shaft, and provided with the projections or tongues for preventing their rotation independent of the shaft, substantially as described. 3rd. The fire-supporting bars or arms of the grate-sections, having the lateral projections or fingers, which serve to grate the space between the bars or arms, substantially as described. 4th. In a cutting and dumping grate, the combination of the fire-supporting arms or bars, and the hollow open shafts on which said bars or arms are separately mounted, arranged in inclined position, substantially as described for the purpose specified. 5th. The combination of the hollow shafts and the fire-supporting arms or bars mounted thereon, having the lateral projections or fingers which serve to space the arms from each other, and also to grate the space between the arms, substantially as described for the purpose specified. 6th. The combination of the hollow tubular shafts, with the series of independent removable fire-supporting bars or arms mounted thereon, substantially as described.

No. 19,333. Gig for Napping Tweed, &c.*(Machine à Lainer les Etoffes, &c.)*

John Shearer and George Pattinson, Preston, Ont., 14th May, 1884; 5 years.

Claim.—1st. In combination, with the cylinder, of a cloth-gig, provided with teasels in the ordinary way, a cylindrical brush A arranged to be held in contact with the surface of the teasels on the cylinder, and caused to revolve at a higher speed and in the opposite direction to that in which the cylinder is revolved, substantially as and for the purpose specified. 2nd. The cylindrical brush B adjustably held in suitable bearings, so that it can be moved nearer to, or farther from the teasels A, in combination with the belt K carried around the pulleys F, G, H and J, substantially as and for the purpose specified. 3rd. The belt K carried around pulleys F, G, H and J, as described, in combination with the T-arm I arranged to carry the pulleys G and H, substantially as and for the purpose specified.

No. 19,334. Horse Collar. (*Collier de Cheval.*)

John F. Trautmann, Saint Louis, Mo., U.S., 14th May, 1884; 5 years.

Claim.—In a horse collar, the combination of the fore wale-piece A having inner and outer laps a, at, a backing B having lap b secured between said laps of the fore wale-piece by a row of stitching e, and a facing C having returned lap c secured to the inner lap of the fore wale-piece and to the backing by a row of stitching e', providing a web E between the fore wale and the after wale, as set forth.

No. 19,335. Switch Board.*(Planche de Commutateur.)*

The Bell Telephone Company, Montreal, Que. (Assignee of Francis Blake, Weston, Mass., U.S.), 14th May, 1884; 5 years.

Claim.—1st. The combination, with two series of conducting rods in a switch-board, one series crossing the other, of contact-pins sliding and tilting one on each of the rods of one of the series, substantially as described for the purposes specified. 2nd. The combination of two series of conducting rods in a switch-board, one series hinged to the other, substantially as described.

No. 19,336. Running Gear for Carriages.*(Train de Voiture.)*

George W. Earle and George S. Strait, Tully, N. Y., U.S., 14th May, 1884; 5 years.

Claim.—1st. In a carriage reach, the combination of the tubular portion a, the central sliding and swiveling portion p and interposed springs or cushions I. 2nd. In a carriage-reach, the combination of the tubular portion a, the inner sliding portion p provided with grooves k and curved springs i seated in said grooves, as described and shown. 3rd. The combination of the rear axle, the front axle and bolster, the longitudinal side springs D and the reach-bar composed of the parts a, b and I.

No. 19,337. Fire Kindling. (*Allumoir.*)

Eugene J. Dunbar, Romulus, Mich., U.S., 14th May, 1884; 5 years.

Claim.—As a new article of manufacture, a fire kindling, consisting of charcoal coated with resin, or other suitable inflammable material that will form a hard surface when dry, substantially as described.

No. 19,338. Roller Mill. (*Moulin à Cylindres.*)

Daniel W. Marmon & Jesse Warrington, Indianapolis, Ind., U.S., 14th May, 1884; 5 years.

Claim.—1st. The combination of the swinging arms D, adjusting rods G, levers H, horizontal rock-shaft I having one side recessed or flattened at each end, and lever I on said shaft, substantially as set forth. 2nd. The combination of the swinging arms D, adjusting rods G, levers H, shafts I having recessed or flattened sides levers I, and gears I₂ on said shaft, substantially as set forth. 3rd. The combination of the swinging arms D, rods G, shafts I, levers I and gears I₂ mounted on said shafts, and means whereby one of said gears can be alternated on said shafts, to a loose mounting, thus causing both the movable rolls to open when either of said levers is operated when fixed, or permitting one to remain stationary when loose, substan-

tially as set forth. 4th. The combination of the handles or levers I₁, having projections i₂, the bars L having lugs I, I₁, the arms K₁, the shafts K, and the feed-gates, substantially as set forth. 5th. The combination, in a double roller mill, of two separate bars L, each having a lug l₁, the two arms K₁, the two shafts K and the two feed-gates, said bars being adapted to work separately or together, whereby the feed can be shut off from both sides of the mill, successively or simultaneously, substantially as set forth. 6th. The combination of the swinging arms D, the pivot-pins d, the boxes E, the tempering-rods F, the fulcrums or fixed stops a, the adjusting rods G, the levers H, the shafts I having flattened or cam surfaces at the points of contact with said levers, and handles or levers for operating said shafts, substantially as set forth. 7th. The frame A of a roller mill, provided at a point below the grinding-rolls with spout-like projections A₂, having covers a₂, substantially as described and for the purposes specified.

No. 19,339. Car-Coupling. (*Accouplage de Chars.*)

Frederick M. Wright, Fern Ridge, Mo., U.S., 14th May, 1884; 5 years.

Claim.—1st. In a car-coupling, a draw-head connected with a draw-bar E, with moving plate G secured thereto, and connected with pivoted levers K and the rods L, provided with buffing plates p, the parts being properly supported, substantially as and for the purposes described. 2nd. In combination with a draw-head having a draw-bar E coupled thereto, a box F, plate G moving on guide-rods g within the box, pivoted levers K connected with plate G, rods L provided with plates p and the buffers M, the parts being properly secured in position, substantially as and for the purposes set forth. 3rd. In combination with a draw-head and draw-bar loosely supported, as shown, the moving plate G having arms k connected with levers K, which are connected with buffing rods L, the slotted box F provided with a removable bottom, the guide rods g and springs h, the parts being constructed, substantially as shown for the purposes set forth. 4th. In combination with a draw-head having a coupling-hook, roller P, journalled in bearings secured to the car, and connected by a chain with the hook, said roller being provided with the fixed handles T each having one arm longer than the other, and constructed to bind against the car, as herein set forth for the purposes specified. 5th. In combination, with the draw-head loosely supported, as shown, a rotative shaft N having bearings fixed to the car, said shaft being connected by chains with the draw-head, and provided with the removable handles q, substantially as set forth and described.

No. 19,340. Road Scraper. (*Grattoir de Chemin.*)

Marcus E. Cook, Wallingford, Ct., U.S., 14th May, 1884; 5 years.

Claim.—1st. In a road scraper, the frame supported upon an axle carrying wheels at the rear, and an axle carrying wheels at the front, a transverse abutment arranged upon said frame on a vertical axis, and made adjustable on said axis to change the angle of the abutment with relation to the direction in which the apparatus is drawn, a scraper in front of, and so as to bear against said abutment and partake of its adjustment in a horizontal plane, said scraper adjustable vertically independent of said abutment, substantially as described. 2nd. In a road scraper, the combination of the frame supported upon wheels at the front and rear, an abutment hung to the frame between the front and rear wheels upon a vertical axis, a toothed segment in connection with said abutment, a shaft and pinion working into said segment, whereby said segment and abutment may be turned to varying angles, a scraper arranged in front of said abutment and made adjustable therein, substantially as described. 3rd. In a road scraper, the combination of the frame supported upon wheels at the rear and front, and abutment arranged upon a vertical axle in said frame between the front and rear wheels, a toothed segment in connection with said abutment, a shaft and pinion working into the teeth of the segment, a scraper arranged in front of, and so as to bear against, said abutment, with a lever hung upon said abutment at each side, each lever in connection with its respective end of the scraper, substantially as described. 4th. In a road scraper, the combination of a frame supported upon an axle carrying wheels at the rear, and an axle carrying wheels at the front, a transverse abutment hung upon a vertical axis in said frame, and made adjustable in said axle to different angles to the direction in which the apparatus is drawn, but held in its bearings to prevent change of elevation with relation to the frame, a fixed segment i in rear of said abutment, the axis on which the abutment turns being the center of said segment supported by braces l, l, substantially as described. 5th. In a road scraper, the combination of a frame arranged upon wheels at the rear and front and carrying an adjustable scraper between said front and rear wheels, the frame at the front provided with a longitudinal rocker D resting in a longitudinal central line upon the fifth wheel of the forward axle, and the king-bolt through said rocker fifth-wheel and axle, said rocker rounded upon its under surface, substantially as and for the purpose described.

No. 19,341. Portable Adjustable Reading Desk. (*Pupitre Pliant Portatif.*)

Andrew Johannesen, Erie, Penn., U.S., 14th May, 1884; 5 years.

Claim.—1st. A standard A provided with a clamp B, and containing an adjustable spindle C, having hinged on its top e id an arm D, in combination with the bar E fixed to the arm D, and adjustably connected to the desk F. 2nd. The standard A, spindle C, arm D and bar E, adjustably connected and hinged, as described, in combination with the pieces p, q, and r hinged together as specified, and forming the desk F, substantially as and for the purpose specified. 3rd. The jaws a, pivoted at b and provided with tail pieces c, connected to nut d as specified, in combination with the hand screw I, fitting into the nut d and arranged to adjust the jaws a, substantially as and for the purpose specified. 4th. The hollow standard A containing the spindle C, and having hole cut through it to receive the block f, in combination with the collar J fitted into the standard A over the block f, and having formed on its inner surface a cam j, the whole being arranged and operating substantially as and for the purpose specified. 5th. The arm D connected to the top of the spindle C by a knuckle point, as specified, wedge pieces k being placed on either

side of the said point, in combination with the band K, pivoted on the knuckle point and arranged to press against the wedge pieces L for the purpose of jamming the knuckle point, substantially as and for the purpose specified. 6th. The bar E fixed to the arm D, and passing through a hole in the block m, which block is fixed to the inside of the desk F, as specified, in combination with the eccentric n, arranged to form a rigid connection between the bar E, and block m, substantially as and for the purpose specified.

No. 19,342. Churn. (*Baratte*.)

William H. Dyer, Midway, Va., U.S., 14th May, 1884; 5 years.

Claim.—In a churn, the combination of the cream receptacle D, having flange L and gasket M, and cover consisting of the hinged parts F and G, recessed at f and g, and having grooved flanges J and fastening H, as shown and specified.

No. 19,343. Car-Coupling. (*Accouplage de Chars*.)

Thomas L. McKeen, Easton, Penn., U.S., 15th May, 1884; 5 years.

Claim.—1st. The combination in an automatic car-coupling, of the coupling-hook F, bolt G inserted transversely through the same link, or bail H hinged with the inner ends of the arms upon bolt G, and parallel arms I and J connected at their outer ends on opposite sides of the link by cross bar K adapted to support the free end of the link, and fastened with their inner ends upon the bolt or opposite sides of the hook, substantially as set forth. 2nd. The combination, in an automatic car-coupling, of the coupling-hook F, bolt G having projection M and arm N, link or bail H hinged with the inner ends of its arms upon bolt G, parallel arms I and J connected at their outer ends by cross-bar K and having bent fingers L, L', overlapping opposite sides of the link and the mechanism for operating bolt G and its attachments, substantially as set forth.

No. 19,344. Car-Coupling. (*Accouplage de Chars*.)

Thomas L. McKeen, Easton, Penn., U.S., 15th May, 1884; 5 years.

Claim.—1st. The combination in an automatic car-coupling, of the tubular draw bar D, draw head D', having the depressed or sunken portion d', fixed hook F, constructed with a wide web f, terminating in the offset or shoulder f', plunger P, having piston rod Q, projecting into the tubular draw head and springs E, substantially as and for the purpose shown and set forth. 2nd. The combination, in an automatic car-coupling, of the draw-head D, constructed as described, fixed hook F, constructed with a wide web f, terminating in the offset or shoulder f', spring actuated plunger P, bolt G, having at one end the arm M, parallel arms I and J, fixed upon opposite ends of the bolt on opposite sides of the hook and bent to form the recessed elbows K, L, and mechanism connected to the free end of arm M and adapted to operate the same for the purpose of adjusting the position of the link in the coupling or uncoupling the link from the hook, substantially as and for the purpose shown and set forth. 3rd. The combination, in a car coupling, of the arms T and J, adapted to bear against the under side of the link, arm M, bolt G, sliding rod C, having handles b and projecting arm C, connecting-rod c, jointed loosely at h to the outer end of arm C, and rod C', jointed loosely at its lower end to the outer end of arm C, and connecting-rod c, whereby the rod C' has a free lateral motion in its boxes or bearings a, substantially as and for the purpose shown and set forth.

No. 19,345. Fire-Escape. (*Sauveteur d'Incendie*.)

Christian E. Baker, Chicago, Ill., U.S., 15th May, 1884; 5 years.

Claim.—1st. In a fire-escape, the combination of a basket, with a piston travelling in a pipe, the speed of which is regulated by the escape of water from the pipe above such piston, and that will elevate the empty basket again by atmospheric pressure brought about by a vacuum formed below such piston, all constructed and arranged to operate substantially as and for the purpose set forth. 2nd. In a fire-escape, the pipe A, having faucets c and reservoir B, M, in combination with piston D, that by ropes E, M, and a multiple purchase connects with baskets H, the same being constructed and arranged to operate substantially as and for the purpose set forth. 3rd. In a fire-escape, the pipe A, having faucets c and reservoir B, in combination with piston D, that by rope E, and tackle F, connects with basket H, all constructed and arranged to operate, substantially as and for the purpose set forth.

No. 19,346. Carriage Painter's Adjustable Horse or Jack. (*Chèvre de Carrosserie*.)

Benedick Miller, Paola, Ks., U.S., 15th May, 1884; 5 years.

Claim.—1st. The combination of a standard having a vertical slot and an upper and lower set of holes, a semi-circle having a series of perforations and a cross piece provided with an upwardly projecting screw, with set screw and a downwardly projecting lug which is pivoted to the end of the standard, a piece E, for regulating the angle of the semi-circle and a block resting upon the top of the cross piece, all substantially as described. 2nd. The combination of a standard having a screw threaded end a, collar a', slot a², holes a³ and a⁴, a semi-circle having perforations b, cross piece H, pin D, set screw or nut D, pintle C, pin E and block I, substantially as described and for the purpose set forth.

No. 19,347. Lithographic Printing Plate.

(*Plaque pour Impression Lithographique*)

Peter C. Möllar, Leipsic, Germany, 15th May, 1884; 5 years.

Claim.—1st. The method described of preparing lithographic printing plates, which consists in moistening the surface of a metal foundation plate with a saturated solution of bi-carbonate of lime, then heating said plate, so as to evaporate the solution, and repeating these steps until a coating or deposit of bi-carbonate of lime of sufficient thickness is formed on the plate which is then used in the same manner as a lithographic stone, substantially as set forth.

No. 19,348. Boiler Flue Cleaner. (*Nettoyeur de Cheminée de Chaudière*.)

Rudolph P. Gerlach, Cleveland, Ohio, U.S., 15th May, 1884; 5 years.

Claim.—1st. In flue cleaners, the shank A and head B, said shank and head being of one piece, and provided with a flattened wide spiral and interrupted steam passage extending from the induction end of the implement through to the education end thereof, substantially as set forth, and for the purpose specified. 2nd. The flue cleaner, consisting of a spiral shank A, tapering from the education to the induction end and having wide curved discharge opening D, substantially as set forth.

No. 19,349. Car-Coupling. (*Accouplage de Chars*.)

Charles W. Spencer, Richmond, Mo., U.S., 15th May, 1884; 5 years.

Claim.—The combination, with a car draw head and an anchor-shaped link pivoted thereto, said link having upwardly and downwardly projecting hooks and a balance weight, of a bar J, extending horizontally, laterally from the rear side of the said balance-weight to the side of the car, thence extending upward and pivoted to the car at K, and thence horizontally as a lever-arm, the connecting rod m, and the elbow lever handle n, substantially as shown and described, whereby a link may be raised to disconnect it from another link either by a person on the ground beside the car, or by a person on the top of the car.

No. 19,350. Machine and Process for Spiraling Wire. (*Machine et Procédé pour Tordre le Fil de Fer en Spiral*.)

Gerham Gray, Boston, Mass., U.S., 15th May, 1884; 5 years.

Claim.—1st. The process of indenting or grooving wire spirally to which consist in imparting the desired configuration and spirality to the wire, by drawing the same through a revolving set of rotating dies, substantially as set forth. 2nd. The described machine for indenting or grooving wire spirally, composed of the bed or base-plate A, pedestal B having bearing C, tubular arbor D, constructed with the enlargement T, die-frame H, provided with a series of wheels P and rollers I, operating-mechanism consisting of the miter wheels P and D, shaft bearings N, N, and drum M, the whole constructed and combined to operate, substantially in the manner and for the purpose set forth.

No. 19,351. Hydro-Carbon Furnace. (*Fourneau à Hydrocarbure*.)

John B. McDonald, Chicago, Ill., U.S., 15th May, 1884; 5 years.

Claim.—1st. In a hydro-carbon furnace, the combination of the steam-coil E, steam chamber F, oil chamber H, steam syphon G and connecting-pipes and valves, substantially as described and for the purpose set forth. 2nd. In a hydro-carbon furnace, the combination of the pipes a, b, l and k, provided with the substantially described valves and the coil E, steam chamber F, oil chamber H and steam syphon G, substantially as and for the purpose hereinbefore set forth. 3rd. In a hydro-carbon furnace, the steam coil E, steam chamber F, oil chamber H, syphon G and connecting-pipes and valves, combined and operating substantially as and for the purpose described. 4th. In a hydro-carbon furnace, the combination of the coil E, steam chamber F, oil chamber H, the substantially described pipes and valves, and the steam syphon G provided with the pipe M and valves P, substantially as set forth. 5th. In a hydro-carbon furnace, the combination of the coil E, pipe a, steam chamber F, oil chamber H and steam syphon G, and pipes b provided with the valves c, i and e, and the down pipe g, and the pipe g', provided with the valve k for the removal of sediment, substantially as described and for the purpose set forth.

No. 19,352. Hose. (*Tuyau Elastique*.)

John Murphy, Brooklyn, N. Y., U.S., 15th May, 1884; 5 years.

Claim.—1st. As an article of manufacture, a hose containing an interior and exterior layer of rubber, and interposed between said layers of rubber, a textile fabric cut straight, surrounded by a textile fabric cut on the bias, substantially as set forth. 2nd. In a hose, the combination, with a textile fabric cut straight, of a textile fabric cut on the bias and so arranged that the textile fabric cut on the bias is outside of the textile fabric cut straight, substantially as and for the purpose set forth.

No. 19,353. Hay Knife. (*Couteau à Foin*.)

William H. Carter and Joseph R. Bodwell, Hallowell, Me., U.S., 15th May, 1884; 5 years.

Claim.—1st. A hay knife having a curved blade A, provided on one side with grooves c, running at an acute angle to the edge and quite across the blade, all substantially as described. 2nd. In a curved hay knife, a series of grooves inclined on the side towards the edge and approximately vertical on the other, as and for the purpose set forth.

No. 19,354. Hinge. (*Penture*.)

Wallace H. Carter and Joseph R. Bodwell, Hallowell, Me., U.S., 15th May, 1884; 5 years.

Claim.—The hinge, herein described, consisting of a part c for connection with the door, the part e pivoted to a bracket or equivalent device secured to the floor, and the segment a connecting the parts c and e, the whole being arranged and operating substantially as described.

No. 19,355. Trunk Castor. (*Roulette de Coffre*.)

Sigmund M. Michilson and George Sylvester, Milwaukee, Wis., U.S., 15th May, 1884; 5 years.

Claim.—1st. A trunk-roller journalled between the arms of a swinging frame having a vertical hub and a protecting plate, all solid or integral with each other, the said hub being pivoted to the center of a depressed plate having protecting and downward projecting walls, the journals of said roller being entirely above the protecting-plate which is perforated to allow the roller to project through, but otherwise entirely covering the well or recess within which the roller bearing moves, substantially as set forth. 2nd. A combined trunk-roller and corner-iron, the latter having a corner bumper and a depression or recess in which the roller moves, the latter being journalled between the arms of a swinging frame having a solid hub and solid covering plate cut away to allow the roller to project through, but inclosing the journals of the roller and their bearing-frame, substantially as set forth.

No. 19,356. Current Wheel. (*Moulin à Eau.*)

Henry Carre, Brockville, Ont., 15th May, 1883; 5 years.

Claim.—1st. In a current wheel, the buckets F attached to the endless cables E passing over the disks D, D₁ which are arranged one behind the other in the direction of the stream and in the same vertical plane, substantially as shown and described. 2nd. In a current wheel, the combination of the pontoons or floats A and tie-beams B with the shafts C journalled in bearings in said pontoons, and the disks D, D₁ fixed on said shafts and carrying the endless cables E which have the buckets F suspended from them, substantially as herein described and shown and for the purpose set forth. 3rd. The combination of the above-described motor, consisting mainly of the pontoons A, tie-beams B, shafts C, disks D, cables E and buckets F, with steam or other power arranged to operate the same reversely, so that it would thereby be available as a steam tug.

No. 19,357. Gas-Purifying Screen.

(*Dépurateur à Gaz.*)

Emanuel Provonchar, Vallejo, Cal., U. S., 16th May, 1884; 5 years.

Claim.—The gas-purifying screen consisting of the double bevelled slats A, and tie-bolts B having washers C, in combination with the swinging handles or standards D hinged upon the end bolts B, substantially as and for the purpose herein described.

No. 19,358. Truss Pad.

(*Tampon de Bandage Herniaire.*)

George L. Gerard, New Haven, Ct., U. S., 16th May, 1884; 5 years.

Claim.—1st. As an article of manufacture, the herein described truss pad consisting of a concavo-convex shell of vulcanized rubber formed on its concave side with a tapering stem, a flanged washer to keep the end of the stem from spreading, and fastening-screws for holding the washer in place, as set forth. 2nd. As an article of manufacture, the herein-described bed truss pad consisting of a concavo-convex shell of vulcanized rubber having ventilating opening, and a chamamois, or equivalent covering, and provided on its concave side with a tapering stem, as and for the purpose set forth. 3rd. As an article of manufacture, the herein-described truss pad consisting of a concavo-convex shell having a tapering stem B, a washer to keep the end of the stem from spreading, fastening-screws to hold the washer in place, ventilating-openings J and covering K, as set forth.

No. 19,359. Soil and Waste Pipe.

(*Tuyau de Dégorgement.*)

James Barrett, Boston, Mass., U. S., 16th May, 1884; 5 years.

Claim.—In a soil or drain pipe, the passage B through its side, having an elongated opening E at the inner periphery of the pipe, and an opening C at the outer periphery of the pipe, constructed for the reception and attachment of a cover thereto, substantially as described for the purpose specified.

No. 19,360. Vessel for Containing and Transporting Liquids, &c. (*Vaisseau pour Contenir et Transporter les Liquides, &c.*)

Daniel W. Norris, Elgin, Ill., U. S., 16th May, 1884; 5 years.

Claim.—1st. As a new article of manufacture, an incased vessel having a glass body and a top composed of a single piece of sheet metal shaped to form the cover for the mouth of the body, and also the internal and external annular flanges between which the upper portion of the body is placed in attaching the top to the body, and provided with a filling orifice and a pouring spout, and secured to the body by a cemented screw connection, substantially as described. 2nd. In combination, with the glass body, the top composed of a single piece of sheet metal forming a cover for the mouth of the body, the external and internal annular flanges having the groove between them and provided with a filling-orifice and pouring-spout, substantially as described. 3rd. The top composed of a single piece of sheet metal forming the cover for the mouth of the body, and also the internal and external annular flanges, in combination with the supplemental internal annular flange and the glass body, substantially as described. 4th. The top composed of a single piece of sheet metal forming the cover for the mouth of the body, and the external annular flange, in combination with the supplemental internal annular flange having its upper edge turned outward, and the glass body, substantially as described. 5th. A sheet-metal top provided with an internal annular flange, and an external annular screw-threaded flange, in combination with the body of a glass vessel having a screw-shaped upper portion, substantially as described. 6th. The funnel-shaped sheet-metal top provided with a filling-orifice, and a pouring-spout, substantially as described. 7th. A can having a funnel-shaped sheet-metal top which is provided with a filling-orifice at its lowest portion, and a pouring spout near its upper portion, substantially as described. 8th. A can having a funnel-shaped sheet metal top which is provided with a filling orifice, and with a pouring spout, substantially as described. 9th. The combination, with a vessel having a

pouring orifice, of a spring-supported bar or lever carrying a pad or stopper at its outer end for closing the pouring-orifice, and means for first pressing the inner end of the lever to a fulcrum or bearing, and then causing it to turn on said bearing and release the pad from the pouring-orifice, substantially as described. 10th. The combination, with a vessel having a pouring-orifice and a vent, of a spring-supported bar or lever carrying a pad or stopper at its outer end for closing the pouring-orifice, and a valved plunger adapted when pressed to open the vent, force the inner end of the lever to its fulcrum or bearing, and then cause the lever to turn on said bearing and release the pad from the pouring orifice, substantially as described. 11th. The combination, with a pouring orifice, of the spring-supported lever having the pad or stopper at its outer end, of the loop constituting the fulcrum or bearing for the inner end of the lever and of the plunger for operating the lever, substantially as described. 12th. The combination, with the pouring orifice, of the lever having the pad or stopper, the guide loop and its spring, the inner loop or fulcrum and the plunger, substantially as described. 13th. The combination, with the pouring orifice and the vent, of the lever and its pad, the guide loop and spring, the inner loop forming the fulcrum of the lever and the valved plunger working in the vent-opening, substantially as described. 14th. A sheet-metal can-top provided with a pouring orifice and a vent, and having the spring-seated lever provided with the pad, the fulcrum for the inner end of the lever, and the valved plunger for operating the lever, substantially as described. 15th. A glass vessel, in combination with a sheet-metal inclosing case having one or more elongated longitudinal openings showing one or more of the principal units of measure, and one or more elongated vertical opening provided with a scale showing the minor units of measure, substantially as described. 16th. A sheet-metal case having one or more elongated horizontal openings showing one or more of the principal units of measure, and one or more elongated vertical openings provided with a scale showing the minor units of measure, substantially as described.

No. 19,361. Step Ladder. (*Echelle à Queue.*)

George McFarlane, Toronto, Ont., 16th May, 1884; 5 years.

Claim.—In a step-ladder, the shelf F pivoted, as shown, to the rear leg B, and having its forward ends rebated or notched to clasp the front legs A, in combination with a hinge E, and casting D, having a restraining flange d, as shown and for the purpose specified.

No. 19,362. Sash Balance.

(*Contrepoids de Croisée.*)

Samuel Shumard, Richmond, Ind., U. S., 16th May, 1884; 5 years.

Claim.—1st. The combination, with an inclosed coiled spring, of a two-part roller or case to contain the same, one part being flanged and serving as a cover to the other part which also has a flange, the two when closed together forming the groove for the suspension tape, all and for the purposes set forth. 2nd. The combination of the two-part spring-containing roller or drum and the brake pressing upon the periphery of the same, said brake being attached to the bent spring-arm which is adjustable from the outside by means of a screw, as and for the purposes set forth. 3rd. The combination of the two-part spring-containing roller or drum and the brake pressing upon the periphery of the same, said brake being attached by means of arm G₁, and the pressure of the brake regulated by means of screw H, from the outside, as and for the purpose set forth.

No. 19,363. Hand Grenade for Extinguishing Fire. (*Grenade à Main pour Éteindre le Feu.*)

John J. Harden, Chicago, Ill., U. S., 16th May, 1884; 5 years.

Claim.—1st. A hand grenade for extinguishing fires, consisting of a receptacle formed of glass or other frangible material, and having an orifice with a stopple fitted therein, the stopple being provided with an interior recess opening into the interior of said receptacle, substantially as and for the purpose set forth. 2nd. A hand grenade for extinguishing fires, consisting of a receptacle formed of glass or other frangible material, and having an orifice provided with a stopple fitted therein, the stopple being provided with an interior recess opening into the interior of the receptacle, said orifice being also provided with an enlargement above said stopple, and ending with an inwardly inclined flange, substantially as and for the purposes set forth. 3rd. In a hand grenade for extinguishing fires, consisting of a receptacle formed of glass or other frangible material, and having an orifice provided with an enlargement ending with an inwardly inclined flange, the combination with said receptacle, of a rubber stopple having an interior recess opening into said receptacle, and an exterior flange at its upper end, substantially as and for the purposes set forth.

No. 19,364. Means or Apparatus employed in the Manufacture of Iron and Steel. (*Moyen ou Appareil employé dans la Fabrication du Fer et de l'Acier.*)

Thomas Griffiths, Abergavenny, Eng., 16th May, 1884; 15 years.

Claim.—1st. The combination of tube g₁, plug, stopper, valve, or cover g₂, grooved collar g₃ and weighted clutch lever h connected to the rod j, by which all the plugs, stoppers, valves or covers g₁ are simultaneously operated, substantially as herein shown and described and for the purpose stated. 2nd. The plug, stopper, valve, or cover g₁, in combination with the tube g₂ on which it is fixed and by which it is operated, to open and close the passage through the tuyere, substantially as herein shown and described. 3rd. The combination of tubes g, g* and plug, stopper, valve, or cover g₁, together with means for adjusting the nozzle of tube g in relation to the tuyere, substantially as herein shown and described, with respect to Fig. 4 and for the purpose stated. 4th. The combination of hinged weighted plug, stopper, valve, or cover g₁, with rod or pusher n, grooved collar g₃ and weighted lever h for operating the same, substantially as herein

shown and described with respect to Figs. 7 and 8. 5th. The combination of hinged plug, stopper, valve, or cover g_1 , link g_7 , collar g_3 and tube g , substantially as herein shown and described, with respect to Figs. 9, 10, 11 and 12. 6th. Forming one or more small grooves or passages in the face of the plug, stopper, valve or cover g_1 , or in the seat for the same, in lieu of forming a small passage through the centre of the plug, stopper, valve, or cover g_1 , or through the tube g , substantially as herein described and for the purpose stated.

No. 19,365. Means or Apparatus employed in the Manufacture of Iron and Steel. (*Moyen ou Appareil employé dans la Fabrication du Fer et de l'Acier.*)

Thomas Griffiths, Abergavenny, Eng., 16th May, 1884; 15 years.

Claim.—1st. The employment of sliding valves or covers g , formed with or without central holes g_1 , substantially as herein shown and described and for the purpose stated. 2nd. The combination of sliding valve or cover g , axis g_1 , lever g_5 , chains J, J, weights J, guide rollers h and lever t , substantially as herein shown and described and for the purpose stated. 3rd. The employment of screwed sight tubes h for viewing the tuyeres, and, when required, forcing the valves g to their seats, substantially as herein shown and described. 4th. The peculiar construction of blast chamber e , and the method of facilitating repairs and renewals of the tuyeres c , and blocks i , substantially as herein shown and described. 5th. The tuyeres c , made longer than the blocks i receiving the same, and the small lateral openings c_2 in the tuyere near their outer ends, substantially as herein shown and described and for the purpose stated. 6th. Constructing the converter with two or more small holes m at different levels for the removal of the cinder from time to time, substantially as herein shown and described.

No. 19,366. Means or Apparatus employed in the Manufacture of Iron and Steel. (*Moyen ou Appareil employé dans la Fabrication du Fer et de l'Acier.*)

William J. Clapp, Montygo, and Thomas Griffiths, Abergavenny, Eng., 16th May, 1884; 15 years.

Claim.—1st. The combination, with each tuyere d and blast box or chamber e , of a plug or stopper g , hollow piston rod g_1 , double piston g_2 g_3 , double cylinder h h_1 , and blast pipes f , f_1 , f_2 , i , i_1 , substantially as herein shown and described and for the purpose stated, and, 2nd. The combination, with plug or stopper g , of double piston g_2 g_3 , double cylinder h h_1 and blast pipes f , i , i_1 , substantially as herein shown and described and for the purpose stated.

No. 19,367. Safety Device for Locomotive Pilots. (*Appareil de Sécurité pour Locomotives Pilotes.*)

Oscar Rothrock, Beech Creek, Pa., U.S., 16th May, 1884; 5 years.

Claim.—1st. The combination, with a locomotive truck, of a vertically adjustable pilot, and means for operating the same from the cab of the engine, as set forth. 2nd. The combination of a vertically adjustable locomotive-pilot, having spaces u , n , n , for receiving the draw-head and bumpers, with the mechanism consisting of the links f , f_1 , rock-shaft E, lever h and rod g , substantially as and for the purpose set forth. 3rd. The combination, with a locomotive truck having posts p , p , of a vertically adjustable pilot attached to said posts, and means for operating said pilot at the will of the operator, as described. 4th. The combination, with a locomotive truck having posts p , p , at its forward end, said posts having guides o , o , of the vertically adjustable pilot, constructed as described, and the means, substantially as herein set forth, whereby the same is operated from the cab of the engine. 5th. The combination, with a locomotive truck having suitable guides at its forward end, of a vertically adjustable pilot moving in said guides, and means for raising and lowering the same, substantially as described.

No. 19,368. Woven Wire Seat.

(*Siège en Toile Métallique.*)

Henry Roberts, Hartford, Ct., U.S., 17th May, 1884; 5 years.

Claim.—The combination, in a seat, of the top woven-wire fabric, the strands of which run across the seat, and a side woven-wire fabric, the strands of which run lengthwise of the seat, and one or more spiral springs under the top fabric, all arranged substantially as described.

No. 19,369. Heating Water by Means of Gas.

(*Chauffage de l'Eau par le Gaz.*)

Thomas Fletcher, Warrington, Eng., 17th May, 1884; 5 years.

Claim.—1st. In an apparatus for heating water by means of gas, a casing, a dash plate, a shallow tray a and an annular water vessel g_5 surrounding the opening p , in combination with a suitable gas burner, substantially as and for the purposes described. 2nd. The within described process of heating water, or other liquids, consisting in forcing it up through a jet pipe against a dash plate, arranged within a suitable casing from which it falls downward directly through the heated products of combustion, and is gathered into an annular vessel, substantially as and for the purpose described.

No. 19,370. Manufacture of Pottery.

(*Fabrication de la Poterie.*)

Francois A. Magowan, Trenton, N.J., and Royal M. Bassett, Birmingham, Ct., U.S., 17th May, 1884; 5 years.

Claim.—1st. In combination with the moulds for pressing clay goods, a lining of sheet metal or equivalent rigid material introduced into the mould and upon which the clay is pressed, substantially as

set forth. 2nd. In combination with heated dies and mechanism for applying a pressure to such dies, the movable metallic lining that becomes heated by such dies and acts to warm and dry the clay article pressed to such movable lining, substantially as set forth. 3rd. The method, herein specified, of pressing clay goods and discharging the same from the moulds, consisting in placing a sheet metal form upon the lower die, and a thin sheet of elastic material between the clay and the upper die to prevent the adhesion of the clay to the die, and itself to become easily separated from the clay article after pressure by the dies, the sheet metal form supporting the article until it is set, substantially as set forth.

No. 19,371. Grain Binder. (*Lieuse à Grain.*)

A. Harris, Son & Co., Brantford, Ont. (Assignees of James Wedlake, Brantford, Ont., and Lyman M. Jones, Winnipeg, Man.), 17th May, 1884; 5 years.

Claim.—1st. In a grain-binding machine, tension mechanism for controlling the twine during the period that the grain is being packed, compressed and bound, located near the needle and operated by mechanism connected to the needle-shaft, substantially as and for the purpose specified. 2nd. In a grain binding machine, tension mechanism for controlling the twine during the period that the grain is being packed, compressed and bound, and operated by mechanism deriving motion from the needle-shaft, and arranged to take up the slack twine from the needle simultaneously with the application of the tension. 3rd. The tension bracket F, secured to the frame A, and having a hole c through which the twine E is threaded, and a ledge b to support the twine, in combination with the pivoted tension-arm G, actuated by the spring K, and arranged to hold the twine E against the ledge b , substantially as and for the purpose specified. 4th. The tension bracket F, formed substantially as specified, the pivoted arm G, having a projection d formed on it and actuated by the spring K, in combination with the rod I, operated by the motion of the needle-shaft, and arranged to actuate the tension arm G, substantially as and for the purpose specified. 5th. The tension-bracket F, secured to the frame A, the holes e , f and h , through which the thread E is threaded, as specified, the pivoted arm G provided with a projection d , and arranged to rest on the ledge b , the rod I, having a looped end i through which the thread E is threaded, in combination with the pivoted arm K, one end of which is connected to the rod I, and its other end to the crank-pin p , which is attached to and works with the needle-shaft C, substantially as and for the purpose specified. 6th. In a grain-binding machine, an arm K pivoted to the frame B, and having an oblong hole o formed in it through which the crank-pin p passes, which crank-pin is attached to the needle-shaft C, in combination with the rod I, supported by the pivoted arm K, and having a loop i through which the twine E is threaded, the whole being arranged and operating substantially as and for the purpose specified.

No. 19,372. Match Splint Cutting Machine.

(*Machine pour Tailler les Allumettes.*)

Alfred G. Jones, Rochester, N.Y., U.S., 17th May, 1884; 5 years.

Claim.—The combination, in a machine for cutting match splints of two feeding and cutting heads, as described, at opposite ends of the bed, of the bed of the machine and an intermediate double acting horizontal steam cylinder, having a single piston and through piston rod connected directly to the knife-heads, as set forth.

No. 19,373. Buffer for Railway Cars. (*Appareil de choc pour Chars de Chemin De fer.*)

Thomas L. McKeen, Easton, Pa. U.S., 17th May, 1884; 5 years.

Claim.—1st. As an improvement in buffers or bumpers for railway cars, the rectangular buffer-plate E having bevelled sides e , e , substantially as set forth. 2nd. The combination, in a buffer or bumper for railway cars, of the buffer-spring G, stem B and rectangular plate E having bevelled e and hinged or pivoted upon the outer end of the buffer-stem, substantially as and for the purpose shown and set forth.

No. 19,374. Reciprocating Valve Oiler.

(*Graisneur Alternatif de Soupape.*)

Samuel D. Mershon, Rahway, N.J., U.S., 17th May, 1884; 5 years.

Claim.—1st. An oiler, constructed substantially as herein shown and described, and consisting of the oil reservoir provided with a tube having an opening in one side, and a jointed discharge rod having a recess in one side, and moved forward and back by a wrist-pin in the side of the ratchet-wheel, spring pawl and vibrating pendulum, or lever, as set forth. 2nd. In an oiler, the combination, with the oil reservoir A, and the tube B having side opening E, of the jointed extensible sliding rod G, having oil-receiving recess F between the main part of said rod and the shoulder, of the extensible part G, whereby the size of the recess F may be regulated, and a driving mechanism, as set forth. 3rd. In an oiler, the combination, with the jointed extensible sliding rod G, of the shaft J, the ratchet-wheel L, spring N, substantially as herein shown and described, whereby the said recessed rod will be operated at regular intervals to discharge oil, as set forth. 4th. In an oiler, the oil-discharging rod G, made, substantially as herein shown and described, in two parts halved to each other, connected adjustably by screws, and having a recess F between the end of one part and the shoulder of the other part, whereby the size of the said recess can be readily regulated, as set forth.

No. 19,375. Fire-Escape. (*Sauveteur d'Incendie.*)

Ezra R. Johnson, Buchanan, Mich., U.S., 17th May, 1884; 5 years.

Claim.—1st. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame provided with a center opening, a table sliding in said opening, the ladders connecting with the table and mechanism for operating the table, as set forth. 2nd. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame provided with a center opening, a mechanism for raising and lowering the ladders, means for adjusting the inclination of the same, and devices for tightening the ladders, as

set forth. 3rd. In a fire-escape, the extension braces comprising bars connected together and sliding upon each other, a catch at the upper end of one of the bars engaging with the other bar, and means for withdrawing the catch from engagement, as set forth. 4th. In a fire-escape, the extension braces comprising two bars connected together and sliding upon each other, a catch at the upper end of one of the bars engaging with teeth or serrations on the other, a catch at the upper end of one of the bars engaging with teeth or serrations on the other, and a hand-lever pivoted at the lower end of one of the bars and connecting with the catch for withdrawing the same from engagement, as set forth. 5th. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame provided with a central opening, a table sliding in said opening and connected to the ladders, runners attached to the underside of the table and having a cross-bar secured thereto, a projection on the underside of the frame against which the cross-bar is adapted to abut, and means for operating the table, as set forth. 6th. In a fire-escape, the ladders constructed as explained, in combination with a frame, a table sliding on said frame and connected to the ladders, means for limiting the movement of the table and devices for operating the said table, as set forth. 7th. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a rack-bar attached at one end with one side of the ladders, and a lever pivoted to the opposite side of the lazy-tongs and engaging with the rack-bar, as set forth. 8th. In a fire-escape, the ladders constructed as explained, in combination with a rack-bar, a lever adapted to engage with the same and a detent bar arranged to be either lifted from the rack bar or engaged therewith to cause the forward movement of the same, as set forth. 9th. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a rack bar, a lever adapted to engage the same, a detent bar pivoted at its end to an operating lever, and a lifting bar attached to the side of the detent bar, as set forth. 10th. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame and a sliding table, a windlass or drum attached to the frame, and a rope or chain attached to the drum or windlass passing around suitable pulleys secured to the table and secured to the opposite side of the frame, as set forth. 11th. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with the frame, a drum or windlass provided with suitable operating means, a grooved block on the side of the ladders and a rope or chain passing from the drum or windlass to the grooved block over suitable pulleys, as set forth. 12th. In a fire-escape, the ladders constructed as explained, in combination with a frame, a pair of bars on each side of the frame carrying pulleys at their upper ends, grooved blocks on each side of the ladders adjacent to the pulleys, the drum or windlass provided with suitable operating means, and a rope or chain connecting the drum or windlass with the pulleys and grooved blocks, as set forth. 13th. In a fire-escape, the ladders constructed substantially as explained, in combination with a frame, a pair of bars on each side, carrying pulleys at their upper ends, grooved blocks on the sides of the ladders adjacent to the pulleys, a rope or chain connecting with the pulleys and grooved blocks, a drum or windlass to which the rope or chain is attached, a pawl and ratchet secured to the windlass or drum, and a set of gear wheels and pinions arranged to operate the said windlass, as set forth. 14th. In a fire-escape, the ladders constructed substantially as explained, and provided with suitable guy lines, in combination with a frame, a pair of standards attached to the sides of the frame and converging towards their upper ends, a pair of bars secured at their upper ends to the standards, pulleys journalled at the upper ends of the bars, grooved blocks on the sides of the ladder adjacent to the pulleys, a rope or chain connecting with the pulleys and grooved blocks, and attached to a drum or windlass, a pawl and ratchet secured to the latter, and mechanism for transmitting motion to the drum or windlass, as set forth. 15th. In a fire-escape, a bar secured to the upper ladder and carrying a lever having a universal movement, a hose fitted to the lever and cords also attached to said lever and passing over suitable pulleys to the ground, as set forth. 16th. In a fire-escape, a lever having a universal movement and attached to the upper ladder, a hose fitted to the lever, and means for operating the lever, as set forth. 17th. In a fire-escape, a bar attached to the upper ladder, a U-shaped plate journalled in said bar, a lever pivoted to said plate and having a hose nozzle attached thereto, and cords attached to said lever, and arranged to operate the same in the manner set forth. 18th. In a fire-escape, a bar provided with plates which hook at their upper ends over the top rungs of the upper ladder, and encircle or clasp at their lower ends one of the lower rungs, a lever attached to said bar and adapted to have a universal movement, a hose nozzle fitted to said lever, a clamp for holding the nozzle in place, and means for operating the lever, as set forth. 19th. In a fire-escape, the truck having its front wheels arranged to be thrown at right angles there to, the rear axle being divided, as shown, and connected by quadrant-shaped plates which permit the rear wheels to be thrown behind the frame or truck, as set forth.

No. 19,376. Machine for Forcing the ends of Barrels into place, when such Barrels are filled with Apples, Potatoes, or other Articles. (*Machine pour Forcer les Barils pleins.*)

William Rand, jr., Canning, N. S., 7th May, 1884; 5 years.
Claim.—1st. The jointed hoop A A, or other clamp, to hold the upper cross-bar E E down to its place, substantially as and for the purpose hereinbefore set forth. 2nd. The lever D D with an eccentric F, F, and parallel bars of wood E, E and F, F, the lower one of which E, F, is kept in its place by the pins mentioned c, c, substantially as and for the purpose hereinbefore set forth.

No. 19,377. Lumber Binder. (*Liure à Bois.*)

James Sealey, Chase, Mich., U. S., 17th May, 1884; 5 years.
Claim.—In a log and lumber binder, the combination, with the lever A having the concavo-convex portion b, of the arm C of a similar contour and shape, provided with the groove g to receive the upper edge of the lever and a short perforated arm to receive a chain-

link, the straight arm B pivoted at its upper end to the said concavo-convex portion of the lever A, and provided at the opposite end with an eye to receive a chain-link, and the binding chain, substantially as specified.

No. 19,378. Refrigerator. (*Réfrigérateur.*)

Angus McKenzie, Toronto, Ont., 17th May, 1884; 5 years.
Claim.—1st. As a refrigerator a metal box, substantially of the shape shewn, two of the sections being clasped by other two sections, substantially as shewn and for the purpose specified. 2nd. As a refrigerator, a metal box A made in sections, as described, in combination with the base E and top or cover D, such base and cover being returned at their angles in order to hold the walls together, substantially as shewn and described.

No. 19,379. Wax Extractor. (*Extracteur de Cire.*)

David A. Jones, Beeton, Ont., 17th May, 1884; 5 years.
Claim.—1st. A perforated basket placed within a case provided with a detachable cover, in combination with feet or their equivalent, arranged to support the perforated basket above the bottom of the case. 2nd. The case A having water chamber formed in its bottom with an aperture left in the top B of the said chamber, a shield F arranged to cover the said aperture, in combination with a perforated basket H, for holding beeswax, substantially as and for the purpose specified. 3rd. The perforated tube I, placed within a case A, and provided with a perforated tube J extending up its centre, and having feet b to support it above the shield F, in combination with the tube G extending from the centre of the shield F up into the tube I, for the purpose of conveying up into the said tube the steam arising from the water chamber at the bottom of the case A, substantially as and for the purpose specified. 4th. The perforated basket H placed within the case A having a water chamber at its bottom, the said basket being supported by feet resting on the shield F, which shield covers the aperture leading into the water chamber at the bottom of the case A, in combination with a spout E leading from a point at or near the level of the top B, substantially as and for the purpose specified.

No. 19,380. Hay Fork Car.

(*Porte-Fourche à Foins.*)

James Birrell and Robert Birrell, Napanee, Ont., 17th May, 1884; 5 years.
Claim.—1st. The combination of the car F and dog D, with the unlocking apparatus J O R G of the net Y, and unlocking apparatus S P R X G Z, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the car F and dog D, with the unlocking apparatus S P R X Y Z, substantially as and for the purpose hereinbefore set forth.

No. 19,381. Compound for Waterproofing and Preserving Buildings. (*Composition pour Imperméabiliser et Conserver les Bâtisses.*)

Benjamin De Nise and Harry Kucher, Camden, N. J., U. S., 17th May, 1884; 5 years.
Claim.—The within-described waterproofing compound consisting of fossil wax, carnauba wax, refined paraffine oil, and carbolic acid combined in about the proportions and in the manner specified.

No. 19,382. Engraving Machine.

(*Machine à Graver.*)

Ira Beam, Dryden, N. Y., U. S., 17th May, 1884; 5 years.
Claim.—1st. The improved engraving-machine frame consisting of plates a, b, having leg or other supports d, and connected by slotted cross-bars e, the plate a having the slotted upright support r y for the tool-frame head k, and the plate b having the copy-table a', connected to it, all substantially as described. 2nd. In an engraving-machine, the combination, with the head k adjustably connected to its support, of the frame l pivoted to the head k, the frame s pivoted to the frame l, and the frames u, v pivoted together and to the frames s, l respectively, the tool-shaft z, in the joints of the frames u, v, and the tye t, in the end of the frame s, substantially as herein shown and described. 3rd. The adjustable vice q t s t', and slotted adjustable supporting bars m' and n', in combination with the bed frame plates a, b, and the parallel tool-frame and engraving-tool, substantially as described. 4th. The table a' having flange j' and being pivoted on the lever j, connected by link d' with the bed-plate b, and having the catch-pawl h u, said table also being arranged to clamp the copy-plates c' against the edge of bed-plate b and having notches i, for the holding pawl, substantially as described. 5th. In an engraving-machine, the combination, with slotted plates a, b, of the slotted bars n' adjustably attached to said plates a, b, and the slotted plate m' for supporting adjustably a work-holding vice, substantially as described.

No. 19,385. Hose Coupling.

(*Joint de Tuyau Élastique.*)

Thomas E. Wells, Sandy Hill, N. J., U. S., 17th May, 1884; 5 years.
Claim.—1st. The combination, with hose sections, of the collar A having hook-prongs B projecting beyond the end, and annular groove C, the metallic rings D, E, and the packing ring D', as and for the purpose specified. 2nd. The combination, with the collar A having hook prongs B, of the pivoted locking lever G, substantially as herein shown and described. 3rd. The combination, with the collar A having hook prongs B, of the pivoted locking lever G, and the spring H, substantially as herein shown and described.

No. 19,384. Steam Engine. (*Machine à Vapeur.*)

Levi Wismer, Johnson's Mills, Ont., 17th May, 1884; 5 years.

Claim.—1st. The slide valve H having reduced ends *f, f'* for instantaneously opening and closing the ports *g, g'*, of steam-chest I, substantially as shewn and specified. 2nd. The adjustable sliding-block K L, connected to valve rod G and actuated by the eccentric disk E F, for the purposes of communicating instantaneous motion to the slide-valve H, as shewn and specified. 3rd. In combination with the sliding block K L, an eccentric disk E F, having suitable groove or flange *a* shaped as shewn and specified, and for the purpose set forth.

No. 19,385. Corner Fastening for Frames.

(*Couture des Coins des Câdres.*)

John E. Stuart, Newark, N. Y., U. S., 19th May, 1884; 5 years.

Claim.—1st. A corner-fastening for frames, composed of metal plates having diverging flanges or spurs on their adjacent sides for uniting the parts of the frame, in combination with a through-bolt, substantially as described. 2nd. The combination, with the ends of two frame-timbers, of metal plates provided with diverging sharpened flanges for drawing together and clamping said ends, in combination with a bolt connecting and drawing said plates towards each other, substantially as described. 3rd. The combination, with metal plates for uniting the ends of two timbers, of the sharpened diverging flanges or spurs and a bolt connecting the said plates, all for the purposes and substantially as specified.

No. 19,386. Transposition Key Board for Pianos and Organs.

(*Clavier de Transposition pour Pianos et Orgues.*)

William Bohrer, Montreal, Que., 19th May, 1884; 5 years.

Claim.—1st. The combination, with the key-board of a piano and organ, of a separate movable transposition key-board with sliding bank of keys. 2nd. In a transposition key-board, the combination of a stationary frame set over key-board of piano, or organ, and carrying pins or bolts corresponding to keys of same, and a sliding frame carrying keys acting when struck through said transmitting pins in stationary frame upon the keys of the key-board proper, all substantially as herein set forth and for the purposes described. 3rd. In a transposition key-board, a bar carrying pins or bolts of unequal length, and with even and levelly upper surface, all substantially as herein described, and for the purposes set forth. 4th. In a transposition key-board, a sliding frame pivoted to a stationary frame set over the key-board of a piano or organ, substantially as and for the purposes described. 5th. In a transposition key-board with sliding bank of keys, the combination therewith of transmitting pins made in two parts, so that the length of same may be adjusted, as and for the purposes set forth.

No. 19,387. Process for Ornamenting Walls, Ceilings, &c.

(*Procédé pour Décorer les Murs, Plafonds, &c.*)

John H. Harding, Milwaukee, Wis., U.S., 19th May, 1884; 5 years.

Claim.—1st. The process of ornamenting newly-plastered walls, ceilings, and other soft surfaces, consisting in applying thereto a stencil pattern with the desired design formed therein, and filling said design by pressing the stencil plate into the plastic material of the wall, ceiling or other surface, substantially as and for the purposes set forth. 2nd. The process of ornamenting dry walls, ceilings and other dry surfaces, consisting in applying thereto a stencil plate or pattern, and then filling the openings in the pattern with suitable plastic material, substantially as and for the purposes set forth. 3rd. The process of ornamenting walls, ceilings or other surfaces, consisting in, first, forming a mould of one or more stencils cemented together and properly backed, and then filling the mould with suitable plastic material, applying the same to the surface to be ornamented, and of then removing the mould and leaving the design attached to said surface, substantially as and for the purposes set forth. 4th. The process of casting ornamental and industrial designs, consisting in the formation of moulds of one or more stencils in which the desired design has been cut, by cementing the said stencils together and providing the same with a back, and in then filling the mould with suitable plastic material, which is allowed to set and harden, substantially as and for the purposes set forth. 5th. For the production of ornamental and industrial designs in relief, a mould composed of one or more stencils cemented together and provided with a back secured thereto, substantially as and for the purposes set forth. 6th. For raising ornamental and industrial designs, a mould composed of one or more stencils stuck together, and provided with a back in which a pattern is etched, engraved or embossed, substantially as and for the purposes set forth.

No. 19,388. Dredging Machinery.

(*Machine à Draguer.*)

Horace B. Angell, San Francisco, Cal., U.S., 19th May, 1884; 5 years.

Claim.—1st. The ladder or chain supporting timbers, having nose or end pieces with sockets to receive the timber ends, tumblers consisting of removable end pieces with connecting bars and rods, and supporting sleeves and shafts for the tumblers, the ladder timbers being also jointed, so that the lower end may move independent of the upper end, said upper ends being journalled in supports independent of the tumbler supports, and suspending balls and mechanism by which the ladder, or either of its sections, may be raised or lowered, as herein described. 2nd. The bucket carrying chain of a dredger, composed of single and double links, with independent tubular sectional bushings in the link ends, buckets of greater length than the links to which they are attached, and greater width than the space occupied by the chain, and having the upper forward lip cut away and the under lip projecting with interior braces for the buckets, as herein described. 3rd. A receiving hopper, into which the buckets upon the dredge chain discharge, and a water pipe or means for cleansing the buckets as they discharge, a conveying pipe connected with the hopper by an elbow or curved section supported upon a pivot pin, and

having a swivel joint between it and the hopper wheels running upon a curved track and supporting the inner end of the pipe, and masts with guy ropes extending to the frame and also to the pipe to support it where it extends away from the side of the vessel or scow. 4th. A means for advancing the vessel or scow, consisting of a central post or spud about which it swings, a secondary post, passing down at a short distance to one side of the first, and means for raising them alternately as the vessel swings to one side or the other, ropes anchored to the banks upon each side and passing through leading blocks upon the vessel to winding drums, with friction gear and connecting levers as described.

No. 19,389. Land Marker.

(*Traceur de Lignes.*)

William H. King, Little Silver, N.J., U.S., 19th May, 1884; 5 years.

Claim.—1st. The combination of the roller-plate flanges F, the frame I pivoted to the roller-axle and carrying the plow M, whose standard is pivoted to said frame, said frame also having a spring-hook Y, the bar O pivoted to the plow standard and with its free end adapted to rest on a roller P of the beam B, and the hand-lever X pivoted upon the frame I and connected to the bar O, said lever having a supplementary lever *c* having means for operating the spring-hook Y, substantially as and for the purpose set forth. 2nd. The combination of the roller-plate flanges F, the frame I pivoted to the roller-axle, said frame also having a spring-hook Y, the bar O pivoted to the plow standard and with its free end adapted to rest on a roller P, the base R connected to the bar O and having a slot U in its end connected to the plow-standard, and the hand lever X pivoted to the frame I and provided with springs for operating the spring-hook Y, substantially as and for the purpose set forth. 3rd. The combination of the roller-plate, flanges F, the foot-plate *f* pivoted to the latter and having the fixed forwardly-projecting arm *o* in turn provided with an upwardly projecting flange, having a bolt *p* upon which is pivoted the slotted bar *q*, the rods *g, h* and foot *k*, curved bar *r*, shaft *t* and lever *u* having a pawl *b* and catch bar *v*, substantially as and for the purpose set forth.

No. 19,390. Gravitation Grain Cleaning and Cooling Apparatus.

(*Appareil à Gravitation pour Nettoyer et Rafraîchir les Grains.*)

William Shaw, Paris, Ky., U.S., 19th May, 1884; 5 years.

Claim.—1st. In a building or warehouse, the combination, with a vertical and a horizontal flue, of a wheel located within the vertical flue and a draft-fan located in the horizontal flue, substantially as shown and for the purpose set forth. 2nd. In a grain-cleaning apparatus, the combination, with a vertical flue or chute A, having openings for the supply of grain, as shown, of the wheel B having its periphery in said chute, flues D and E, and suction-fan C, the parts being organized, substantially as shown and for the purpose set forth.

No. 19,391. Portable Windlass.

(*Treuil Portatif.*)

William Smith, Tomah, Wis., U.S., 21st May, 1884; 5 years.

Claim.—1st. In a windlass, the drum provided with the upper and lower concave flanges, as set forth. 2nd. In a portable windlass, the combination, with the flanged drum having the arm at its upper end, of the half-clevis and link forming the frame thereof, and mechanism for winding the drum, as set forth. 3rd. In a portable windlass, the drum provided with the half-clevis and link forming the detachable frame thereof, as set forth. 4th. In a portable windlass, the combination, with the drum having the arm at its upper end, a suitable frame thereof, and the operating lever detachably secured to the arm, as set forth. 5th. In a portable windlass, the combination, with the flanges drum provided with the arm at the top, and the clevis forming the frame for the drum, of the centre-bolt having the inclined loop at its upper end and the operating lever attached to the arm and passing through the loop, as and for the purpose set forth. 6th. In a portable windlass, the combination, with the drum having the arm and oblique loop at its upper end, and supported in bearings in a suitable frame, of the rope and pulley, the latter having the pivoted guards for holding the rope in place and operating lever for winding the drum, as set forth. 7th. The combination, with the cross plank clevis and mechanism for operating the machine, of the base, as set forth. 8th. The combination, with the drum having an arm at its upper end, a suitable frame for supporting the drum, mechanism connecting the drum with the object to be moved, and an operating lever having its end passing through an eye or loop on the upper end of the drum, and secured by a strap or link to the arm, as set forth. 9th. In combination, with the windlass, as constructed and described, and attachments, a slack pulley, substantially as and for the purpose set forth.

No. 19,392. Rotating Ploughs for Submarine Work.

(*Charrues Rotatoires pour Travail Sousmarin.*)

Allexey W. Von Schmidt, San Francisco, Cal., U.S., 21st May, 1884; 5 years.

Claim.—1st. The plows A provided with landsides *b*, curved to conform to the circle of their rotation, in combination with a rotary frame or ring D and driving shaft E, substantially as and for the purpose set forth. 2nd. In combination, with the plows A provided with curved landsides, as described, and the revolving frame or ring D, the driving hollow shaft E and suitable hose and connections G, F, substantially as and for the purpose set forth.

No. 19,393. Clamp.

(*Mordache.*)

Philip F. Corbett, Boston, Mass., U.S., 21st May, 1884; 5 years.

Claim.—1st. In a clamp, substantially such as described, a slide

adapted to be moved back and forth along the body of the clamp between the head and tail stocks, said slide being provided with means for keeping it in engagement with the body, and with means for securing it in any desired position thereon, substantially as and for the purpose set forth. 2nd. In a clamp, substantially such as described, the slide K, provided with the flanges *v* and screw T, in combination with the body A, tail-stock C, head-stock B and screw J, constructed, combined and arranged to operate, substantially as specified. 3rd. In a clamp, substantially such as described, the slide K provided with the face-plates R, S, screw T and flanges *v*, substantially as set forth.

No. 19,394. Vegetable Steamer.

(*Cuisinière à Légumes.*)

Llewellyn M. Marr, Boston, Mass., U.S., 21st May, 1884; 5 years.

Claim.—A vegetable steamer, consisting of the body A increasing in diameter from the bottom up, and having the central open tapering tube B increasing in diameter from the top down, the perforated disk C having the central hole *b* and the conical cover D, whereby the bodies of several steamers can be packed together and also their covers with the disks, as set forth.

No. 19,395. Lever for Shifting Saws on Edgers & other Devices for Cutting Lumber. (*Lever pour Changer les Scies de Débossier et autres Appareils pour Tailler le Bois.*)

Daniel L. Stevens, Lyons, Iowa, U.S., 21st May, 1884; 5 years.

Claim.—1st. The combination of the bifurcated head B, plate B₂, lever F and the guide-pin block H, pivoted centrally to the bifurcated head, substantially as and for the purpose described. 2nd. The combination of the plate B₂, lever F, pivoted blocks H, guide-pins L, and the bifurcated head A connected to the plate B₂ by a joint adapted to enable the entire head to be raised away from the saw, substantially as and for the purposes set forth. 3rd. The combination of the hinged bifurcated head B, the pivoted blocks H having the guide-pins L, the lever F and the plate B₂ joined to the bifurcated head and to the lever, and provided with the offset *b*, substantially as and for the purposes described. 4th. The combination with the lever-plate F, having the transverse slot O, of the bifurcated jointed head B, pivoted blocks H, guide-pins L and the plate B₂, provided with the longitudinal slots *a*, *a*, substantially as and for the purposes set forth. 5th. The combination of the pivoted blocks H, pins L, bifurcated jointed head B, plate B₂ provided with longitudinal slots *a*, *a*, the lever F provided with the transverse slot O and pivoted studs E₁, *c*, the yoke of provided with the set-screw E, the dog G and the notched gage-bar J, substantially as and for the purposes described.

No. 19,396. Process and Apparatus for Making Soap Sheets. (*Procédé et Appareil pour faire les Feuilles de Savon.*)

Heinrich Buczkowski, Vienna, Austria, 21st May, 1884; 5 years.

Claim.—1st. The above described process of manufacturing soap sheets, consisting essentially in carrying woven fabrics or paper maintained in a stretched condition by strikers or rollers through a soap solution, freeing them on both sides from the surplus soap, and winding them up on a rolling apparatus, or conducting them directly to a cutting machine, whereby the impregnated paper is dried on its web from the stripping rollers to the rolling apparatus, or cutting soap sheets, substantially as described. 2nd. An apparatus for making soap sheets, consisting essentially in a trough heated by steam or hot water, and containing guiding and stripping rollers adapted to be heated from their interior, a striker for smoothing the paper or stuff when it enters the trough, and a stripping cylinder for freeing it from surplus soap when it comes out, the whole system of strikers or stripping cylinders guiding and stripping rollers causing the paper to be impregnated with soap solution to pass in a stretched condition through the trough containing the solution, substantially as set forth. 3rd. The employment of a mixture of about 10 parts by weight of glycerine, 35 parts by weight of spirit, 60 parts by weight of dried glycerine soap, and about 50 parts by weight dried neutral soap, viz: 1/2 to 1 parts of turpentine oil for the manufacturing of soap sheets, soap to facilitate the drying of the same and to give a finer gloss to the sheets or leaflets, substantially as described. 4th. As a new or absorbent material, a soap sheet made from paper or other fibrous material, coated with a mixture of soap, glycerine and spirit, substantially in the proportions specified.

No. 19,397. Embroidering Machine. (*Machine à Broder.*)

Julius Jonson, New York, N.Y., U.S., 21st May, 1884; 5 years.

Claim.—1st. In an embroidery-machine, the combination, with a fabric-frame and a needle-carriage movable toward and from the same, upon said continuously rotating shaft, a stationary rack driving mechanism upon said carriage engaging with said rack for imparting motion to said carriage for automatically reversing said driving mechanism, a rising and falling tension-bar, and devices through which said tension bar acts in rising to release said reversing-gear, substantially as herein described. 2nd. In an embroidery-machine, the combination, with a fabric-frame and a needle-carriage, of a continuously rotating shaft, a stationary rack driving mechanism upon said carriage engaging with said rack for imparting motion to the carriage from said shaft, a clutch movable with said carriage and through which said shaft operates said driving mechanism, a lever for controlling said clutch, a rising and falling tension-bar devices adapted to be operated by the movement of the tension-bar to release said lever, and a spring *g* or its equivalent, and connections upon said carriage for

moving said lever when released to reverse the movement of said carriage, substantially as herein described. 3rd. In an embroidery machine, the combination, with a fabric-frame and a movable needle-carriage, of a continuously rotating shaft, a stationary rack driving mechanism upon said carriage engaging with said rack for imparting motion to the carriage from said shaft, a clutch movable with said carriage and through which said shaft operates said driving mechanism, a latch and connections for holding said clutch in one operative position, a spring or its equivalent upon said carriage, and connections through which it acts upon said clutch to reverse it, a rising and falling tension bar connected with said latch for withdrawing it, and stops for retracting said spring or its equivalent at the termination of inward movement of the carriage, and for moving the clutch into engagement with the latch, substantially as herein described. 4th. The combination of the fabric-frame B, needle-carriage C, gearing C₃, wheels C₅, C₆, clutch *c*₃, lever D₂, latch *e*₄, lever *e*₆, spring-box *d*, tension bar I, rock-shaft *i*₁, connections between the bar I and shaft *i*₁, and rotary catch *c*₉, substantially as herein described. 5th. The combination of the fabric-frame B, needle-carriage C, gearing C₃, wheels C₅, C₆, clutch *c*₃, lever D₂, latch *e*₄, lever *e*₆, spring *e*₇, hook *e*₈ spring-box *d*, tension-bar I, rock-shaft *i*₁, connections between the bar I and shaft *i*₁, and rotary catch, *c*₉, substantially as herein described. 6th. In an embroidery machine, the combination, with a fabric-frame and a movable needle carriage, of a continuously rotating shaft, a stationary rack, driving mechanism with said rack for imparting motion to the carriage from said shaft, a clutch movable with said carriage and through which said shaft operates said driving mechanism, a latch and connections upon said carriage for holding the clutch in one position, a spring or its equivalent and connection upon the carriage for reversing said clutch, and means for automatically withdrawing the latch to release the clutch, substantially as herein described. 7th. In an embroidery machine, the combination, with a fabric frame and a movable needle-carriage, of a continuously rotating shaft, a stationary rack driving mechanism upon said carriage engaging with the rack for imparting motion to said carriage from the shaft, a clutch movable with said carriage and through which the shaft operates said driving mechanism, a latch and connections for holding the clutch in one position, a spring or its equivalent, and connections upon the carriage for reversing the clutch, means for automatically withdrawing said latch, and stops for retracting the spring or its equivalent and for returning the clutch into engagement with the latch at the termination of the inward movement of said carriage, substantially as herein described. 8th. In an embroidery-machine, the combination, with a fabric-frame and needle carriage movable toward and from the same, of two intermittently rotating cams adapted to operate simultaneously and to be connected with their operating mechanism by the inward movement of either carriage, devices through which one of said cams acts to connect either carriage with its driving mechanism for moving it outward, and devices through which the other of said cams acts to disconnect said cams from their operating mechanism, substantially as herein described. 9th. In an embroidery-machine, the combination, with a fabric-frame and needle-carriage movable toward and from the same, of the intermittently rotating sleeve comprising the cams *e*₄ and *f*₂, a stop for arresting the movement of said sleeve, and devices adapted to be acted upon by either carriage in its inward movement for connecting said sleeve with its operating mechanism, and for removing said stop, substantially as herein described. 10th. The combination, with fabric-frame B and needle-carriages C, of the continuously rotating shaft D, the racks *c*₁, the driving mechanism and clutches movable with said carriages, the clutch-levers D₂ for reversing the driving mechanism of said carriages, an intermittently rotating cam adapted to be connected with its operating mechanism by either carriage in its inward movement, and devices through which said cam acts upon said clutch levers for connecting either carriage with its driving mechanism for moving it outward, substantially as herein described. 11th. The combination, with the fabric-frame B and carriages C, of the clutch lever *c*₃, the intermittently rotating cam or cams *f*₂, the trips *h*, *h*, adapted to be operated by said carriages to act upon said lever, and the bar G₃, for throwing said trips off said lever, substantially as herein described.

No. 19,398. Telegraph Apparatus. (*Appareil Télégraphique.*)

Robert K. Boyle, Brooklyn, N.Y., U.S., 21st May, 1884; 5 years.

Claim.—1st. The combination, substantially as hereinbefore described, with the permanently charged electro-magnet, of the wire 10 which forms a continuation of the line or cable and which is stretched between the jaws of the electro-magnet, a slide which carries the pen or recording device, and mechanism, substantially such as herein described, said mechanism being actuated by the attraction or repulsion of the wire 10 and serving to impart motion to the slide. 2nd. The combination, substantially as hereinbefore described, with the permanently charged electro-magnet, of the wire 10 which forms a continuation of the line or cable and which is stretched between the jaws of the electro-magnet, the arm 12 extending from said wire and acting on wire 15, the arm 16 extending from this wire, the contact points 17 and 18 secured in the head of the slide D, and mechanism, substantially such as herein described, said mechanism being controlled by the position of the arm 16 in relation to the contact points 17 and 18, and serving to impart motion to the slide D. 3rd. The combination, with the permanently charged electro-magnet, of a wire 10 which forms a continuation of the line or cable, and which is stretched between the jaws of the electro-magnet, the arm 12 extending from said wire and acting on wire 15, the arm 16 extending from this wire, the contact points 17 and 18 secured in the head of the slide D, the spring propelled spindle *o* connected to the slide, the ratchet wheel *q* mounted on this spindle, the electro-magnet F G for controlling the motion of the spindle *o* and their connections, substantially as and for the purpose described. 4th. The combination, with the permanently charged electro-magnet, of a wire 10 which forms a continuation of the line or cable, and which is stretched between the jaws of the electro-magnet, the arm 12 extending from said wire, the suspended wire 15, the arm 16 extending from this wire, the contact points 17 and 18 secured in the head of the slide D, the mercury cup *i*, the spring propelled spindle *o* connected to the slide, the local battery B*, the

electro-magnets F, G and their connections, substantially as shown and described. 5th. The combination, with the permanently charged electro-magnet, of two wires 10 and 11 which form a continuation of the line or cable and are stretched between the jaws of the electro-magnet, the arms 12 and 13 extending from the said wires, two slides which carry the pen or recording device, and mechanism, substantially as herein described, said mechanism being actuated by the attraction and the repulsion of the wires 10 and 11, and serving to impart motion to the slides. 6th. The combination, with an electro-magnet and with a cable or line wire, of a wire which forms the end of the cable and passes through the magnetic field of the electro-magnet, substantially as described. 7th. The combination, with an electro-magnet and with a cable, of a wire which forms the end of the cable and passes through the magnetic field of the electro-magnet and of a receiving apparatus controlled by the movements of said wire, substantially as described. 8th. The combination, with an electro-magnet and its armature, of moving contact points, substantially as described. 9th. The combination of the electro-magnet, its armature, and the contact points having a reciprocating movement controlled by an undulating current such as found on submarine cables, substantially as described. 10th. The relays H, I, the helices of which form parts of circuits controlled by electrical impulses of opposite kind sent over the receiving cable or wire, in combination with front-stops which together with the armatures of said electromagnet form parts of the circuit of a local battery, and of the transmitting cable, substantially as described. 11th. The combination, with the slides D, D' which are actuated by the electrical impulses sent over the receiving cable, and each of which carries two contact points, of relays H, I, local batteries B₀, B₁, the frontstops h⁸, i⁸ of the armatures of the relays, the batteries B₂, B₃, the receiving cable and their connections, as shown and described. 12th. An electro-magnet having a pivoted armature extending through the centre of its core, substantially as shown and described.

No. 19,399. Coal Chute. (*Trémie à Charbon.*)

Joseph E. Clifton, Geneseo, Ill., U. S., 21st May, 1884; 5 years.

Claim.—1st. The combination of a self-closing latch-bolt h with the balanced apron d and the coal box or pocket a, said latch-bolt having the chain, rope or rod k attached to it in such a manner that the pull of the chain, rope or rod to swing the balanced apron down will unlatch the balanced apron, substantially as described. 2nd. The combination of the pawl brace t with the door e of the box or pocket a, and the balance arms g of the balanced apron d, said balance arms having the notches m for said pawl brace, substantially as described. 3rd. The buffers p attached to the door e, in combination with the latch bar n, catches o and the balanced apron d, substantially as described. 4th. The partition t having the door t and latches v, in combination with the coal-box or pocket a having door e and balanced apron d and also having catches w₂, substantially as described. 5th. The partition t having the door t with the latches v, in combination with the box or pocket a having the curved stops a₂, catches w₂, levers b₂, stops d₂ and e₂, rod e₂, handle g₂ and spring z, said levers b₂ being connected by the cranked rod f₂, i₂ and j₂, substantially as described. 6th. The supporting posts c₁ set under the boxes or pockets a, and having spliced pieces d for the side frames of the boxes or pockets a attached to said posts, above the point where the weights e₁ of the balance arms g of the balanced apron d drop, when the balanced apron is in a closed position, in combination with the balance arms g attached to the overlapping sides h₁ of the balanced apron d, substantially as described.

No. 19,400. Apparatus for Preventing Accidents and Damage or Wrecking of Cars, from Collisions of Trains. (*Appareil pour Empêcher les Accidents et Pertes, ou le Déraillement des Voitures, par les Collisions des Trains.*)

James B. Stevenson, Montreal, Que., 21st May, 1884; 5 years.

Claim.—1st. The combination of the car-frame a having chamber g and plunger h, with the car frame b having chamber g and plunger h, substantially as and for the purposes set forth. 2nd. The combination of the plunger h having hanger o and projection p, cap k, annulet i and rod m, with the chamber g having hanger n and projection p, the whole being constructed, arranged and operating substantially as and for the purposes described. 3rd. In railway cars, etc., the use of an air chamber, wherein the air is compressed by a plunger to form a cushion to receive the shock of a collision with other bodies, substantially as described.

No. 19,401. Device for Oiling the Crank Pins of Engine Shafts. (*Appareil pour Graisser les Boutons de Manivelles des Bielles de Machines.*)

James Martin, jr., (Assignee of John Perkins) Toronto, Ont., 21st May, 1884; 5 years.

Claim.—1st. A vertical oiler attached to the end of a crank shaft by means of a steel collar or ferrule, on which it is secured by means of glands and screws, in combination with channels in the shaft crank and crank pin which convey the oil from the oiler to the periphery of the crank pin, as shown and described. 2nd. A vertical oiler, E, provided with an oil cup I and tap J, and arms F with socket G, an oil tube h and counterweight K, or its equivalent, as shown and described. 3rd. In a vertical oiler, constructed as described, the combination of a shaft A, with a crank or cranks B, B, and crank pin C, and a steel collar or ferrule H and channels D₁, D₂, D₃, D₄, substantially as shown and described, and for the purposes set forth.

No. 19,402. Car-Coupler. (*Accouplage de Chars.*)

Charles O. Barnes and Lucien Barnes, Sr., Baldwinville, N.Y., U.S., 21st May, 1884; 5 years.

Claim.—1st. In combination with the bumper D and its pins P, the

lateral vibratory hook H adapted to engage with the pin of the approaching car beneath the draw-head thereof, substantially as shown and described. 2nd. In combination with the bumper D, the brace B beneath said draw-bar, the pin P extended through the brace, and the lateral vibratory coupling bar C having two hooks H, H, adapted to simultaneously engage respectively the two pins of the cars to be coupled, substantially in the manner set forth and shown. 3rd. In combination with the bumper D, the brace B underneath said bumper, the coupling-pin P extended through the brace, the lateral vibratory coupling-arm C arranged between the bumper and brace, and provided with the brace-hook H and coupling-hook H₁, the flexible stirrup a supporting and actuating the coupling arm C, the lever L extended across the car, and having the arm l connected with the aforesaid coupling-arm, substantially as described and shown. 4th. In combination with the lateral vibratory coupling-arm C and lever L connected therewith, the supplemental lever M connected to the top of the car, and with the lever L, substantially as and for the purpose shown and set forth.

No. 19,403. Machine for Applying Colouring Matter, &c., to Fibrous Materials. (*Machine pour Appliquer la Matière Colorante, &c., aux Matières Fibreuses.*)

The United States Dyeing Company, (Assignee of Henry W. Vaughan,) Providence, R. I., U. S., 21st May, 1884; 5 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of a holder or receptacle for a compressed cake of powder to be applied to fibrous material for dyeing, colouring, or similar purposes, suitable means, as described, for feeding forward the said compressed cake, and suitable means, as described, for disintegrating the end of such cake as it is fed forward. 2nd. The combination, substantially as hereinbefore set forth, of a holder or receptacle for a compressed cake of powder, a case for containing a brush or disintegrator, having a throat in alignment with said holder or receptacle, a disintegrator mounted within said case, and an air trunk for receiving the powder removed from such cake by the disintegrator. 3rd. The combination, substantially as hereinbefore set forth, of an air-trunk for conveying powder to be incorporated with fibrous material for dyeing or similar purposes, a disintegrator mounted within a case, as described, and a flipper, or equivalent means for discharging powder from the disintegrator into the air-trunk. 4th. The combination, substantially as hereinbefore set forth, of a holder or receptacle for a compressed cake of powder, a case having a throat, as described, to be expanded and a brush mounted in said case, and adapted, as described, to be expanded radially, for the purposes set forth. 5th. The method, substantially as hereinbefore described, of applying pulverulent material for dyeing or similar purposes to fibrous matter, which consists in, first, forming or compressing the pulverulent material into a cake, secondly, in disintegrating said cake by suitable means, as described, and thirdly, introducing the powder so obtained into an air current to be incorporated with the fibrous matter, as set forth.

No. 19,404. Combination Lock. (*Serrure à Combinaison.*)

William M. Brooke, Brooklyn, N. Y., U. S., 21st May, 1884; 5 years.

Claim.—1st. The lock, herein described, consisting of the sheet metal case provided with a circular chamber C, intertwined notched portion c on the upper and lower edges of said chamber, securing flanges d bent from the opening b in the case in opposite directions, and a series of horizontally arranged permutation disks within said chamber, in combination with a suitable hasp, substantially as set forth. 2nd. A lock case formed from a sheet metal blank E, said blank being provided with the notched central portion c and bent to form the circular chamber C of which the notched portion c forms the top and bottom opening b, and flanges d bent in opposite directions from said opening, substantially as set forth.

No. 19,405. Heating Stove. (*Poêle de Chauffage.*)

William A. Winfree, Elizabethton, Tenn., U. S., 21st May, 1884; 5 years.

Claim.—1st. In a heating stove, the combination, with the outer cylinder C provided with the escape flue h and cold air entrance e, of the inner concentric cylinder B having the escape opening g diametrically opposite the flue h, and the flange e extending from above the openings h, g downward on each side and below the opening c, dividing the annular space between the cylinders into a lower smoke chamber and an upper hot air chamber, the latter of which is provided with escape openings, substantially as herein shown and described. 2nd. The combination, in a heating stove, of an inner and an outer cylinder, and the inclined flange or partition dividing the space between the two cylinders into a smoke chamber and a hot air chamber, the latter being provided with openings for the escape of the heated air, substantially as described. 3rd. In a heating stove, in combination with the combustion chamber B provided with the opening g, and the flange e dividing the space between the two cylinders into chambers f, f, substantially as herein shown and described. 4th. In a heating stove, the combination, with the outer cylinder C and the inner cylinder B having an annular flange l, of the enlarged portion d having the flange d₁ and provided with openings i, substantially as shown and described. 5th. In a heating stove, the combination, with the outer cylinder C and the inner cylinder B having the curved flange e and opening g, of the pipe D extending upward through the annular space f between the cylinders, and the said pipe D being provided with a damper n, substantially as shown and described. 6th. In a heating stove, the combination, with outer cylinder C having a slot e, of the triangular extension F provided with openings G adapted to be closed with mica, substantially as shown and described.

No. 19,406. Baking and Roasting Apparatus. (*Tourtière.*)

Worthington Smith and Walter E. Guggisberg, Hamilton, Ont., 21st May, 1884; 5 years.

Claim.—1st. In a roaster and baker, the combination of the pan A B and the raised plate D, as specified. 2nd. The combination of the pan A, elevated pan F and raised plate D, as specified. 3rd. In a roaster and baker, the combination, of the pan A, opening I and adjustable slide J, as and for the purpose specified.

No. 19,407. Tubular Lantern.

(*Lanterne Tubulaire.*)

Jacob Weakley, Hamilton, Ont., 21st May, 1884; 5 years.

Claim.—1st. In a tubular lantern, the air chamber D being constructed oval with bevelled sides to admit the tubes entering at each end without bending or elbows, substantially as specified. 2nd. In a tubular lantern, the tubes C, C constructed tapering from the elbows upward to the air chamber D and horizontally to the collar air chamber, substantially as and for the purpose specified. 3rd. In a tubular lantern, the tubes C constructed in the form of a half-round, as shown at Figs. 2 and 3, substantially as specified. 4th. In a tubular lantern, the globe-holder E, formed and constructed as shown, for the purpose specified.

No. 19,408. Ventilating Flue Cap.

(*Bascule à Ventilation de Cheminée.*)

Henry L. Day, Minneapolis, Minn., U. S., 23rd May, 1884; 5 years.

Claim.—1st. The combination of the flue A, outwardly flaring shield C, dome D and convex bottom E, substantially as and for the purposes set forth. 2nd. The combination of the flue A, deflecting ring B, flaring shield C, dome D and convex bottom E, substantially as described. 3rd. The combination of the flue A, shield C, dome D having the lower upturned edge b and convex bottom E, substantially as set forth. 4th. The combination of the flue A, shield C, dome D, standards G and ring F, substantially as described. 5th. The combination of the flue A, deflecting ring B, outwardly-flaring shields C, dome D, having the upturned edge b and the bottom E, substantially as and for the purpose specified.

No. 19,409. Spinning and Twisting Machine.

(*Machine à Filer et Retordre.*)

Charles A. Coggeshall, Providence, R. I., U. S., 23rd May, 1884; 5 years.

Claim.—1st. The combination, with a driving cylinder and a series of driving bands extending from the cylinder to the spindles, the said bands being so arranged that each band shall drive two or more spindles, and the latter being each driven by two or more bands, substantially as and for the purposes set forth. 2nd. The combination, with a driving cylinder, and a series of spindles carrying grooved wheels, of a series of bands extending from the cylinder to the spindles, said bands being laced from one spindle to another and surrounding or partially surrounding said spindles, each band being arranged to drive two or more spindles and each spindle being driven by two or more bands, substantially as and for the purposes set forth.

No. 19,410. Valve for Steam Traps.

(*Valve pour Trappes de Vapeur.*)

Robert Newton, Providence, R. I., U. S., 23rd May, 1884; 5 years.

Claim.—1st. In a valve for steam traps, the combination, with the tubular inlet stem E, provided with the ports e_1 and e_2 , of the elbow F, provided with a port and constructed to receive the pipe G, by which it is connected with the sphere H, as described. 2nd. The combination, with the stem E, provided with the ports e_1 and e_2 , of the elbow F, supported in trunnions and held against the valve seat by means of a spring or springs, constructed to hold the surfaces in contact as described. 3rd. The combination, with the tubular stem E, the elbow F, tube G and sphere H, of the trunnions f, f, the bearings f_1 , f_1 , rods f_2 , f_2 and spring or springs f_3 , constructed to form a valve to regulate the flow of water automatically, as described.

No. 19,411. Process for Treating Cotton Seed.

(*Procédé de Traitement de la Graine du Coton.*)

The United States Cotton Seed Cleaning Company, (Assignee of James F. O'Shaughnessy,) New York, N. Y., U. S., 23rd May, 1884; 5 years.

Claim.—The described method of treating cotton seed, consisting in taking the hull separated from the kernel and grinding it, in removing the fibre therefrom, and then mixing the ground hull with the crushed and pressed kernel, all substantially as described.

No. 19,412. Process for Treating Cotton Seed.

(*Procédé de Traitement de la Graine du Coton.*)

The United States Cotton Seed Cleaning Company, (Assignee of James F. O'Shaughnessy,) New York, N. Y., U. S., 23rd May, 1884; 5 years.

Claim.—The described process of removing the fibre of the hulls of cotton seed by first heating said hulls after the kernel has been removed from them, then crushing or grinding the hulls, and finally separating the fibre from the pulverized hulls, substantially as described.

No. 19,413. Oil Cup Feeder for Lubricators.

(*Alimentateur de Goulet à Huile pour Graisseurs.*)

James E. Worswick and Arthur T. Hannon, Montgomery, Ala., U. S., 23rd May, 1884; 5 years.

Claim.—1st. The combination of the tube, the pin-loosely arranged therein, and the removable collar secured to the upper end of the tube, and a removable perforated disk contained within the collar to form a bearing for the upper end of the pin, substantially as shown

and described. 2nd. As a removable bearing for the feeding pin of an oil cup, a disk having a perforation adapted to form a bearing for the pin, and being made of a size adapted to be fitted in a holding collar, substantially as shown and described.

No. 19,414. Metal Wearing Surface for Rubber Overshoes and Machine for Securing the Same.

(*Surface Métallique d'Usure pour Claques en Caoutchouc et Machine pour l'assujétir.*)

Frederick Richardson, Providence, R. I., U. S., 23rd May, 1884; 15 years.

Claim.—1st. A rubber over-shoe provided with a heel-plate, having pointed pins formed in one piece, with the plate constructed to enter the heel portion of the shoe simultaneously and clinch, in the manner and for the purpose set forth. 2nd. A die provided with inclined planes on part of its face, and a smooth surface constructed to bend the pins of a heel-plate and clinch the same, as described. 3rd. In a machine for securing heel-plates to rubber over-shoes, a reciprocating plunger constructed to force the pins of the heel-plate into the shoe, and a die constructed to bend and clinch the same, as described. 4th. In a machine for securing heel-plates to rubber over-shoes, the swinging standard C, the adjustable die C₃, the reciprocating plunger F and means for supporting and guiding the heel-plate, as described. 5th. A machine for securing heel-plates to rubber over-shoes, provided with a reciprocating plunger, and a die provided with inclined surfaces constructed to bend the pins or nails, and a clinching surface arranged to be rotated so as to present either of the two surfaces to the pins of the heel-plate, as described. 6th. In a machine for securing heel-plates to rubber over-shoes, a reciprocating plunger, a revolving die and means by which the die is connected with the plunger, and rotated automatically to bend and clinch the pins, as described. 7th. A machine for securing heel-plates to rubber over-shoes, consisting of a reciprocating plunger, an anvil provided with a clinching die, a support, substantially as described, for the forward end of the shoe, and a holder constructed to hold the rear portion against the die, as described. 8th. In a machine for securing heel-plates to rubber over-shoes, a reciprocating plunger, an anvil provided with a clinching die, and a holder to hold the shoe on the die, constructed to move the shoe when secured under the plunger and withdraw the same, as described. 9th. In a machine for securing heel-plates to rubber over-shoes, the combination, with the plunger F, the anvil C and die C₃, of the swinging arm C₁, the handle C₂ and the sliding holder E, as described.

No. 19,415. Machine for Grinding Mower and Reaper Knives.

(*Machine pour Rémouler les Lames des Moissonneuses.*)

James N. Parker, Elkhart, Ind., U. S., 27th May, 1884; 5 years.

Claim.—1st. In a machine for grinding harvester-knives, the combination of the standard, the swinging frame and the spring having one end held against the standard, and its opposite end bearing against the swinging frame, and the retaining screw turning in a threaded socket, whereby the pressure on the frame may be varied, substantially as and for the purposes set forth. 2nd. The table adapted to support the harvester-knife and provided with suitable bearings k_1 , and adjustable clamps k_2 , in combination with the base and the rails secured therein and adjustable laterally, substantially as and for the purposes set forth. 3rd. In a machine for grinding harvester-knives, the combination, with a table adapted to support the knife, of two pivoted leaves or supporting-plates having their outer or movable ends adjustable in a common centre, substantially as set forth. 4th. The combination, substantially as heretofore set forth, of the base, the rails mounted thereon, the stops mounted on said rails and slotted longitudinally, the retaining screws having their shanks passed through and their heads bearing on opposite sides of said slots, whereby the stops may be adjusted, the abrading wheel and the table moving on said rails, as and for the purposes specified. 5th. In a harvester-knife grinder, the combination, substantially as heretofore set forth, of the standard, the swinging frame pivoted thereto and carrying the abrading wheel, the post A₂ arranged in rear of the standard and the retaining screw adapted to be driven through the swinging frame into the head of the post when the swinging frame is thrown over therein, substantially as and for the purposes specified. 6th. The combination, in a sickle-grinding machine, of the standard having its top bar b_3 bored horizontally to provide a bearing for the spindle, the swinging frame having the grinding-wheel F and pinion F₂ supported in its outer end, and having its opposite end bifurcated and provided with the bearings c, c embracing the standard bearing-bar b_3 , the spindle passed through said bearings b_3 , c, c, the operating wheel journalled on said spindle in line and meshed with pinion F₂, and the clamping-screw b_4 turning through a tapped opening in the bearing-bar b_3 and bearing against the spindle, substantially as set forth. 7th. In a sickle-grinding machine, the sickle carrying table provided with a ledge or shoulder l_2 and a central clamp as N, and having the support or supports L arranged to one side of the clamp, and adjusted to and from the ledge or shoulder l_2 , substantially as and for the purposes specified.

No. 19,416. Ironing Table.

(*Table à Repasser.*)

Schuyler S. Case, Buffalo, N. Y., U. S., 27th May, 1884; 5 years.

Claim.—In an ironing table, the frame or stand composed of the standards A, A, cross-bars C, C secured to the standards A, A, vertical bars D, D₁ pivoted to the cross-bars C, C, by pivots d , d_1 , and connected by a hinged brace E, provided with a catch g , substantially as and for the purpose set forth.

No. 19,417. Hane Fastener.

(*Mancelle de Harnais.*)

James R. Finley and Samuel Milroy, Delphi, Ind., U. S., 27th May, 1884; 5 years.

Claim.—The combination hame and trace fastener, consisting of the vertically-split hame ring and concave plate C, in combination with a trace clip formed of a transversely slotted portion having a pivotal extremity, and a contracted portion D adapted to pass the slit between the ends of said split ring, substantially in the manner and for the purposes described.

No. 19,418. Attachment for Sap Bucket Cover. (*Ajustage de Couverture de Seau de Surrerie.*)

Arlington I. Farnham and Charles E. Ingalls, Sutton, Que., 27th May, 1884; 5 years.

Claim.—The combination of the wire attachment D, with a sap-bucket and sap-bucket cover, substantially as and for the purpose hereinbefore set forth.

No. 19,419. Screw-Driver. (*Tourne-Vis.*)

Daniel Nei, St. Louis, Mich., U.S., 27th May, 1884; 5 years.

Claim.—The combination, with the screw-driver A, of the longitudinally apertured block B, having a jaw C and adapted to grip a screw-head, the sliding ring or clamp D and the detaining catch E working in notch a, all as and for the purpose specified.

No. 19,420. Grain-Binding Harvester. (*Mâssonneuse-Licuse.*)

William W. Marsh and Maurice E. Blood, Sycamore, Ill., U. S., 27th May, 1884; 15 years.

Claim.—1st. In combination with a carrier platform, two rollers, one located on each side of the passage for the grain, that act upon the grain simultaneously to draw the grain from the platform and force it toward a binder, the binder being located at the delivery end of the carrier platform, substantially as specified. 2nd. In combination with a carrier platform, two belts or canvases, one located and operating on each side of the passage for the grain, and both acting on the grain simultaneously to draw the grain from the platform and force it toward a binder, the binder being located at the delivery end of the platform, substantially as specified. 3rd. In combination with a carrier platform and a binder located at the delivery end of the platform, two rollers, one located on each side of the passage way for the grain that act upon the grain simultaneously to draw the grain from the platform and force it toward the binder, and means for changing the space between the rollers for the grain to pass through by the pressure of the grain against the rollers, substantially as shown and for the purposes specified. 4th. In combination with a carrier platform, and a binder located adjacent to the inner end of the platform, two rollers, D and D₁, located one over the other at the delivery end of the carrier platform, and having a belt or canvas D₂ around them, both the rollers and canvas adapted to rise and fall, substantially as shown and for the purposes specified. 5th. In combination with a carrier platform, the rollers D and D₁ having a pivoted support at one end, and a support or bearing at the opposite end that allows them to have a rising and falling movement, substantially as shown and for the purposes specified. 6th. In combination with a carrier platform, a vertically running belt or canvas D₁ located over the inner end of the carrier platform and adapted to have a rising and falling movement to allow it to float over the grain, and a binder located adjacent to the delivery end of the carrier platform, substantially as shown and for the purposes specified. 7th. In combination with a carrier platform, the rollers C₁, D and D₁ arranged parallel with each other, and in a vertical line with the delivery end of the carrier platform, substantially as shown and for the purposes specified. 8th. In combination with a carrier platform, a receptacle at the delivery end of the carrier platform for storing the grain, the receptacle having a rising or vertical well on the side opposite the carrier platform, substantially as shown and for the purposes specified. 9th. In combination with a carrier platform and a vertically-running belt or canvas over the delivery end of the carrier platform, a receptacle for the storage of the grain located at the delivery end of the carrier platform, the receptacle having a rising and vertical wall in the side opposite the vertically-running canvas, substantially as shown and for the purposes specified. 10th. A receptacle having rising and vertical walls for storage of the grain, the grain to enter the receptacle from the bottom or one lower corner, and flow out over one of the vertical walls, substantially as shown and for the purposes specified. 11th. A receptacle having rising and vertical walls for the storage of the grain, the grain to enter the receptacle under one of the walls and pass out over the other wall, in combination with a carrier platform located on one side of the receptacle, and an automatic binder on the other side, substantially as specified. 12th. Two rollers located at the delivery end of the carrier platform, one roller to come in each side of the passage for the grain and both to work simultaneously on the grain to draw the grain from the platform and force it toward a binder, in combination with a receptacle for storing the grain, one side of which receptacle forms a resistance to hold the grain in check, substantially as shown and for the purposes specified. 13th. In combination with a conveyor belt or apron C, and a vertically running belt or canvas D₁ arranged to work on opposite sides of the grain and simultaneously with each other at the delivery end of the platform, a wall or resistance F for the grain to come against as it leaves these belts, substantially as shown and for the purposes specified. 14th. A carrier platform C, and a roller D having a belt or canvas D₁ located over the delivery end of the carrier platform, the carrier platform and roller D with the belt or canvas D₁ to work simultaneously on the grain to force it toward a binder located at the delivery end of the carrier platform, in combination with means for resisting and holding the grain in check against the force of the carrier platform, and roller D and belt D₁, substantially as shown and for the purposes specified. 15th. In combination with a carrier platform, two rollers C₁ and D at the delivery end of the carrier platform, the rollers adapted to force the grain between them toward a binder located adjacent to the delivery end of the carrier platform, and means between the binder and rollers for resisting the grain and holding it in check against the power of the rollers, substantially as

shown and for the purposes specified. 16th. In combination with a carrier platform and a binder located adjacent to the delivery end of the carrier platform, a rise or wall F for supporting the forward part of the binding table, substantially as specified. 17th. In combination with a carrier platform and picker-teeth to take the grain away from the carrier platform, a binder located at the delivery end of the platform, and a rise or wall F located between the binder and delivery end of the carrier platform for resisting the grain, substantially as shown and for the purposes specified. 18th. The combination of the conveyor or apron C, rollers C₁ and D, belt or canvas D₁, and picker-teeth E₁, and rise or wall F, all arranged and operating substantially as shown and for the purposes specified. 19th. A vibrating inside-board located to operate upon the butts of the grain near the inside-divider, and means for operating such butter from the picker-shaft E, substantially as specified. 20th. The rollers C₁, D and D₁ located substantially back of the inside-divider and in a vertical line with each other, in combination with the conveyor or apron C and belt or canvas D₁ for taking the grain from the receiving platform and keeping the inside-divider clear, substantially as specified. 21st. In combination with a carrier platform, a butting board G adapted to vibrate horizontally against the butts of the grain at the delivery end of the carrier platform, substantially as shown and for the purposes specified. 22nd. In combination with a carrier platform, a series of picker-wheels located and operating adjacent to the delivery end of the carrier platform, the wheels having teeth pivoted to them for taking the grain from the carrier platform, substantially as described. 23rd. The picker-wheels E₁ having teeth E₁ pivoted thereto for taking the grain from the delivery end of the carrier platform, in combination with cams C₁ for projecting the picker-teeth, substantially as specified. 24th. The picker-teeth E₁ for taking the grain from the delivery end of a carrier platform, in combination with a guard and grain support E₂ for protecting the pickers and supporting the grain, substantially as specified. 25th. In combination with a carriage platform and picker-teeth for taking the grain away from the delivery end of the carrier platform, a guard or support A₃ for the picker-teeth, substantially as specified. 26th. In combination with a carrier platform and picker-teeth for taking the grain from the delivery end of the carrier platform, a step or rest A, for the grain to catch and hold the grain until the picker-teeth have secured the grain, substantially as specified. 27th. In a grain-binder, the combination of two disks or wheels arranged to rotate parallel with each other, and each provided with a series of pivoted packer teeth, two cams L₁ arranged respectively at one side of each disk or wheel, a bearing L₃ connecting the two cams together and provided with an arm L₂, and a connection between said arm and the binder-arm, whereby the latter is caused to simultaneously operate the two disks, and to actuate the teeth of both wheels, substantially as specified. 28th. In a grain-binder, the combination of a tripping-finger N, shaft N₁, latch or stop-finger N₁ located on the shaft N₁, and means for holding the latch or stop-finger N₁ from engagement with the dog M by the crank J₁, substantially as specified. 29th. A compressing-finger for compressing the grain, in combination with a knee-joint for holding the compressor-finger against the grain while binding, and afterward yielding to allow the compressor-finger to open away from the bundle for the discharge of the bundle, substantially as specified. 30th. A compressor-finger O having a horizontally and vertically swinging movement, in combination with a device for holding it from the vertically winging movement while the binding operation is being performed, but allowing it to swing vertically for the discharge of the bundle, substantially as specified. 31st. A compressor-finger O having a horizontally and vertically swinging movement, in combination with a locking and unlocking device for locking and holding the compressor to prevent it from swinging vertically while the binding operation is being performed, but unlocking and allowing it to swing vertically for the discharge of the bundle, substantially as specified. 32nd. A vertically swinging compressor finger O, in combination with a knee-joint P P₁ for locking and holding the compressor while compressing, but unlocking to allow the compressor to open for the discharge of the bundle, and means for locking and unlocking the knee-joint, substantially as described. 33rd. A compressor-finger O, in combination with a crank O₁, knee-joint P P₁, finger or arm P₁, and a pin or boss k for locking the compressor, substantially as specified. 34th. A compressor-finger O, in combination with an arm or crank O₁, knee-joint P P₁, finger P₂, and pitman or arm P₃ for unlocking the compressor, substantially as specified. 35th. A compressor-finger O, in combination with an arm or crank O₁, knee-joint P P₁, and suitable stops to limit the movement of the knee-joint in either direction, substantially as specified. 36th. A compressor-finger O, in combination with an arm or crank O₁, knee-joint P P₁, and a stop p₃ located on the arm P to stop the knee-joint, when the knee-joint is in the proper position for holding the compressor locked, substantially as specified. 37th. A compressor-finger O, in combination with an arm or crank O₁, knee-joint P P₁, fingers P₁, P₂, and stops p₁, p₂, all operating substantially as and for the purposes specified. 38th. A compressor-finger O adapted to move steadily toward the needle of the binder-arm, in combination with a yielding connection between the binder-arm and the compressor-finger, whereby the action of the binder-arm causes the compressor to move toward, and away from, the binder-arm during the binding operation, substantially as shown and for the purposes specified. 39th. A compressor-finger O, connected to a box or coupling O₁, spring O₃ and binder arm J, all arranged substantially as shown and for the purpose specified. 40th. The compressor-finger O, connecting rod O₁, connecting at one end with the binder-arm or other moving part of the binder, and at the other end with the compressor, in combination with a box or coupling rod and a hole through it one way for the passage of the connecting rod and a cross-wise hole for the compressor-shaft, substantially as specified. 41st. The guard L bent and curved to guard the packer-wheels and afterward to form the receptacle for the grain in the binder and to guide the grain away from the binder, substantially as specified. 42nd. The folding discharge-finger B, and means for folding by the reel and cam or guide R, substantially as specified. 43rd. A reel adapted to be adjusted to come in different positions to operate upon the reel and a connection between the reel and binder, whereby the reel and binder are adjusted simultaneously by one adjusting device, substantially as specified. 44th. A reel and a binder, both adapted to be adjusted to suit different conditions and lengths of grain, in combination with a lever I and connections for adjusting both simultaneously,

substantially as specified. 45th. A reel and a binder, both adapted to be adjusted to suit different conditions and lengths of grain, in combination with a lever I for adjusting both simultaneously, and a lever I' for independently adjusting the reel, substantially as specified. 46th. In combination with a harvester frame, a front-sill and finger-beam made at its inner end to incline upward and deflect forward, substantially as shown and for the purposes specified. 47th. The chain V5 located at the rear of the machine and running over the passage-way for the bound bundle, said chains adapted to drive the binder canvases or belts D1 and C, and the pickers, all arranged and operating substantially as specified.

No. 19,421. Clock. (*Horloge*.)

Henry L. Narramore, Sharon, Mass., U.S., 27th May, 1884; 5 years.

Claim.—1st A clock having two or more bells of different tones, and a striking hammer adapted to be moved into position to strike either of the bells, in combination with operative mechanism for the hammer, whereby two or more of the hours may be respectively struck on different bells, substantially as set forth. 2nd. A clock, having two or more bells of different tones, and a wheel provided with one or more cams or lifts, in combination with a hammer adapted to be moved into position to strike either of the bells, a lever or other connecting device acted upon by said cams or lifts to move the hammer from bell to bell, and operative mechanism for the wheel and hammer, substantially as specified. 3rd. In a clock, substantially as described, the counting-wheel B provided with a cam or lift adapted to operate on a lever or other device connecting said wheel with the hammer, and thereby move the hammer from one bell to another as the wheel revolves, substantially as set forth. 4th. In a clock, substantially as described, the wheel B provided with two or more cams or lifts varying in length and height, and adapted to operate on a lever or other device connecting said wheel with the hammer, and thereby move the hammer from bell to bell and regulate its strokes in accordance with the hour being struck, substantially as specified. 5th. In a clock, substantially as described, the wheel B provided with a series of cams or lifts arranged in groups, substantially as described, and for the purpose set forth. 6th. In a clock, substantially as described, a rocker-shaft provided with a striking wire or arm and with a hammer-wire carrying a hammer, said hammer wire being adapted to be moved or swung longitudinally of the rocker-shaft to bring the hammer into proper position to strike different bells, substantially as specified. 7th. In a clock, substantially as described, the rocker-shaft J provided with the wire or arm H, slot z, stud f, hammer wire E and springs L, I, combined and arranged to operate, substantially as set forth. 8th. In a clock, substantially as described, the rocker-shaft J provided with the striking wire H, hammer-wire E and springs L, I, the wheel B provided with the lifts 2, 3, 4, the wire C, pivoted lever D and bells Q, R, S, T, combined and arranged to operate, substantially as specified. 9th. In a clock, substantially as described, the lever D, in combination with the wheel B for moving or swinging the wire E longitudinally of the rocker-shaft and holding it in position while the hammer strikes the hour on the bell, substantially as set forth. 10th. In a clock, substantially as described, the combination of the following instrumentalities, to wit: a rocker-shaft provided with a striking wire, a hammer-wire adapted to swing longitudinally of said shaft and also partially rotate with it, a wheel provided with one or more cams or lifts, a lever or device for operatively connecting the wheel with the hammer-wire, two or more bells of different tones, and mechanism for operating the wheel and rocker-shaft and causing the hammer to strike the different hours respectively upon different bells, substantially as specified.

No. 19,422. Fence. (*Clôture*.)

William C. Scarr, Maryborough, Ont., 27th May, 1884; 5 years.

Claim.—1st. In a fence having the wire lines D, the sills B placed, as shown, longitudinally in line with the fence and having the posts A notched, morticed or gained into them, and supported by the braces C which are framed or notched into both the post and sill, substantially as described. 2nd. In a wire fence, the stands E framed into the bases F, which are placed upon the surface of the ground and between the main posts. 3rd. In a wire fence, the combination of the main posts A, sills B and braces C, with the stands E and bases F, substantially as shown and described and for the purpose set forth.

No. 19,423. Bit for Boring Wood.

(*Mèche pour Percer le Bois*.)

Simon P. Graham, London, Ont., 27th May, 1884; 5 years.

Claim.—A centre bit B provided with a flange or flanges F, F projecting outwards from either the back or front of the cutting edge of said groove, and extending along said groove upwards from the point, for the purpose of renewing the cutting points or nickers N, N by simply sharpening the bit as the bit wears up, or when said cutting points or nickers N, N become worn or damaged, substantially as described.

No. 19,424. Spring Holder for Napkins, Handkerchiefs, &c. (*Crochet à Ressort pour Serviettes, Mouchoirs de Poche, &c.*)

John C. Tutt, Kansas, Mo., U.S., 27th May, 1884; 5 years.

Claim.—1st. The small spiral spring holder U provided at its extremities with intumed and pointed hooks, as and for the purpose described. 2nd. The spring holder for napkins, handkerchiefs, &c., consisting of the combination of the spiral spring A, having attached to the opposite ends rigid cross-bars b, b and pointed hooks c, c, as and for the purpose described.

No. 19,425. Car-Coupling. (*Accouplage de Chars*.)

Baldwin W. Harry, John C. Kieffer and William Mullally, Milton Centre, Ohio, U.S., 27th May, 1884; 5 years.

Claim.—A car-coupling, buffer-block, and pin-holder, B, having the

studs C, C, E projecting from the sides and rear end thereof, whereby it may be used as described.

No. 19,426. Electrophone to be used for Receiving Audible Sounds from a Transmitting Instrument. (*Electrophone pour recevoir les Sons*.)

James A. Kingsbry, Chicago, Ill., U.S., 28th May, 1884; 5 years.

Claim.—1st. I claim as new in my electrophone for receiving audible sounds, the coil F formed with a hollow centre a and placed in a non-conducting case A and connected with a battery and transmitting wires, in combination with the diaphragm D which is actuated by the force of electricity on the coil, substantially as specified. 2nd. A coil formed with a hollow centre, and in part of copper wire, and in part of iron wire, and in sections, and connected with switches I, J, substantially as specified.

No. 19,427. Bell. (*Cloche*.)

Marcus M. Bowers, Baltimore, Ind., U.S., 28th May, 1884; 5 years.

Claim.—1st. A bell cylinder or shell having its sides constructed to form the flare by a series of interrupted straight lines or surfaces arranged to diverge in a downward direction, substantially as specified. 2nd. A bell cylinder or shell, having its head or cap made concave on its top, substantially as and for the purpose herein set forth. 3rd. As an improved article of manufacture, a bell, cylinder or shell having its body portion of truncated form, its head or cap of diminishing tapering construction and concave on its top, and its hammer swell arranged within it, essentially as shown and described.

No. 19,428. Roller Skate. (*Patin à Roulettes*.)

Alva L. Kitzelman, Ridgeville, Ind., U.S., 28th May, 1884; 5 years.

Claim.—1st. In a roller skate, the combination of the metallic plate B having side flanges b, b, the rubber cushions arranged between the flanges, and the rocking seat C journaled below the cushions and having a central vertical tongue E, projecting upwardly between the cushions, as and for the purpose set forth. 2nd. In a roller skate, the combination of the plate B, having end supporting bearing c and opposite adjustable bearing d, the rubber cushions arranged between side flanges of the plate, the rocking seat C having a central vertical tongue F, and journals e, e, as and for the purpose set forth. 3rd. In a roller skate, the combination of the metallic plate B, having end supporting bearing c, side flanges b, b, and dove-tailed groove therein, the rubber cushions arranged between the side flanges, right-angled, dove-tailed and adjustable bearing support D, and the rocking seat C, having journals e, e, a vertical tongue F, projecting inward between the cushions and the floor wheels connected to said seat, the several parts constructed and arranged relatively to each other, in the manner substantially as shown and described.

No. 19,429. Grate Blower. (*Râteau de Cheminée*.)

Charles A. Preston, Norwalk, Ohio, U.S., 28th May, 1884; 5 years.

Claim.—1st. The combination, with the grate and fire-place frame, of the guide-ways formed behind the jambs, the blower arranged to slide in said guide-ways, and the spring bars arranged to press against the rear surface of the blower, substantially as set forth. 2nd. The combination, with the frame plate E, and the spring bars F, arranged behind said plates and secured thereto at their ends, of the blower having its ends inserted between said plates and spring-bars, substantially as described. 3rd. The combination, with the frame E, spring-bars and grate, of the blower or screen having at its lower edge an outwardly-projecting flange, substantially as and for the purpose set forth. 4th. The combination, with the fire-place frame, the grate, and the masonry having a recess or pocket formed therein behind the upper portion of said fire-place frame, of the plates E and the spring-bars F, arranged behind the jambs and extending upward into said pocket or recess, and the blower having its ends inserted between said plates and springs, substantially as described.

No. 19,430. Telegraphic System.

(*Système Télégraphique*.)

Charles G. Burke, Richmond Hill, N. Y., U. S., 28th May, 1884; 5 years.

Claim.—1st. The described method or system of telegraphy, which consists in distinguishing different groups of characters by an electric current, impulse or combination of electric currents or impulses, and the individual letters contained in such groups by distinctive intervals of time occurring after the group signal has been given and before a succeeding signal is commenced. 2nd. The described method or system of telegraphy, indicating different characters of a series, which consists in dividing such series into arbitrary groups, designating each of the several groups by means of electric currents possessing particular characteristics, and indicating the individual letters in the several groups by different intervals of time succeeding the group-designating currents. 3rd. The described method or system of telegraphy, which consists in indicating different groups of letters or characters by electric currents of distinguishing characteristics, and indicating the individual characters by different numbers of units of time elapsing after such groups are indicated, substantially as described. 4th. The described method or system of telegraphy, which consists in designating each particular group of letters by the transmission of electric currents and each individual letter in such group by a cessation of such currents. 5th. The described method of indicating the individual character of a series, which consists in indicating the groups, into which said series is divided by electric currents, and assigning to each character in each group a distinctive period of time by the occurrence of which, after the group has been indicated, that character is designated. 6th. The described method

of indicating the different characters in a series, which consists in dividing such series into groups, designating the different groups in an arbitrary manner, and indicating the individual characters in such groups by the measurements of a metronome. 7th. The hereinbefore described method of transmitting telegraphic messages, which consists in indicating different groups of character-recording keys, corresponding to the characters which constitute an embodiment of such message, by arbitrary electric signals, and indicating the particular recording key in a designated group by the interval occurring after such group has been designated before another signal is commenced. 8th. The hereinbefore described method of indicating the different keys of a character-recording key-board which correspond to the characters embodying a telegraphic message which consists in indicating the side of such board upon which such keys are located by primal signals, the particularly lines of keys containing such keys, by the same primal signal or a combination therewith of other signal or signals, and the particular key in such by the units of time measuring the intervals between the signal or combination of signals. 9th. The hereinbefore described method of indicating the different characters contained in a series, which consists in designating different groups of said series by the movements of a reflected ray of light, and indicating the different characters contained in such groups by the period during which the direction of such ray of light is unchanged. 10th. A device for transmitting electric currents of different characteristics, which consists of a revolving circuit-closing arm, and concentric annular series of keys arranged in the same radial lines, which series respectively correspond to the currents of the different characteristics while each key in each series is adapted to transmit a current having the characteristic of its series. 11th. The combination, substantially as hereinbefore set forth, of two or more series of keys; a circuit-closing arm adapted to pass simultaneously across the path of one key in each series and to occupy a predetermined period of time in passing from each of said individual key to the next succeeding one, and sources of electricity which are adapted to supply currents of the required characteristics and are respectively applied to said series of keys. 12th. The combination, as hereinbefore set forth, of two series of keys, a positive and negative source of electricity respectively applied to said series, a circuit-closing arm moving across the paths of the successive keys at equal intervals, a receiving instrument responding in a different manner to the positive and negative currents transmitted by said keys, and a metronome or other time-measuring instrument for measuring the periods occupied by said circuit-closing arm in passing between the successive keys.

No. 19,431. Plough. (*Charrue.*)

James T. Millen, Thomasville, Ga., U. S., 23th May, 1884; 5 years.

Claim.—1st. The combination of the plow-standard C, having the heel D, with the bent braces E, E, the beam B and the handles A, the said braces being bolted to the plow-heel, the beam, and to the handles, in the manner shown and described. 2nd. The combination, with the beam and the handles, of the plow-standard having its heel D, terminating in an upward extension C, and the bent braces E, E, bolted to the opposite sides of the beam, and to the handles, as shown and described.

No. 19,432. Skirt Protector.

(*Protecteur de Jupou.*)

Mary L. Cummings, Somerville, Mass., U. S., 23th May, 1884; 5 years.

Claim.—1st. In a skirt protector, an inner and an outer skirt connected at the bottom by a waterproof sack or supporter, said skirts being both adapted to be secured around the waist of the wearer, substantially as set forth. 2nd. In a skirt-protector, an inner and an outer skirt connected at the bottom by a waterproof sack or supporter, said skirts being both adapted to be secured around the waist of the wearer, and both extensible, substantially as specified. 3rd. The improved skirt protector herein described, the same consisting of the skirt A, provided with the flap E, and buttons *d, t*, the skirt B, provided with the flap D, button *m*, and string G and sack C, constructed, combined and arranged to operate, substantially as set forth.

No. 19,433. Knitting Machine.

(*Machine à Tricoler.*)

William H. Mayo, Lynn, Mass., U. S., 23th May, 1884; 5 years.

Claim.—1st. The combination, with the bed plate, of an annular bearing ring secured to said bed plate, a cam cylinder suspended in said ring, and plates secured to the outer face of the cylinder bearing upon the ring to support the cylinder therein, substantially as set forth. 2nd. The combination, with the bed plate, of an annular bearing ring, a cam cylinder suspended in said ring, and vertically adjustable plates secured to the outer face of the cylinder and having bearing upon the ring to support the cylinder therein, substantially as set forth. 3rd. The combination, with a needle cylinder and needles, of a cam cylinder provided with two stitch cams, means to actuate the cam cylinder in the bed plate of the machine, a bar pivoted to the cam cylinder, and having cam links respectively attached to the stitch cams pivoted to its ends, and a depending arm pivoted to the cam cylinder, made rigid with the bar aforesaid, and in contact with a bearing carried by the bed plate of the machine and arranged to be retarded thereby in an opposite direction from the direction in which the cam cylinder is moving, substantially as set forth. 4th. The combination, with a needle cylinder and needles, of a cam cylinder provided with stitch cams, means for actuating the said cylinder, a bed plate in which the same is suspended, a bar pivoted to the cam cylinder and having slotted ends, cam links uniting the ends of said bar and the cams, a depending plate pivoted to the cam cylinder and made rigid with the bars aforesaid, and an annular bearing plate carried by the bed plate of the machine and forming a bearing for the said depending plate, substantially as set forth. 5th. The combination, with a cam cylinder having a ledge located within it, said ledge being provided with a needle elevating plate, and with two recesses respectively located on opposite sides of said plate, which

extends above the ledge, of a guide plate located above the ledge and extending beyond the recess formed in it, stitch cams located in said recesses, and means to actuate said cams to form passages above their upper and below their lower faces, substantially as set forth. 6th. The combination, with a cam cylinder having a ledge located in it, said ledge being provided with two recesses, and a needle elevating plate, of a guide plate located above the ledge and extending beyond the recesses therein, and movable lugs located in recesses formed in the end of the guide plate, substantially as set forth. 7th. The combination, with a cam cylinder having a ledge located in it, said ledge being provided with two recesses, and a needle elevating plate, of a guide plate located above the ledge and extending beyond the recesses therein, the ends of the plate being recessed, and lugs and springs located in said recesses, substantially as set forth. 8th. The combination, with a needle cylinder and needles, of a bed plate and a removable skeleton cylinder adapted to be attached to said bed plate, substantially as set forth. 9th. The combination, with a needle cylinder and needles, of a bed plate, and a removable skeleton cylinder, consisting of a ring adapted to be secured to the bed plate, and fingers mounted in said ring substantially as set forth. 10th. The combination, with a weight adapted to be depended from the article being knitted, and provided with a laterally-extending arm, of an upright rod with which the arm of the weight engages, and the standard of the machine, provided with a lug adapted to engage the arm of the weight and support the same, substantially as set forth. 11th. The combination, with a knitting machine, of a weight consisting of an upright bar, and a rod extending centrally through the discs, the upper end of the rod being provided with a hook to adapt the weight to be depended from the article being knitted, and a stationary guide rod passing through the perforated lugs of the disks, substantially as set forth. 12th. The combination, with a knitting machine, of a weight adapted to be depended from the article being knitted, a belt attached to the weight and arranged to be actuated by it, a weight secured to the free end of the belt, movable lugs secured to the belt, a roller for the belt mounted in the standard of the machine, and belt slipping mechanism located in close proximity to said roller and adapted to be actuated by it to stop the machine, substantially as set forth. 13th. In a knitting machine, the combination with a bed plate having a circular depending flange provided on each side with horizontal slots, of a needle cylinder located in said plate and flange, a clamp to embrace the flange and clasp the cylinder, and provided on each side with inclines, and a ring mounted in a groove surrounding the flange, and having depending slotted lugs to receive the inclines of the clamp, and provided with an operating lever, substantially as set forth. 14th. The combination, with a knitting machine, of a weight adapted to be depended from the article being knitted, a belt attached to the weight and arranged to be actuated by it, movable lugs secured to the belt, a spring roller for the belt mounted in the standard of the machine, a spring pressed lever located in close proximity to said roller and provided with a pin to embrace the belt, and having a hole to receive the pin of the spring-pressed lever, and a spring to actuate said bar, substantially as set forth. 15th. In a knitting machine, the combination, with an upright rod, of a bent rod spring having one arm rigidly secured to said rod, a disk mounted in the upper end of the rod, a flexible connection between the disk and the free end of the spring, a wire arm secured to said disk, and a tension adjuster embracing both arms of the bent rod spring and adapted to be moved thereupon, substantially as set forth.

No. 19,434. Bench Vice. (*Etau d'Etalpi.*)

Mortimer G. Lewis, Lowville, N. Y., U. S., 23th May, 1884; 5 years.

Claim.—1st. In a bench vice, the slide bar passing through a slot in the adjustable head, said head being constructed and arranged to bear against the sides of the slide bar at one end of the head, room being afforded between the other parts of the head and bar so that the head may be adjusted laterally, substantially as explained. 2nd. In a bench vice, the combination of the slide bar and the adjustable head made movable thereon, the bar being provided with a curved ledge for bracing the head, substantially as set forth. 3rd. In a bench vice, the movable head mounted upon the slide bar and braced, as explained, the clamping screw mounted in the bar and the retaining pins arranged to retain the movable head, substantially as shown and described. 4th. In a bench vice, the combination with the clamping screw mounted in the slide bar, of a vertically adjustable half nut arranged to engage with or be disengaged from the screw, said nut being sustained and guided by the abutting block in front and the guiding block in rear, substantially as shown and described. 5th. In a bench vice, the combination with the vertically adjustable nut, of the cam block located within a slot formed in the said nut and having a projecting shaft for revolving it, said cam being arranged to raise the nut by bearing against the upper surface of the slot therein, substantially as set forth. 6th. In a bench vice, the adjustable half nut having a slot for the accommodation of the operating cam and the cam located therein, said nut being arranged with its own weight or to be forced down out of engagement with the screw as the cam is turned, substantially as shown and described. 7th. In a bench vice, the combination with the vertically adjustable nut having the operating cam located in a slot therein, of the abutting block arranged in front of the nut made solid with the base of the vice and operating to sustain the nut, substantially as shown and described. 8th. The combination of the vertically adjustable block operating cam, located in a slot in said nut, a front abutting block for receiving the strain brought to bear upon the nut by the clamping screw, and the rear guiding block having the vertical flanges for engagement with the edge of the nut, substantially as shown and described. 9th. In a vice, of the character herein set forth, of an divided nut, the two parts whereof are hinged at the bottom and provided with a surrounding yoke, said nut being combined with the screw and arranged to clamp and release the same, substantially as set forth for the purposes. 10th. In a vice, of the character herein set forth, the combination with the screw, of a nut made in two parts hinged together and mounted in the bench head, substantially as shown and for the purposes explained. 11th. In combination, with the two parts of the nut arranged to clamp the vise screw, an intervening spring, substantially as and for the purposes set forth.

12th. In combination, with the two parts of the nut arranged to clamp the vise screw, a movable yoke for forcing the said two parts into operative position, substantially as shown and described. 13th. In a vise of the character herein set forth, the two parts of the clamping nut hinged to gether, the surrounding yoke, or frame for operating the nut and the projecting crank or handle, combined substantially as shown and for the purposes explained. 14th. In a vise, the combination of the clamping nut made in two parts and hinged at the bottom and the operating yoke arranged for operation, in connection with the vise screw and the forward abutting block against which said nut is made to bear, substantially as shown and described. 15th. In a vise, the combination with the two parts, of the clamping nut hinged together, as explained, of the front and rear abutting blocks mounted in the head, substantially as shown and described. 16th. In combination with the yoke or frame arranged to move the two hinged sections of the clamping nut, the spring applied in connection with said frame, and arranged to operate substantially as shown and for the purposes set forth.

No. 19,435. Regenerator Furnace. (*Fourneau a Hydrocarbures.*)

The Standard Vapor Fuel, Iron and Steel Company, New York, (Assignee of Gomer Jones, Washington, D. C.) U.S., 28th May, 1884; 5 years.

Claim.—1st. The combination of a furnace having openings or throats at each end, of oricks near the said throats or openings, bricks resting upon said top layer to form transverse passages in front of the throats or openings of said furnace, and a gas supplier in the front wall of the regenerators at a point opposite the bricks. 2nd. The combination of a furnace having openings or throats at each end, air regenerators having the top layer of bricks near the said throats or openings, and provided with a series of rows of brick resting upon the top layer to form passages leading to the furnace, and a gas supplier in the front walls of the regenerators, and having jets which register with the passages formed by said bricks, substantially as described. 3rd. The combination of a furnace open at each end, regenerators of the same size from top to bottom at each end of the furnace, gas suppliers in the front wall of the regenerators, and truncated wedge-shape flues having their base joined to the regenerators, substantially as described. 4th. In a furnace, the combination of the regenerators flues E and E' having a valve box leading to the chimney and provided with a valve for alternately shutting each flue, and an air box connected with each of the flues at a point between the inlets to the valve box and the regenerators, substantially as described.

No. 19,436. Fire Escape. (*Sauveteur d'Incendie.*)

Chester A. Roberts, Martin, Mich., U.S., 28th May, 1884; 5 years.

Claim.—1st. In a fire-escape, the combination, with the extension-bars, of pivoted standards which support the bars racks attached to the top of the standards and engaging at their outer ends with gears by which the standards can be adjusted to any position, and rocks attached to the bottom of the lower set of bars extending inward and engaging with gears on a shaft turning on the same centre with the standards for the purpose of raising and lowering the extension-bars, as herein set forth. 2nd. In a fire-escape, the combination of pivoted standards for supporting the extension bars, a set of extension-bars pivoted to the top of the standards, a set of gears on a shaft in the same center as the pivots of the standards, and a set of racks attached to rods connecting the ends of the bottom bars and engaging with the gears on the shaft, as herein set forth. 3rd. In a fire-escape, the combination of the pivoted standards C, C, the set of extension bars E, E, the gears H, H on the shaft D, the racks G, G, attached to the bottom of the extension bars and engaging with the gears, and the guide blocks I, I turning on shaft D and holding the racks in place, as herein shown and described. 4th. In a fire-escape, the combination, with the pivoted standards C, C and extension-bars E, E, of the main spring K having its fulcrum on the cross-rod a at the top of the standards, and connected with the two lower bars, and the springs R, R connected with the outer joints, as set forth. 5th. In a fire-escape, the combination with the axle S, of the bracket M provided with the dovetailed slot p, the journal Q provided with a dovetailed tongue r which rests in the slot, and a screw passing through the axle and into the tongue, as and for the purpose specified. 6th. In a fire-escape, the combination with the main extension-bar E, E resting on the pivoted standards C, C, of the secondary extension-bars U mounted on a separate frame and standing at right angles to the main bars and attached by a swivel to one of pivots of the main bars, as herein shown and described.

No. 19,437. Manufacture of Laundry Blue.

(*Fabrication de la Pierre Bleue.*)

Mathew H. Hargreaves, Pheophilus L. Hargreaves, Hull, and James E. Hargreaves, Freshwater Isle of Wight, Eng., 28th May, 1884; 5 years.

Claim.—1st. As a new article of manufacture, moulded blocks of Laundry Blue, composed of blue pigment together with gum or adhesive matter, and a disinfectant, substantially as described.

No. 19,438. Lock. (*Serrure.*)

Oscar H. Woodward and Orin L. Woodward, Clinton Junction, Wis., U.S., 28th May, 1884; 5 years.

Claim.—1st. In a lock, the combination, with a stud led plate lever having a retracting spring, of laterally studded reciprocating keys having retracting springs, the lock-bolt and its spring and the retracting lever engaging the lock-bolt, substantially as specified.

No. 19,439. Jewelling Tool. (*Outil de Bijoutier.*)

James R. Parsons, LaPorte, Ind., U.S., 28th May, 1884; 5 years.

Claim.—1st. A "caliper" jewellery-tool, composed of two main

parts united by a pivotal connection and an adjusting device, and provided respectively parallel with an equidistant from the axis of said pivotal connection with a cutting-bit or cutter and a holding tang projecting in opposite directions, said tang forming the fixed axis of the tool and adapted to be inserted in an ordinary back-centre as a substitute for a removable center point, or in a handle inserted as a substitute for the ordinary back-centre, substantially as herein specified for the purpose set forth. 2nd. In a "caliper" jewellery-tool constructed and operating substantially as herein described, a pair of jaw plates at one extremity of the tool, one of said jaw-plates having elongated screw-holes to provide for adjusting the tool so as to render it perfectly accurate as applied to a given lathe, as specified. 3rd. A handle, constructed with a knob, and a socket at its respective extremities, and provided with a gage-bar traversed by a gage-screw, substantially as shown, in combination with a caliper jewellery-tool, substantially as herein described, having a tang fitted to said socket, for the purpose set forth.

No. 19,440. Car Axle Lubricator.

(*Graisneur d'Essieu de Char.*)

Nathan M. George, Danbury, Ct., U.S., 28th May, 1884; 5 years.

Claim.—The combination, with the chair A and spring B, of the yoke E supported by the extremity of the arms of the spring, and rollers C having solid journals G, (G1 bearing on the yoke E operating a pick-up chain D for lubricating the car axle, as set forth. 2nd. The combination, with the chair A and spring B, of the yoke E having journal bearings E', E11 and lugs F, F1, and rollers C having journals G, (G1 and pick-up chain D, substantially as described for the purpose set forth. 3rd. The yoke E having journal bearings E', E11 and lugs F, F1, and spring A having ends passing through the lugs and bent around the same, in combination with the rollers C having a fixed axle and carrying a pick-up chain D and chair A supporting the spring, as and for the purpose set forth.

No. 19,441. Dust Guard for Car Axle Box.

(*Gardé Poussière pour Boites a Graisse de Char.*)

Nathan M. George, Danbury, Ct., U.S., 28th May, 1884; 5 years.

Claim.—1st. The dust guard for axles, made substantially as herein shown and described, consisting of the wooden blank D having centrally a circular hole, leather blank E having a corresponding hole and spring F within a boxing or chamber C through which the axle passes, substantially as and for the purpose described. 2nd. The dust guard consisting of the wooden blank D having an annular recess around a circular opening A, packing ring inserted therein and fitting on the axle, blank E having a circular opening centrally, and spring F supporting the blank D within the chamber C through which the axle passes, as set forth.

No. 19,442. Secondary Battery.

(*Pile Secondaire.*)

Charles A Smyth and David Bedell, Hoopstown, Ill., U.S., 29th May, 1883; 5 years.

Claim.—1st. In a secondary or storage battery, the combination of the vessel A having the corrugated sheet lead having a, the boxes B having slits b1 and shot D having perforations d previously oxidized in a bath of nitric acid, the whole arranged as and for the purpose set forth. 2nd. In a secondary or storage battery, the combination of the vessel A having the corrugated sheet lead lining a, the boxes B having slits b1, and shot D having perforations d previously oxidized in a bath of nitric acid, the balls being filled with white lead mixed with sulphuric acid and water, the whole arranged as and for the purpose set forth.

No. 19,443. Machine for making Insulator Pin. (*Machine pour Faire les Chevilles des Isoleurs.*)

William C. Jutte (Assignee of William Snee), Pittsburg, Pa., U.S., 29th May, 1884; 5 years.

Claim.—1st. In a machine for making insulating pins, the combination of two stationary rotating cutters having outlines complementary to the stem and body of the finished pin, and a sliding carriage provided with a device for holding and rotating the pin blank, substantially as and for the purposes described. 2nd. In a machine for making insulator pins, the combination of two rotating cutters, a threader and a sliding carriage adapted to hold and rotate the pin blank and provided with means for directing the course of the threader, substantially as described. 3rd. In a machine for making insulator pins, the combination with the sliding blank-holding carriage provided with the finger g, of the revolving feathered shaft f, worms F, spring f1, the threader F1, provided with bifurcated rear extremity, and the guide rod f2, substantially as described, whereby the thread is formed upon the blank, as set forth. 4th. In a machine for making insulator pins, the combination with the sliding carriage (G provided with offset G1 and short shafts g, g2, the latter having a fixed collar g3, a spring g4 and a disc g5, of the switch H, substantially as described, whereby the blanks are centred, in the manner set forth. 5th. In a machine for making insulator pins, the combination, with the sliding blank-holding carriage provided with a shaft g carrying a pulley g1, of a jointed arm secured at one extremity to said shaft and at the other extremity to the driving pulley shaft, and carrying a double pulley at its elbow, as and for the purposes described. 6th. In a machine for making insulating pins, the combination of the frame A, cutters D, E, sliding carriage G having offset G1 and finger g6, and provided with shafts f, g2, the latter having collar g3, spring g4 and disc g5, threader F1, having bifurcated rear extremity worm F, coil spring f1, guide rod f2, and switch H, all arranged and operated in the manner and for the purposes described.

No. 19,444. Hose Coupling.

(Joint de Tuyau Elastique.)

Samuel Hamer and John G. Leavitt, Salt Lake, Utah, U. S., 29th May, 1884; 5 years.

Claim.—1st. A hose-coupling, constructed with a fork united with one hose section by links, with the bifurcated end adapted to receive pins or studs on the other hose-section, which fork is provided with a spring catch for locking the fork in place when the hose sections are coupled. 2nd. In a hose-coupling, the combination with the socket B, of the fork F having notched ends, the links J and the neck C having studs H, substantially as herein shown and described. 3rd. In a hose-coupling, the combination, with the socket B, of the links J, the fork F, the neck C having studs L and the notched spring catch or lever K pivoted on the fork F, substantially as herein shown and described.

No. 19,445. Steam Feed for Circular Saw Mills. *(Alimentation de Vapeur pour Scieries à Scies Circulaires.)*

William Hamilton, Peterborough (co-inventor with Joseph Chew, Midland), Ont., 29th May, 1884; 5 years.

Claim.—1st. In a steam saw-feed or similar machine, a single valve at each end of the cylinder, and connected together, as shown for the purpose set forth. 2nd. The single valve with winged pistons, constructed substantially as described and for the purpose hereinbefore set forth. 3rd. In a steam saw-feed or similar machine, the connecting of the valves by a pipe E, and the valve spindle H, with hangers and collars N, N, as described and for the purpose set forth. 4th. In a steam saw-feed or similar machine, the adjustable sleeve-coupling I, with groove, and the forked arm R working in same, substantially as and for the purpose hereinbefore set forth. 5th. In a steam saw feed or similar machine, the pipe Et with cock or valve S, substantially as and for the purpose hereinbefore set forth.

No. 19,446. Process for Generating Gas.

(Procédé de Production du Gaz.)

The Standard Vapor, Fuel, Iron and Steel Company, New York (Assignee of Gomer Jones, Washington, D. C.), U. S., 29th May, 1884; 5 years.

Claim.—1st. In the art of generating gas from petroleum, the method herein described, consisting, first, in feeding the oil in a small stream before a blast of super-heated steam; second, applying heat at the moment of vaporization to prevent condensation; and, third, projecting said vapor against a current of super-heated steam coming from the opposite direction and under less pressure than the vapor, substantially as described. 2nd. In the art of generating gas from petroleum, the method herein described, consisting, first, in feeding the oil in a small stream before a blast of super-heated steam; second, applying heat at the moment of vaporization to prevent condensation; and, third, projecting and whirling said vapor against a whirling current of super-heated steam coming from the opposite direction and under less pressure than the vapor, substantially as described.

No. 19,447. Machine for Cutting Feed.

(Machine pour Hacher la Nourriture.)

H. C. Staver & Company (Assignees of George W. Eton, Chicago, Ill., U. S., 29th May, 1884; 15 years.

Claim.—1st. The combination, in a feed-cutting machine, of a series of differential sprocket wheels a upon a driving shaft, a feed roller H supported in bearings which permit it to rise and fall, and a series of differential sprocket wheels f on the shaft of such feed roller, substantially as and for the purposes specified. 2nd. The combination, in a feed-cutting machine, of a sprocket wheel K on the feed roller H, a sprocket wheel L on the feed roller J, and a wheel N mounted on a movable support, substantially as and for the purpose specified. 3rd. In a feed-cutting machine, the combination of a shaft C carrying the cutters, bevel wheels D, E, shaft F, sprocket wheels a, sprocket F, sprocket wheels a, sprocket wheels f and feed rollers H, J, substantially as and for the purposes specified. 4th. In a feed-cutting machine, the combination of a feed roller H supported in movable bearings b located in circular slots c and curved hood I, substantially as and for the purposes specified.

No. 19,448. Boiler for Digesting Wood into Pulp. *(Chaudière pour Dégrèler le Bois en Pâte à Papier.)*

George E. Marshall, Turner's Falls, Mass., U. S., 29th May, 1884; 5 years.

Claim.—1st. The combination in a wood pulp digester, of a boiler, as described, with an outer casing or jacket, as described, the space between the boiler and jacket being provided with a pressure, whereby the pressure of the boiling liquor at the seams or laps of the digester is equalized by the pressure of the steam in the space between the digester and its surrounding jacket, substantially as described. 2nd. The combination of the blow-off valve D and its connections, with the digester, substantially as described. 3rd. The combination of the pipe F and its pressure-valve, with the digester, substantially as described. 4th. The combination of the circulating pipe G, with the digester, substantially as described. 5th. The combination of the hot water pipe O, with the digester, substantially as described.

No. 19,449. Heating Apparatus. *(Calorifère.)*

Eugène S. Manny, Beauharnois, Que., 29th May, 1884; 5 years.

Reclame.—1o. Une chaudière à vapeur, ayant des tubes verticaux avec fournaise a, pourvue d'une grille N, et d'un pot à feu entouré d'eau ayant communication avec l'espace des tubes verticaux, tel que décrit et pour les fins indiquées. 2o. La combinaison du pot à

feu A, grille N, tubes C et E, réservoir F, distributeur H, conduits G et porte M, le tout tel que dessus décrit et pour les fins indiquées.

No. 19,450. Paint Varnish. *(Peinture Vernis)*

Laurent Grenier, Ste. Ursule, Que., 29th May, 1884; 5 years.

Reclame.—Une composition formée d'aucune des poudres ordinaires employées dans la fabrication de la peinture, et d'une solution de gomme arabique additionnée de sucre, de lait, de térébenthine ou d'infusion de graine de lin, d'alcool et d'acide sulfurique, dans les proportions et pour les fins décrites.

No. 19,451. Glove Fastening. *(Fermoir de Gant.)*

William F. Foster, New York, N. Y., U. S., 29th May, 1884; 5 years.

Claim.—In combination, the lacing-cord, the glove, the disc-like head a arranged on one surface thereof, and the plate c arranged on the other surface in relation, substantially as described, the eccentric neck provided with the flange c and means of attachment, whereby by the elasticity of the glove the entrance to the hook is substantially closed to prevent the escape of the cord.

No. 19,452. Construction of Wire Baskets.

(Fabrication des Paniers en Fil de Fer.)

Alexander Greenwood, Montreal, Que., 29th May, 1884; 5 years.

Claim.—1st. The combination in a wire basket, of the side portions a, a, with and hinged upon and around, a hoop-shaped supporting wire C, substantially as described and for the purposes hereinbefore set forth. 2nd. The combination of a double row of bare hoops B, B, B, B, B, B, with, and hinged upon and around, a hoop-shaped supporting wire C, substantially as described and for the purposes hereinbefore set forth. 3rd. The combination of the side portion a, a, a, hinged upon and around a hoop shaped supporting wire C, with the similarly-hinged double row of base loops B, B, B, B, B, B, B, substantially as described and for the purposes hereinbefore set forth. 4th. The combination of the suspending wires E, E, E, with the sides A, A, A, at their intersecting points D, D, D, substantially as described and for the purposes hereinbefore set forth.

No. 19,453. Locomotive and Steamboat Boiler. *(Chaudière de Locomotive et Marine.)*

Oscar Rothrok, Beech Creek, Pa., U. S., 29th May, 1884; 5 years.

Claim.—1st In combination with a fire-box, having a dependent double water partition located between twin boilers, said partition having between its outer walls a depression or fuel reservoir extending entirely through the fire-box, substantially as described. 2nd. In a boiler, the combination of a front fire-box having a longitudinal passage or depression in its top, with a twin boiler having a longitudinal passage or space communicating with the passage in the fire-box, substantially as described. 3rd. In a boiler, such as described, its combination of a front fire-box having a passage or depression in its top and a water-jacket forming a lining for the sides and floor of said passage, with a twin boiler having a longitudinal passage or space communicating with the passage in the fire-box, as set forth. 4th. In combination with the passage in the fire-box, as set forth, a boiler furnace, the combination of the pendent double water partition having a chamber between their outer walls, with the side water legs, the said water partitions diverging from the front to the rear of the fire-box at both of its sides, in such a manner as to cause the gases generated from the fresh fuel in the front of the fire-box, to be retarded therein until ignited, substantially as shown.

No. 19,454. Rod Coupling. *(Accouplement de Bielle.)*

George B. Turrell, South-Orange, N. J., U. S., 29th May, 1884; 5 years.

Claim.—1st. The combination, with the wooden rod sections having screw threads at their ends, of a tubular coupling of sheet metal, with the end portions cylindrical, or nearly so, and a screw thread bent inwardly, so as to be of less diameter than the end portions, substantially as set forth. 2nd. The combination, with the wooden gun rod sections, of a coupling tube of sheet metal slightly smaller than the exterior of the wooden sections, and having a screw thread bent inwardly, substantially as set forth. 3rd. The sheet metal coupling tube having the screw thread bent inwardly, in combination with the wooden rod sections fitting the interior of such set forth, and having screw threads upon the wood, substantially as set forth. 4th. The sheet metal coupling tube having a screw thread bent inwardly in the middle portions, and plain portions at one or both ends of larger diameter than the threaded portions, in combination with the rod sections the ends of which slide into the plain portions of the coupling before the screw threads engage, substantially as specified. 5th. The combination, with the wooden gun rod section, of a tubular coupling adapted to receive the wooden sections into its respective ends, and having a screw thread bent inwardly in such tubular coupling, the ends of the gun rod sections not touching so as to be tightened by screwing the sections into the coupling, substantially as set forth. 6th. The combination in a jointed rod, of a tubular coupling having an internal screw thread in the middle portion, and wooden sections having screw-threaded ends, and plain tapering portions between such ends, and the plain portions of the rod, so that the tapering portions are drawn into the ends of the coupling by the action of the screw, substantially as set forth. 7th. In a jointed rod, the combination, with a tubular coupling having an internal screw thread, of the wooden rod section of larger diameter than the exterior of the coupling, and having a bearing surface that is brought forcibly against the coupling tube, at or near the end, to prevent looseness from shrinkage, substantially as set forth. 8th. The combination with the wooden rod sections, of a tubular coupling into which the end portions of the wooden sections are directly received, such coupling having an internal screw thread so that however closely screwed together, the sections may be separated by unscrewing one of the sections from the coupling, substantially as specified.

No. 19,455. Lubricator. (Grasseur.)

Lather B. Bailey, London, Ont., 27th May, 1884; 5 years.

Claim.—1st. In a lubricator, a valve spindle with an elongated tapered end, the upper or larger portion of which regulates the steam inlet, and the smaller portion the lubricant outlet, in combination with valve seats of different areas, substantially as and for the purposes described. 2nd. In a lubricator and in combination with the oil reservoir thereof, having a passage or passages leading therefrom, communicating with the parts to be lubricated, with two openings or valve seats of different areas, the larger being for the admission of the steam, and the smaller being the oil outlet, and with a valve or valves controlling such openings, substantially as and for the purposes specified. 3rd. In a lubricator a valve spindle D, provided with an elongated tapered end N, in combination with the steam inlet G, and lubricant outlet U, such inlet and outlet being of different areas and arranged with relation to the spindle, substantially as and for the purposes described. 4th. In a lubricator the combination with the reservoir thereof with the chambers G, G', passages F, I, and H, H', steam inlet C, lubricant outlet G, valve spindle D, provided with an elongated tapered end N, the parts set forth. 5th. In a lubricator, the combination with the reservoir thereof, of chambers G, G', passages F, I, and H, H', steam inlet C, lubricant outlet G, valve spindle D, provided with an elongated tapered end N, passage K, and outlet P, the parts being constructed, combined and operating substantially as and for the purposes set forth. 6th. In combination with a lubricator, constructed substantially as described, a gauge glass O, provided with passages H, Z, outlet R, valve spindle D, and passage L, substantially as shown and for the purposes specified.

No. 19,456. Mowing Machine. (Faucheuse.)

William Keeler and Charles F. Cross, Towanda, Pa., U. S., 29th 1884; 5 years.

Claim.—1st. The brace L, provided with arms n, n, in combination with the main axle, gearing, shafts F and H, and sleeve box d, for which mentioned features the said brace and its arms for a suitable support and bearings. 2nd. In a mowing machine, the side bars M and M', provided at their rear ends with double curved or convex faces, as shown at c, in combination with finger box T, rigidly attached to the lower ends of said arms, substantially as described. 3rd. The sleeve box d, in combination with arm M, the crank wheel, the pitman, and the cutter box, substantially as described.

No. 19,457. Drop Lift Step for Mill Machinery. (Collet Inferieur d'Arbre Vertical pour Engrener et Desengrener les Machineries de Moulins.)

Lawrence B. Koblue and William B. Hamilton, Lima, Ohio, U. S., 29th May, 1884; 5 years.

Claim.—1st. In a drop lift step, a cam located beneath the movable section, upon a shaft pivoted in the walls of the base and adapted to operate said section to lift it, by a partial rotation of said cam, substantially as set forth. 2nd. In a drop-lift step, a cam for operating the same, pivoted under the movable section and having one side of its face formed into a seat for the end of said movable section to rest upon when elevated, said cam being fixed upon a shaft or pin pivoted at right angles to the vestibles walls of the step, and adopted to elevate the gear bearing shaft by a partial rotation of the same, and to retain said gear bearing shaft in position, when elevated, by the pressure of the movable section of the step upon said cam seat, substantially as shown and specified. 3rd. A cam for operating the movable section of a drop lift step, having a flat seat upon one side of its face, with an angle projections beyond the circle of rotation of said seat, whereby said movable section (with its gear bearing shaft) is elevated above it when the cam is operated, and allowed to fall back and become locked in position, as hereinbefore specified. 4th. In a drop lift step having a fixed and a movable section, a rib upon one section engaging with a groove in the other section, as and for the purpose hereinbefore set forth. 5th. In a drop lift step having an operative cam for lifting its movable section, a shaft pivoting said cam in the walls of the base, said shaft being formed with a flat surface one side, extending from its insertible end longitudinally towards the head, and adapted for insertion through a hole of like (reverse) shape in the cam, as and for the purpose set forth. 6th. In a drop lift step for mill machinery, an anti-frictional reversible button having its sides convexed, and adapted to operate as a seat for the gear bearing shaft, as set forth. 7th. A button for drop lift steps, of oblong form, its ends extend under the bush ring and supporting the same, and having its two sides made convex, whereby it is made reversible, as set forth. 8th. In a drop lift step having its movable section cast or bored with a cavity or socket for the end of the gear bearing shaft and having a button seated therein upon which said shaft is supported, the combination of a raised boss central with said cavity in the bottom thereof to form h seat for said button, substantially as set forth. 9th. A drop lift step having within its base a projection or other equivalent, means for forming a rest for the end of the movable section, to relieve the cam from the superincumbent weight of the gear-bearing shaft, and to allow it to be more readily brought into operation. 10th. In a drop lift step having an insertible brush-ring grooved on one side to form a hole, with an opposite groove in the inner wall of its bowl or socket, the combination therewith of a split pin having a flanged head, whereby said ring may be removed by the withdrawal of said pin, as set forth. 11th. In a drop lift step having a fixed and a movable section telescoped together, and operated by a vertical movement, as set forth, the combination with said sections, of a rib upon one section engaging with a groove in the other, as and for the purpose specified. 12th. In combination with the movable section and the fixed base, the operative cam and the pivoted shaft, the latter extending diametrically through the base, across the axial line of the gear bearing shaft, supporting said cam, upon the middle thereof, and adapted to operate substantially as set forth.

No. 19,458. Boring Machine.

(Machine pour Forer.)

Zachariah C. Phillips, Allegheny, Pa., U. S., 23th May, 1884; 5 years.

Claim.—1st. In a boring machine, the combination, with the vertical frame, of a sliding frame carrying an auger-shaft hollow throughout its length, and means for centering and holding the auger-shank in said hollow shaft, substantially as and for the purposes set forth. 2nd. In a boring machine, an auger-shaft hollow throughout its length, in combination with a crank shaft geared to the auger-shaft and situated on a different vertical plane, substantially as and for the purposes specified. 3rd. In a boring machine, a crank shaft capable of receiving a longitudinal as well as an axial movement, and mounted in bearings on a sliding frame, a pinion and rack, a clutch for connecting the shaft with the pinion, and devices for imparting an automatic longitudinal movement to the shaft, substantially as and for the purposes specified. 4th. In a boring machine, the combination of a crank shaft capable of receiving a longitudinal as well as an axial movement, a pinion and rack, a clutch and stops, one of which is adjustable, having inclined faces arranged to move the shaft longitudinally, so as to connect and disconnect the shaft substantially as and for the purpose specified.

No. 19,459. Thrashing Machine.

(Machine à Battre.)

Edwin R. Jones, Martin's Ferry, Ohio, U. S., 29th May, 1884; 5 years.

Claim.—1st. The thrashing machine tooth, wedge-shaped in cross section, with smooth sides and notched serrated upon its front edge, bent to almost a right angle, as set forth. 2nd. In a thrashing machine, the combination of a cylinder provided with notched or serrated teeth, with smooth sides and bent back to almost a right angle, a grated concave devoid of teeth arranged below the thrashing cylinders, as set forth.

No. 19,460. Decorated Plate Glass.

(Glaze Ornée.)

The Carroll Decorative Plate Glass Manufacturing Company, (Assignee of James C. Carroll), Baltimore, Ind., U. S., 29th May, 1884; 5 years.

Claim.—1st. As a new article, plate glass ornamented with colors and having a back or protecting covering of slate, substantially as set forth. 2nd. The method of producing plate glass ornamented with colors, consisting in applying the colors to one surface of the glass, then applying over the colors a plastic composition embracing slate dust, and finally hardening the composition, as set forth. 3rd. The method of producing plate glass ornamented with colors, consisting in distributing oil mixed colors on the surface of water, immersing a glass plate into the water so as to have the colors adhere to one surface of the plate and then covering the colored surface with slate, as set forth.

No. 19,461. Superheater Furnace.

(Fourneau Surchauffeur.)

The Standard Vapor Fuel, Iron and Steel Company, New York, (Assignee of Gomer Jones, Washington, D. C.), U. S., 29th May, 1884; 5 years.

Claim.—1st. The combination of a gas and air mixing chamber and a combustion chamber, said mixing chamber having a series of arches each formed of rows of brick with spaces between each row, and the rows in the upper arch being directly over the spaces between the rows in the lower arch, substantially as described. 2nd. The combination of a gas and air mixing chamber and a combustion chamber, said mixing chamber having a series of arches formed of rows of bricks one arch being separated from the other by retaining bricks, and the rows of one arch being directly over the retaining bricks of the lower arch, and the retaining bricks of the upper arch arranged in a staggering manner relatively to the retaining bricks of the arch below, substantially as described.

No. 19,462. Gas Generator. (Générateur à Gaz) !

The Standard Vapor, Fuel, Iron and Steel Company, New York (Assignee of Gomer Jones, Washington, D. C.), U. S., 22th May, 1884; 5 years.

Claim.—1st. In a gas-generator, the combination of two imperforate jackets, one within the other forming a steam-space, having inlet and outlet pipes which enter through the cover for said jackets, said cover having supply and exhaust pipes opening into the mixing-chamber formed by said cover and the inner jacket, substantially as described and for the purpose set forth. 2nd. In a gas-generator, the combination of imperforate jackets B₁, B₂, cover B₃, pipes C, D₃, D₄, D₇ and D₈ passing through said cover and a pipe D₆ connecting pipes D₄ and D₈, substantially as described. 3rd. In a gas-generator, the combination of a mixing chamber having a vapor-supply pipe and a vapor-exhaust pipe, a drum suspended within said mixing-chamber and connected with a steam-supply pipe and having an opening connecting its interior with the mixing chamber, and a spiral interposed between the walls of the jacket and drum and between the opening in said drum and vapor exhaust pipe, substantially as described. 4th. In a gas-generator, the combination of two imperforate jackets, one within the other, and forming a chamber, and an exhaust-pipe extending down through said chamber below the bottom of the inner jacket, for the purpose set forth. 5th. In a gas-generator, the combination of two imperforate jackets, one within the other, a cover for said jackets, a steam-supply pipe passing through said cover into the space between the jackets, an exhaust-pipe extending through the cover and between the jackets, a pipe connected to said exhaust pipe and passing through the cover to near the bottom of the mixing chamber, and an exit pipe extending through the cover from said mixing-chamber, for the purpose set forth. 6th. In a gas-generator, the combination of two imperforate jackets, one within the other, a

other machinery, the combination of the loose drum and brake-wheel connected thereto, the sliding collar, the two-armed driver, keyed to the revolving shaft and provided with the thrust plates the external brake band formed in two sections, and each section pivotally connected at one end to the ends of the thrust plates, and the intermediate mechanism for connecting the other ends of said brake band with the sliding collar, consisting of the bell cranks pivoted to said sections of brake-band, the sliding blocks and toggle bars, substantially as and for the purpose shown and described. 4th. In an external clutch for hoisting and other machinery, the combination of the loose drum and brake wheel, the sliding collar, driver and sectional brake-band, and intermediate mechanism for connecting said band with said collar and driver, and the mechanism for operating said collar, consisting of the rod *m*, hand wheel *m* and intermediate crank connecting-rod *m*₂, substantially as and for the purpose shown and described.

No. 19,474. Scarf Retainer. (*Agrafe de Cravate.*)

John Sandilands, San Francisco, Cal., U.S., 30th May, 1884; 5 years.

Claim.—The herein-described fastening device for attaching a neck-wear, consisting of the circular cup-shaped plate *D*, provided with the slot *C*, stops *E* and ears *B*, *B*, on opposite sides of, and at right angles to the slot, substantially as set forth.

No. 19,475. Machine for Manufacturing Felt Boots, Shoes, or Stockings. (*Machine pour Confectionner les Chaussures ou les Bas de Feutre.*)

Laurent Ruel, Merrimac, Mass., U.S., 30th May, 1884; 5 years.

Claim.—1st. In a machine for making felt boots, shoes, or stockings, the driving gear *E* provided with the spiral cams *a*, *a*, and supported from the bed or floor *A* by the standards *D*, substantially as described. 2nd. In a machine for making felt boots, shoes, or stockings, the table *B* pivoted to the fixed hub *F*, and provided with the horns *o*, *o*, through which a horizontal swinging motion is imparted to the table *B* by the revolving spiral cams *a*, *a*, on the driving gear *E*, substantially as shown and described. 3rd. In a machine for making felt boots, shoes, or stockings, the upright spindles *L*, *L* having fixed on them the bevel pinions *c* and spur pinions *c*, and having their head or top ends journaled in the centrally pivoted lever *l*, substantially as described. 4th. In a machine for making felt boots, shoes, or stockings, the carriage *N* having fixed on its side the rack *k*, and arranged to be moved reciprocally end-ways on the head-stock *M* by the alternating spur pinions *d*, substantially as shown and described. 5th. In a machine for making felt boots, shoes, or stockings, the flexible rollers *r* hinged to a carriage *N*, carrying the rollers *O* and cone or former *P*, so as to press upon the foot portions of said cone, substantially as described and for the purpose set forth.

No. 19,476. Ladder Hook. (*Crampon d'Echelle.*)

John F. Manahan, Lowell Mass., U.S., 30th May, 1884; 5 years.

Claim.—1st. A ladder hook comprising a base plate, a hook proper pivoted to said base plate, and means for retaining or locking the hook, substantially as hereinbefore set forth. 2nd. The combination with the side pieces, of a ladder or hooks pivoted thereto in such position that, when open, they will project outside of the ladder, and when shut, they will be contained within the compass of the ladder, and means whereby said hooks are locked or retained in either their open or their closed position, substantially as hereinbefore set forth. 3rd. In a ladder hook, the combination, with a base plate and hook proper, of a spring controlled catch or lock, for positively locking the hook to the base plate, substantially as hereinbefore set forth. 4th. A ladder hook comprising a base plate, a spring controlled locking pin or bolt mounted in said plate, and pivoted hook, combined to operate substantially in the manner and for the purposes hereinbefore set forth.

No. 19,477. Steam Trap. (*Trape de Vapeur.*)

George B. McCracken, Willimantic, Ct., U. S., 30th May, 1884; 5 years.

Claim.—1st. In a steam-trap of the character herein set forth, the seat-disk carrier provided with the two disks, and made reversible in its holder, substantially as and for the purposes set forth. 2nd. The herein described seat-disk, made conical and arranged in the holder, substantially as explained, so as to leave a space between the two, for the purposes and objects set forth. 3rd. In a steam trap of the character herein set forth, the discharge end of the expansion tube having the two independent ledges or rings, with the annular space between them, for contact with the seat-disk, substantially as shown and described. 4th. In a steam trap, the packing-gasket, combined having an inner and outer tubes, the same being retained ant at top, and arranged to expand and contract with the inner tubes, and to prevent communication between the two compartments into which it divides the outer tubes, substantially as shown and described. 5th. In a steam trap, the outer tube provided with the separating chamber, the expansion tube extending up into said chamber, and being perforated as explained, the packing gasket, surrounding the lower end of the expansion tube, all combined and arranged substantially as shown and described. 6th. In a steam trap of the character herein set forth, the combination of the expansion tube, outer tube, packing gasket, separating chamber, cut-off operated by the expansion tube, and the blow off pipe, provided with a valve, and connecting the discharge pipe and separating chamber substantially as shown and described.

No. 19,478. Spike of Securing T-Rails.

James T. Nulty, Frankford, Pa., U.S., 31st May, 1884; 5 years.

Claim.—1st. In a railroad spike consisting of a metallic pointed bar provided with a lug projecting from a side of said bar at a point near the centre thereof, whereby the spike may be secured into the sleeper, the base of the rail secured by the lug, and the web and underside of the head of said rail braced and supported by the head of the spike bent over against the head of the rail, as specified.

No. 19,479. Shingle Sawing Machine.

(*Machine à Scier le Bardean.*)

Isaac M. JIouse, Gravenhurst, Ont., 31st May, 1884; 5 years.

Claim.—1st. In combination with the reciprocating carriage *B*, the rack *C*₂, toothed segment *C*, rock shaft *C*₁, friction segment *E*, paper friction roller *F* and drive wheel *F*₁, as set forth. 2nd. The combination of the bed *A*, having a single elevated V-rail *A*₁, carriage *B* sliding thereon and oppositely supported by base *M*₁ on friction rollers *M*₂, as described. 3rd. The combination with bed *A*, having post *o* and the carriage *B* provided with head blocks *D*, and elbow lever *T* and pawls *T*₁, *T*₂, as described, of the cam bars *S*₁, *S*₂, *S*₃ having on each pair high and low cams 3, 3r, 5, 5i, oscillating spring bar *o*, cam wheel *P*, and arm *Q* having pawl *Q* and cut-off *R*₁ operating to project the shingle block from the carriage for feeding the saw, as set forth. 4th. The spring bar *L*, strap *L*₂, roller *L*₃, shaft *K*₃, and strap *L*₅, arranged as set forth to retract the carriage *B*, as described.

No. 19,480. Sulky Plough. (*Charrue à Siège.*)

George Wiard, Batavia, N.Y., U.S., 31st May, 1884; 5 years.

Claim.—1st. The combination, with the frame *A*, having brackets *B*, *B*, and the wheels *D* and *E*, of the transverse rod *q* bearing *r*, adjustably attached to said rod, and the plow *P*, and beam *p* secured to the bearings *r*, substantially as set forth. 2nd. The combination, with the hub *k*, of the axle box *m* constructed of wood and secured removable in the hub *k*, and the cap *o*, provided with a marginal flange *o* overlapping the edge of the hub *k*, substantially as set forth.

No. 19,481. Rein-Holder. (*Porte Guides.*)

David C. Montgomery, St. Joseph, Mo., U.S., 31st May, 1884; 5 years.

Claim.—1st. A rein-holder consisting of a base plate *B*, having guide lugs *D* at its upper end, and a lateral bent arm *N* near its lower end, the lower plate *H* pivoted to the base plate and extending from the lugs of the latter to its bent arm *n*, and upward from said lugs *L*, to the upper edge *p* of the base plate, the spiral spring *z* around the pivot bar of the lever plate, and the clamp plate *J*, as specified.

No. 19,482. Foot Power. (*Pédale.*)

Henry Field, Jr., New Bedford, Mass., U.S., 31st May, 1884; 5 years.

Claim.—1st. The combination, with a pulley or wheel, of a rocking, swinging frame surrounding it, a swinging rod or lever and an elbow lever connected with the swinging rod or lever and with the frame, substantially as herein shown and described. 2nd. The combination, with a pulley or wheel, of a rocking, swinging frame surrounding it, an elbow lever connected with the frame and with a rocking standard and of a swinging standard supporting the rocking frame surrounding the wheel, substantially as herein shown and described. 3rd. The combination, with a pulley or wheel, of a rocking or swinging frame surrounding it, a rocking arm or standard on or by which the said frame is supported in such a manner that it can have a slight vertical movement, an elbow lever pivoted to the frame to the arm, holding the frame, and to a rocking standard, substantially as herein shown and described. 4th. The combination, with the wheel *H*, of the rocking frame *I* surrounding it, and provided with downwardly projecting rods *G*, the rocking arm *F* on the shaft *B*, the fork *F* formed on the upper end of the arm *F*, in the prongs of which fork the rods *G*, projecting from the frame *I*, are held to slide the standard *S* on the rocking foot plate *C*, and of the angle lever *O*, pivoted to the lower end of an arm *N* of the frame *I*, to the fork *F*₁ and to the standard *S*, substantially as herein shown and described. 5th. The combination, with the wheel *H*, of the frame *I* having the downwardly projecting rods *G*, and the arm *N*, the rocking arm *F* on the shaft *B*, the fork *F*₁ on the upper end of the arm *F*, the springs *L*, the nuts *M* on the rods *G*, the angle lever *O*, and the standard *S* on the rocking foot plate *C*, substantially as shown and described. 6th. The combination with the rocking foot plate *C*, of the cross-bar *E*, held on the shaft *B* and below the plate *C*, and of the springs *D* interposed between the foot-plate *C* and the bar *E*, substantially as herein shown and described.

No. 19,483. Press for Moulding Glass Insulators. (*Presse pour Mouler les Isoloirs en Verre.*)

Lawrence B. Gray and Joseph Ham, Boston, Mass., U.S., 31st May, 1884; 5 years.

Claim.—1st. The combination, with the shell or case *A*, of the sliding plunger *B*, having the actuating bars *C* pivoted thereto by the hinge pieces *E*, and provided with a screw thread *H*, the lever *L* pivoted to the case and pivoted to the bars *K*, and provided with a screw thread *F*, substantially as described.

No. 19,484. Car-Coupler. (*Accouplage de Chars.*)

Robert Smith, Quebec, Que., 31st May, 1884; 5 years.

Claim.—1st. In a car-coupler device, a cross-bar swung horizontally at right angles to and under the link from pivoting points in rear of the link for the purposes of operating the link, substantially as and for the purposes set forth. 2nd. The combination of the cross-bar *D* having fixed arms *E* and *F* pivoted at *G* and *H*, with the draw head *A*, link *C* and pin *B*, substantially as and for the purposes set forth.

No. 19,485. Potato Planter. (*Semvir à Patates.*)

John P. Wiet, Parma, Ohio, U.S., 31st May, 1884; 5 years.

Claim.—1st. In a potato-planter, a seed box and tube, in combination with a stop valve and a cutting valve, and independent mechanism, substantially as described, for each of said valves leading to cam blocks on the wheel, whereby said valves are operated independently in a certain relation to each other, substantially as described. 2nd. In combination with the body and wheels, the seed-box and tubes, the upper cutting and lower stop valve, the bars *h* and *h'* for giving independent movement to the said valves, with their springs and the bell-crank levers *r*, *r'* and the cam blocks, one set in advance of the other, the parts being constructed arranged and operating all substantially as described. 3rd. In combination with the bell-crank levers *r*, *r'*, the valves, the bars *h*, *h'*, with their springs and rods, as described, between said valves and levers, the bar *m* having pin 9 bearing upon the levers, and a lever 10 acting upon the rods *m*, where by the driver may throw the bell crank levers out of the path of the cam blocks, all substantially as described.

No. 19,486. Post Augers. (*Tréyan pour Clôture.*)

John E. Miles, Marlin, Texas, U. S., 31st May, 1884; 5 years.

Claim.—1st. The combination, in a post auger, of the socketed block, the screw-threaded rod extending from the centre of the lower end of the block, the expander disk fitting upon said threaded rod and having the slotted wings or extensions, the two nuts for adjusting the position of the expander-disk, upon the threaded rod, and the curved auger blades, as and for the purpose shown and set forth. 2nd. The herein-described post auger consisting of the shaft, the cross handle, the socketed block, the curved auger blades, the set screws securing the blades in their sockets, the screw-threaded rod extending from the centre of the lower end of the block, the expander disk having slotted wings or extensions, and the two nuts for adjusting said disk upon the threaded rod, as and for the purpose shown and set forth. 3rd. In a post-auger, the combination of the curved concavo-convex auger-blades and the adjustable slotted expander-disk, whereby the lower pointed ends of the blades may be arranged to cross one another, as and for the purpose shown and set forth.

No. 19,487. Combined Ironing and Pressing Board. (*Table à Repasser et Presser.*)

James E. Ellison, Columbus, Ohio, U. S., 31st May, 1884; 5 years.

Claim.—In a combined iron and pressing board, the combination, with the board A, slotted at B and grooved on its upper face at C, of the pressing board K having the plate D and groove L, and of the brace N having seat *g*, lug or projection *h* and hook S, substantially as shown and described.

No. 19,488. Braiding Attachment for Sewing Machines. (*Dispositiun aux Machines à Coudre pour la Passementerie.*)

Frederick Leiss, New York, N. Y., U. S., 31st May, 1884; 5 years.

Claim.—A sewing-machine binding attachment, consisting of a presser-foot having an inclosed braid guiding passage *c* extending longitudinally thereof, and a vertical needle hole *d* arranged at the side of and intersecting said inclined guiding passage, substantially as and for the purpose hereinbefore set forth.

No. 19,489. Door Bolt. (*Verrou de Porte.*)

Robert G. Vassar, New York, N.Y., U. S., 31st May, 1884; 15 years.

Claim.—1st. The combination, with the sliding bolt C and its retracting spring, of the automatic sliding catch for holding the bolt, and the rounded head or button E for the catch projecting through the casing, and nearly flush with the outer surface of the casing, as and for the purpose described. 2nd. The combination, with the bolt C and spring C₁, of the automatic catch sliding transversely to the bolt, and having a rounded head or operating button E projecting through the casing, but nearly flush with the outer surface thereof, and the independent operating thumb piece D upon the exterior of the case, having an internal piece D₂ adapted to engage with bolt C to lock the door but incapable of acting on the bolt, for the purpose of throwing it back. 3rd. The combination of a horizontally and laterally movable bolt C, springs C₁, K, detached operating thumb-piece and stud D, D₂, so arranged that it may be brought against the bolt for throwing it to lock the door, the automatic catch, and a detent for an alarm mechanism placed in the path of the bolt when moved laterally, as and for the purpose described. 4th. The combination, with the sliding bolt C, retracting spring C₁, automatic sliding catch E₃, of the knob or button E, and slide D, substantially as and for the purpose described. 5th. The combination of bolt C, spring C₁, slide E₃, spring J and button E having stem or spindle E₂ engaging with slide E₃. 6th. The combination, with the bolt and its retracting, of a detached operating slide, thumb piece or similar operating device, arranged in the manner described, to engage with the bolt and throw it against the stress of the retracting spring, or other suitable device, tending to hold the bolt back, said thumb-piece being incapable of acting on the bolt in the same direction as the spring, and an automatic catch for engaging with and holding the bolt against its retracter, as and for the purpose described.

No. 19,490. Clothes Line Pulley.*(Poulie de Corde à Linge.)*

François X. St. Charles, Montreal, Que., 31st May, 1884; 15 years.

Réclame.—Dans une poulie mécanique pour cordes à linge, le tambour conique I à "rayures" *a*, en combinaison avec les roues dentées C et H, la manivelle E, les essieux I et J, la cloison F, la planchette A, la couverture G et les boulons K, L, le tout tel que ci-dessus décrit et pour les fins sus mentionnées.

No. 19,491. Water Heater. (*Rechauffeur d'Eau.*)

Herman A. Gantert, San Francisco, Cal., U. S., 31st May, 1884; 5 years.

Claim.—1st. The water-heater, herein-described, consisting of the tube A, into which water under pressure is admitted by the valve D to flow out through the passage-way F, while steam is admitted into said tube through valve E to heat the said water. 2nd. The water heater, as above claimed, in combination with a raising and lowering device to adjust the water pressure with relation to the pressure of the steam available, substantially as described.

No. 19,492. Decomposition of Metallic Haloid Salts by Electrolysis.*(Décomposition des Sels Haloides Métalliques par l'Électrolyse.)*

Carl Hoepfner, Berlin, Germany, 31st May, 1884; 5 years.

Claim.—1st. In the electrolysis of the chlorides of the light and heavy metals, and of haloid salts of the same, the employment of depolarizing substances in solid or liquid form at the cathode in order to prevent the formation of free hydrogen. 2nd. In the electrolysis of haloid salts, the employment of depolarizing substances at the cathode, in combination with an electrolyte circulating around the anode. 3rd. The process of direct extraction of haloid salts and their compound, especially chloride containing liquids perchlorides such as chloride of iron, chlorates and organic chlorides by the electrolysis of chloride of sodium and other haloid salts by means of depolarizing substances at the cathode and the circulation of the electrolyte at the anode. 4th. The application of the electrolysis of haloid preparation to the extraction of the noble and semi-noble metals. 5th. The process of extracting directly oxyhalates and sulpho-drates and their salts by electrolysis of chloride of sodium and other haloid salts by using depolarizing substance at the cathode.

No. 19,493. Axle Skein. (*Douille d'Essieu.*)

The Illinois Iron and Bolt Company, Carpenterville, Ill., (Assignee of Albert H. Southworth, Lockport, N.Y., U. S.) 31st May, 1884; 5 years.

Claim.—An axle skein of wrought metal, in combination with a sleeve, collar or yoke cast thereon, substantially as and for the purpose described.

No. 19,494. Hot Air Furnace. (*Calorifère à Air.*)

Peter H. Sims and Philip Hohmeier, Waterloo, Ont., 31st May, 1884; 5 years.

Claim.—1st. A coal hot air furnace, consisting of the conical fire pot D, having a flaring flange *d*, supporting at its outer edge a cylindrical casing E, joined at the top by a ring-shaped plate E₁, which supports a smaller cylindrical casing E₂, parallel to the casing E and terminating in a conical flange *e*, parallel to the larger conical flange *d* and connected thereto by a series of air tubes D₁, the lower and inner edge of said conical flange *e* supporting the cylindrical central feed tube F, projecting at the top and provided with a circular channel E₂ to receive the dip flange of the cover F₁, the annular space between the cylinders E and E₂ provided with a spiral plate E₃ forming a spiral flue communicating at its highest point by means of a pipe H and branches H₁ and H₂ with the tube drum G G₁ surrounding the cylindrical casing E, and containing one or more series of vertical air tubes G₂, and being divided by a partition G₃ placed between the inlet from the pipe H₂, and the outlet into the pipe H₁, divided from the branch H₄ with the egress portion of the pipe H₁, divided from the ingress part by a damper *h*, the said annular tube drum *a* and top pot enclosed in a main casing A, provided with air inlet A₂ and top plate A₁, having one or more hot air outlets, also with containing conical circularly ended boxing B supporting the fire-pot and closed by a door B₁ having draft regulator B₂, a water pan supported on top of said boxing, and a boxing or duct J communicating with the upper part of the fire pot and closed by a door or casing J₁. 2nd. In a self-feeding, coal-fired, hot air furnace, the combination of the spiral flue contained in an annular space formed by two cylindrical casings closed at the top and providing an outlet by means of pipes, either direct in the chimney or in an annular drum containing a number of vertical air tubes, said drum surrounding the spiral flue case and provided with a partition between the inlet and outlet. 3rd. The combination of the annular tube drum G G₁, closed at top and bottom, and pierced by one or more rows of vertical air tubes G₂, said drum surrounding the central spiral flue and communicating therewith by the pipes H₁, H₂ and H₃, the inlet separated by the vertical G₃ from the outlet pipe H₃. 4th. The combination of the vertical pipe H projecting at the top and closed by a cover *h*, a horizontal branch H₁, with damper *h*, to force the draft through the branch H₂ into the annular tube drum G G₁, having a vertical partition G₃ and discharging the draft at the other side of the said partition by a pipe H₃, provided with check-damper *h*, and the upward branch pipe H₄ into the discharging end of the pipe H₁. 5th. The combination of the conical fire-pot D, having a flaring flange *d* supporting a cylindrical casing E, closed at the top by a ring-shaped plate E₁, and parallel conical flange *e* terminating below by a conical flange *e* parallel to the casing E and pierced by radially-inclined pipes D₁, said flange *e* supporting the central feed tube F. 6th. The fire-pot D, supported in the circular opening of the circularly-ended boxing B₁, the box-the mouth by a door B₁, provided with draft regulator B₂, the box-the mouth by a door or cover J₁ communicating direct with the fire-pot. 7th. The combination of the main cylindrical casing A, having fire-pot D, and draft regulator B₂, door C₁, giving access to water-pan duct J, with door J₁ communicating with fire-pot central opening at the top to feed tube F, provided with circular channel E₂, filled with fine sand to receive the dip flange of the cover F₁, projecting pipe H provided with cover, and the smoke outlets H₁ and H₂ connected by a branch H₄. 8th. The combination, with the feed tube F, of a circular channel F₂ filled with fine sand and receiving the dip flange of

the cover *F* to prevent escape of gas from the feed tube, all substantially as described and for the purpose set forth.

No. 19,495. Flange for Pots, Kettles, &c.

(Rebord pour Marmites, Bouilloires, &c.)

Virgil L. Wilson, Boston, Mass., U.S., 31st May, 1884; 5 years.

Claim.—1st. As a new article of manufacture, a metallic flange having the curved body *A*, provided with the projecting lip *B* having the straight edge *Z*, said flange being adapted to be attached to a pot, kettle, or other vessel, substantially as and for the purpose set forth. 2nd. In a flange, substantially such as described, and having the curved body *A* and projecting lip *B*, the relate or shoulder *m*, substantially as and for the purpose specified. 3rd. As a new article of manufacture, a galvanized or tinned flange having the curved body *A* provided with the holes *f*, shoulder *m* and projecting lip *B*, constructed and arranged, substantially as set forth. 4th. As a new article of manufacture, the improved flange, herein described, the same consisting of the curved body *A* and lip *B*, cast integral or formed in one piece, and provided with the shoulder *m*, holes *f* and straight edge *Z*, substantially as specified.

No. 19,496. Sewing Machine. (Machine à Coudre.)

Thomas C. Robinson, Boston, and E. B. Welch, Cambridge, Mass., U.S., 31st May, 1884; 5 years.

Claim.—1st. A sewing machine, having two presser feet, one in advance of the other, each having an independently yielding movement, and an elongated feed dog adapted to co-operate with both presser feet, as set forth. 2nd. A sewing machine, having two presser feet, one in advance of the other, each having an independently yielding movement, an elongated feed dog adapted to cooperate with both presser feet, and a binder or folder located between the presser feet, as set forth. 3rd. A sewing machine, having two presser feet, one in advance of the other, each having an independently yielding movement, an elongated feed dog adapted to co-operate with both presser feet, and an automatic trimmer located near the forward presser foot, as set forth. 4th. A sewing machine, having two presser feet, one in advance of the other, each having an independently yielding movement, an elongated feed dog adapted to co-operate with both presser feet, a trimmer located near the forward presser foot, and a binder located between the presser feet, as set forth. 5th. The combination, with the stitch forming mechanism of a sewing machine, of a binder located in advance of the usual presser foot and auxiliary presser foot in advance of the delivering end of the binder, and an elongated feed dog adapted to co-operate with both presser feet, and raised at one end to correspond with the raised bed, as set forth. 6th. The combination, with the trimmer, of the binder having the guard or flange *Z*, whereby the material removed by the trimmer is prevented from entering the binder, as set forth. 7th. In a sewing machine, a trimmer knife connected to a vertically reciprocating bar by an adjustable offset arm or bracket, whereby the knife can be adapted to different throat plates, as set forth. 8th. The combination, with a slotted throat plate, of a vertically reciprocating knife bar, a bracket adjustably attached to said bar, and a straight trimming knife secured to said bracket, and thereby offset from the knife bar and made laterally adjustable with relation to the slot in the throat plate, as set forth. 9th. The combination, with a vertically reciprocating trimming knife, of a raised throat plate containing the entire slot into which the knife passes in its downward movement, as set forth. 10th. A sewing machine, provided with a shearing blade fixed to the bed, a reciprocating blade, and the adjusting device therefor, carried by an independent rigid stationary support and bearing upon the reciprocating blade, all as set forth. 11th. The movable blade, having an aperture or recess *b*₂ adapted to coincide with the eye of the needle, as set forth.

No. 19,497. Hay Carrier. (Monte-Foin.)

Lewis C. Chase and Clark Hewett, Waupim, Wis., U. S., 31st May, 1884; 5 years.

Claim.—1st. A reversible latch pivoted in a recess in the track of a hay carrier, its lower edge projecting below the point of an engaging hook pivoted in the car, and presenting to said hooks an inclined surface terminating in a shoulder adapted to engage, lift and lock the

same, or allow it to pass under when reversed. 2nd. A double hook *H* having a curved lever portion *h* adapted to engage a slot in the extended stem of a pulley block, and an upper barbed portion *h*₁ adapted to strike the inclined surface of a latch projecting below the point of the hook, and to slide up said surface and engage the upper edge of the said latch, said hook pivoted out of the line of the stem of the pulley block when rising and adapted to be struck at its underside, thereby disengaging its upper barbed portion *h*₁ preparatory to the lower portion *h* disengaging the stem. 3rd. The combination of the recess *a* in the underside of a track *A*, a reversible latch *E* pivoted in said recess, a double hook *H* pivoted in a car suspended from said track *A* and adapted to engage with its upper barbed portion *h*₁, the upper edge of the latch *E*, the roof of the recess *a* shaped to force the hook *h* downward and after disengagement from the latch *E* to force its lower curved portion *h* into the slot *d* of the stem *D* of the pulley block has been raised and struck the shank of the said hook. 4th. The combination of the flanged track *A*, supporting a suspended car *B* travelling thereon, and having a hook *H* pivoted therein adapted to engage with its upper barbed portion *h*₁, a reversible latch *E* pivoted in a recess *a* in the track and thereby lock the car in place or to pass said latch when reversed, the lower curved portion *h* of the hook adapted to engage the stem of a pulley block entering a cavity in the car when raised and striking the underside of the hook *H*, thereby disengaging the upper portion of the hook, all substantially as described and for the purpose set forth.

No. 19,498. Process for Treating Milk.

(Procédé de Traitement du Lait.)

George Laurence, London, Eng., 31st May, 1884; 5 years.

Claim.—The process of treating milk with fatty and other matters, by passing it and them mingled with gases, through one or more steam ejectors for separating and mixing the particles, substantially as described and for the purposes set forth.

No. 19,499. Roller Mill. (Laminoir.)

Daniel W. Marmon, Indianapolis, Ind., U.S., 31st May, 1884; 5 years.

Claim.—1st. The combination, in a roller mill, of the arms *D*, the rods *G*, the bell-crank levers *G*₁, the connecting-bar *H* and means for operating the same, substantially as shown and specified. 2nd. The combination of the arms *D*, the arm-operating rods *G*, the bar *H* for connecting said rods and the device *I* having cam-shaped portion *i*, whereby said bar is given a reciprocating movement and said rods are all operated simultaneously, substantially as set forth. 3rd. The combination, in a roller mill, of the swinging arms *D*, the rods *G*, the bell-crank levers *G*₁ and the bar *H*, said bell crank levers being pivoted to the frame-work by pivots and to said rods by pivots *g*₁, and connected together by said bar, as specified, whereby a movement of the long arms thereof at opposite ends of the same roll in the same line and same direction acts to move the rods *G* and arms *D* at opposite ends of the same roll simultaneously to or from the fixed roll, substantially as set forth. 4th. The combination, with the hopper and feed-gate, of the stops *J*₂ and the arms *J*₁, the surfaces whereof come in contact and are in effect non-yielding during the normal action of the machine, but which are constructed to yield upon the application of additional force, and to return to their normal position when said additional force is withdrawn, substantially as set forth. 5th. The combination of the hopper, the feed gate, its arms *J* having springs *J*₁, the stop surfaces and stops *J*₂, substantially as described and for the purposes specified. 6th. The combination in a roller mill, of the frame-work, the roll-shafts, the counter-shaft, belts connecting pulleys on the same, the journal boxes of said counter-shaft screw-rods or shafts connecting said journal-boxes to supporting bearings on said frame-work, means for connecting said rods or shafts together, and means for driving the same, whereby said screw-rods may be simultaneously operated and said counter-shaft thus moved nearer to or farther from the roll-shafts, substantially as described and for the purposes specified. 7th. The combination, with the counter-shaft, of an adjusting mechanism consisting of the devices *H*, the rods *O* and mechanism connecting said rods together, whereby they are operated simultaneously, all substantially as set forth. 8th. The combination, with the counter-shaft *M*, of an adjusting mechanism consisting of the devices *N*, the rods *O* and the shaft *P*, said rods bearing gearing wheels *O*₁, and said shafts bearing gear-wheels *P*₁, whereby they are connected together and thus adapted to be operated simultaneously, substantially as set forth.

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

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| <p>206. M. LEES, 2nd 5 years of No. 9932, from 1st day of May, 1884. Improvements in Gas Pressure Governors, 1st May 1884.</p> <p>207. J. NEFF, 2nd 5 years of No. 9983, from 26th day of May, 1884. Improvements on Rock Drills, 7th May, 1884.</p> <p>208. E. B. EDDY, (assignee) 2nd 5 years of No. 9958, from 12th day of May, 1884. Improvements on Wash Boards, 10th May, 1884.</p> <p>209. F. CROMPTON, (assignee) 2nd 5 years of No. 10,078, from 7th June, 1884. Improvements in the Manufacture of Corsets and Bosom Pads, 10th May, 1884.</p> <p>210. G. E. GRAY and C. W. M. SMITH, 2nd 5 years of No. 9973, from 17th May, 1884. Improvements on Spiral Springs for Railway Cars, Carriages and other like purposes, 10th May, 1884.</p> <p>211. D. BICKFORD, 3rd 5 years of No. 3454, from 19th May, 1884. Improvements on Family Knitting Machines, 15th May, 1884.</p> <p>212. J. H. GOWAN, 2nd 5 years of No. 10,094, from 13th June, 1884. Improvements on Machine for Grinding Car Wheels, 17th May, 1884.</p> <p>213. R. N. HAVERS and K. G. GEACH, 2nd and 3rd 5 years of No. 10,104, from 13th June, 1884. Improvements on the method of and Apparatus for Cutting Chenille Cloth, 21st May, 1884.</p> | <p>214. J. M. ALLEN, 3rd 5 years of No. 3569, from 15th June, 1884. Improvements on the Art or Process of Making Paper Pulp and Paper, 21st May, 1884.</p> <p>215. J. G. MALCOLM, 2nd 5 years of No. 9998 from 27th May, 1884. Refrigerator, 26th May, 1884.</p> <p>216. W. M. MOONEY, (assignee), 3rd 5 years of No. 3490, from 28th May, 1884. Improvements on Horse-Shoe Nail Machines, 27th May, 1884.</p> <p>217. W. B. MACK, 2nd 5 years of No. 10,026 from 28th May, 1884. Improvements on Injections for Boilers, 28th May, 1884.</p> <p>218. E. H. ASHCROFT, 2nd 5 years of No. 10,211, from 9th July, 1884. Improvements on Boilers for Locomotive or Stationary Steam Engines, 28th May, 1884.</p> <p>219. G. B. CORNELL, 3rd 5 years of No. 3681, from 20th July, 1884. Improvements in Wrenches for Inserting Bung Bushes, 31st May, 1884.</p> <p>220. G. B. CORNELL, 2nd 5 years of No. 11,524, from 21st July, 1884. Improvements in Bung Bushes and the Application of the same to the Bung Holes of Barrels, Casks, &c., 31st May, 1884.</p> |
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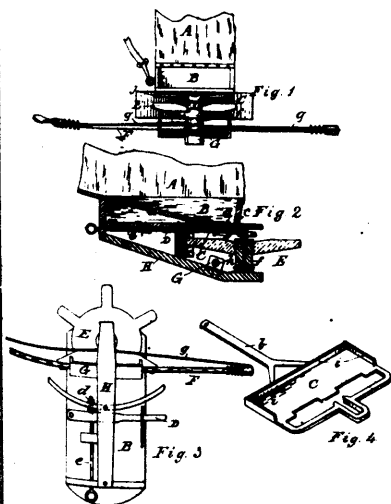
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

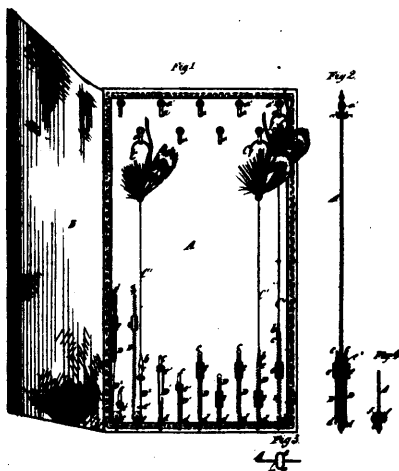
Vol. XII.

JUNE, 1884.

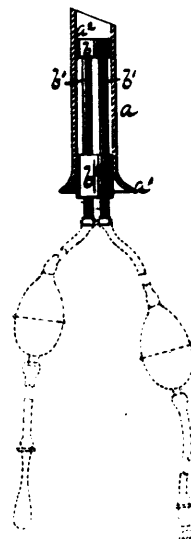
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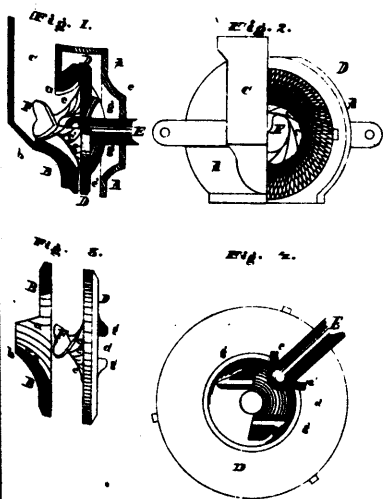
19272 Shrook & Lehman's Hand Broadcast Seed Sower.



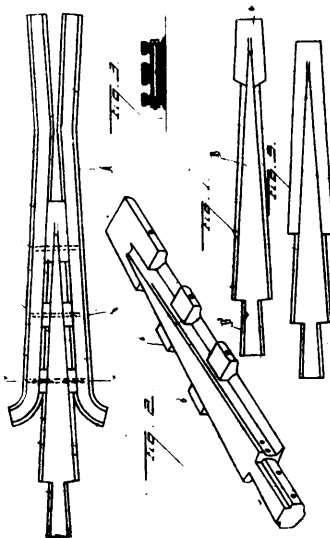
19273 Levison's Fly Book.



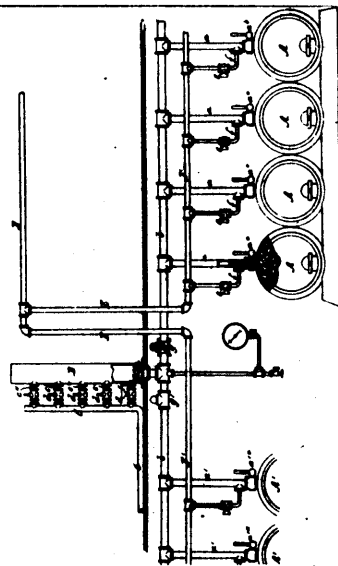
19274 Hawley's Vaginal Syringe.



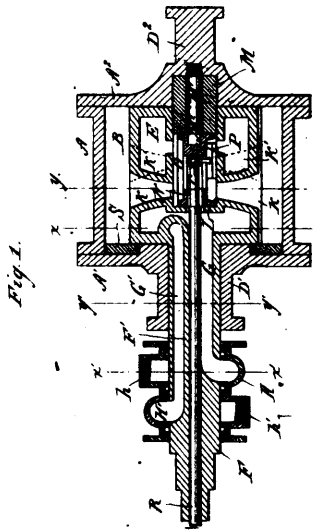
19275 McLaughlin's Ames Feed Grinding Mill.



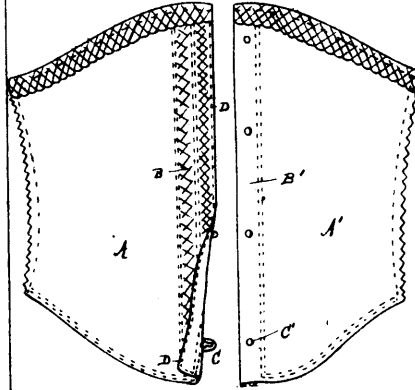
19276 Morden's Railway Frog.



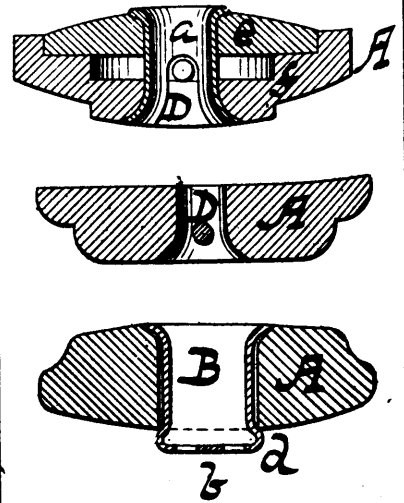
19278 Pflander's Process and Apparatus for Preparing Beer, &c.



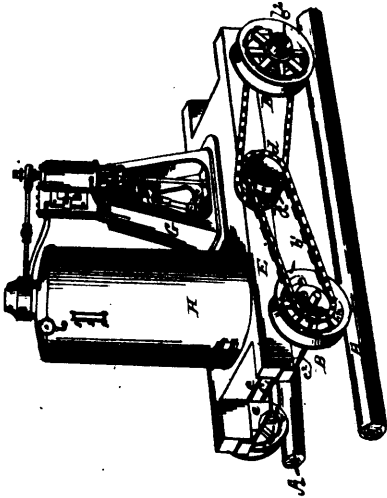
19280 Blair's Revolving Cylinder Engine.



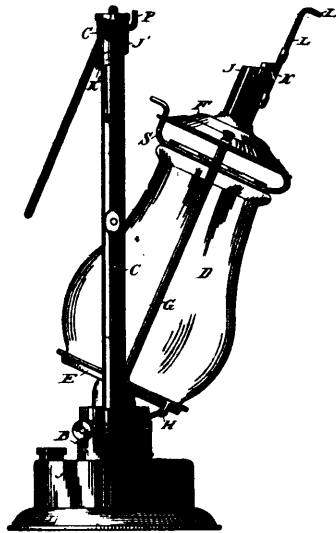
19281 Whaples' Attachment for Dress or Bodice Fronts.



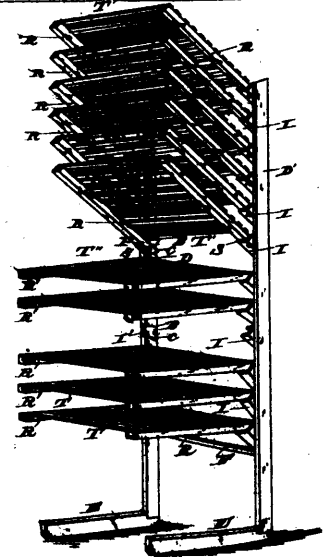
19282 Bird's Button.



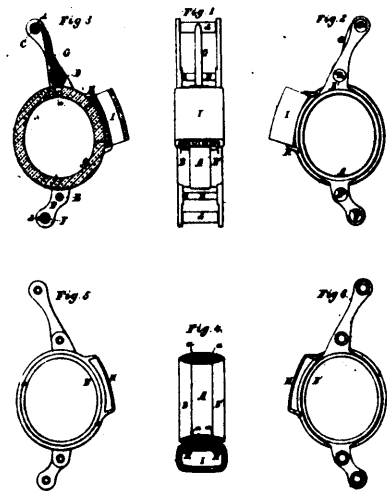
19283 Cole's Locomotive.



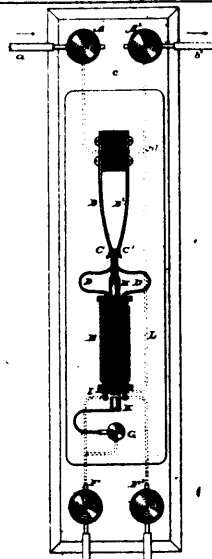
19284 Stetson's Lantern.



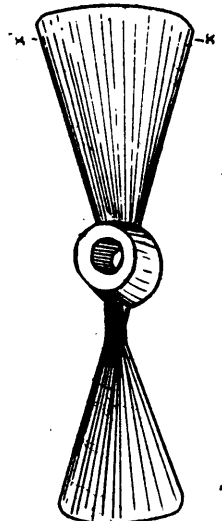
19285 Clapper's Printer's Dry Rack.



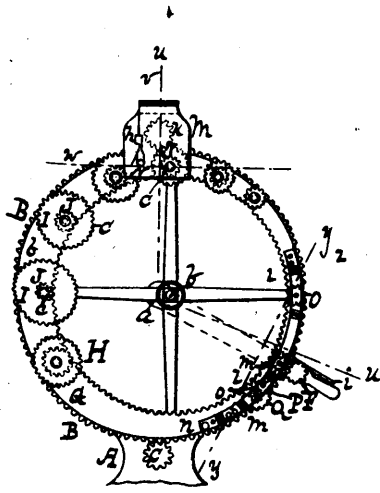
19286 Eastman's Carriage Shaft Supporter.



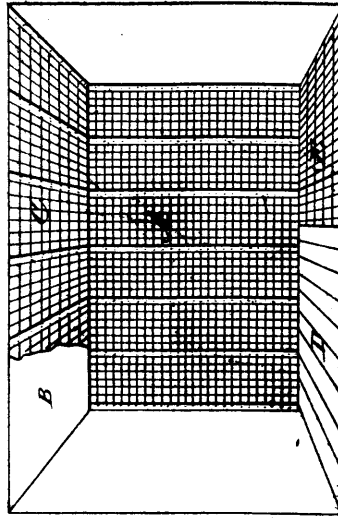
19287 Thomas' Cut-out for Electric Circuits.



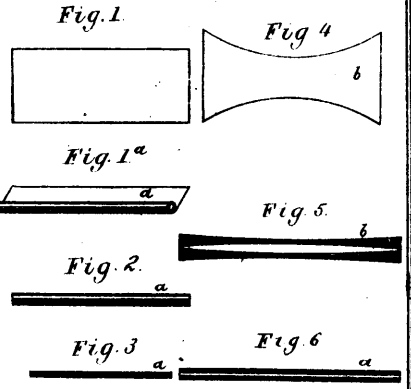
19288 Pearsons' Propeller Wheel.



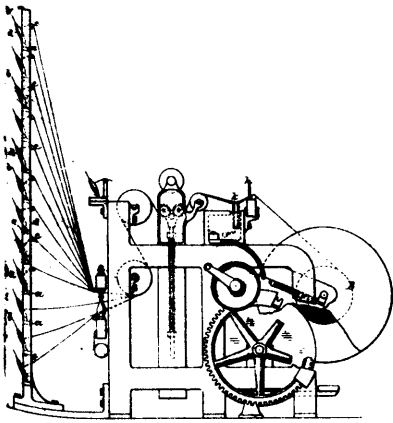
19780. Powell's Speed Changing Mechanism.



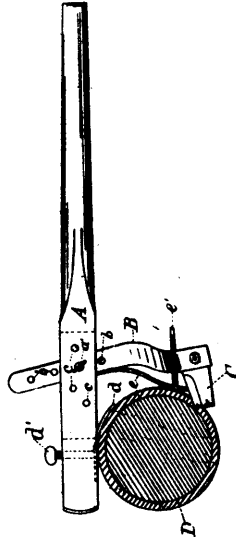
19291. McCarroll's Application of Wire Gause in Floors, &c.



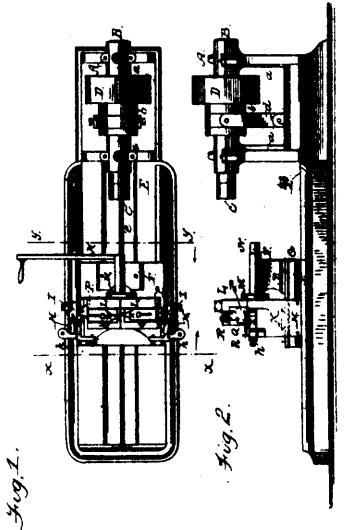
19293. Bernstein's Process for Manufacturing Carbons for Electric Lamps.



19294. Carr's Mechanism for Warping, Spooling and Recopping Yarn Directly from Cops.



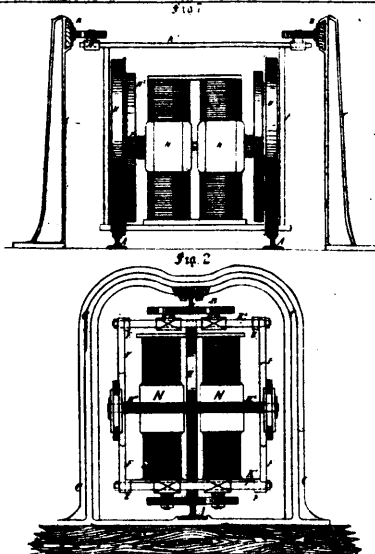
19295. Daigneau's Bark-Cutter.



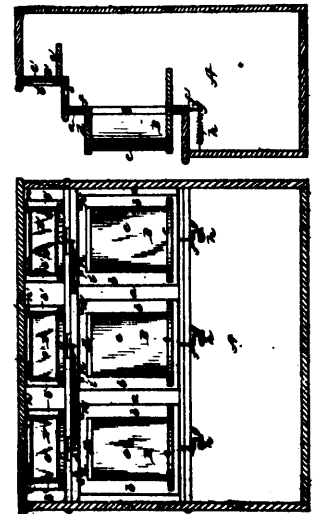
19297. Coy's Machine for Threading the Points of Lag-Saws.



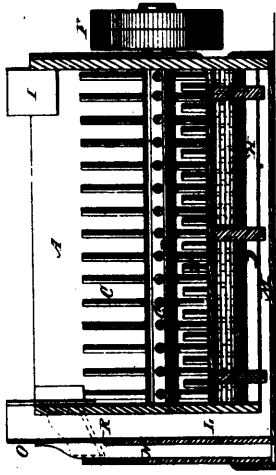
19298. Brimer's Automatic Grain and Water Elevator.



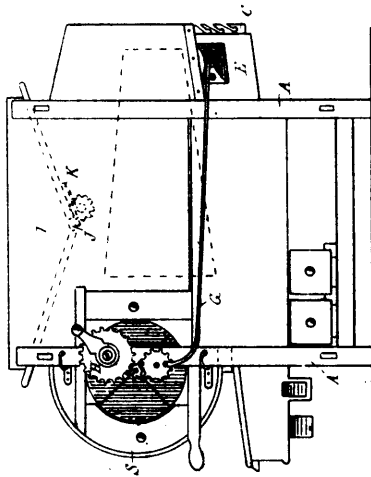
19299. Dauchell's System of Electric Railway.



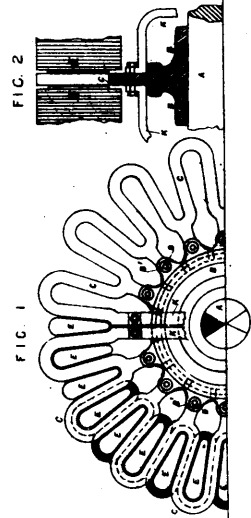
19300. Whitman's Refrigerator or Butter Cooler.



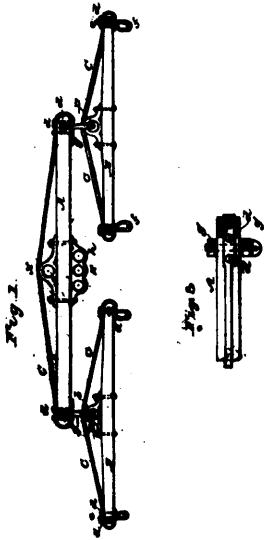
19301 Quirin's Pulp and HairWashing Machine.



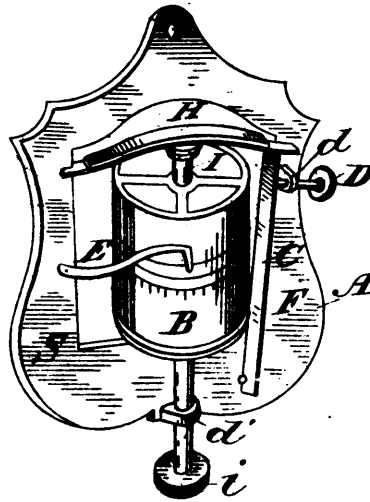
19302 Devens' Fanning Mill.



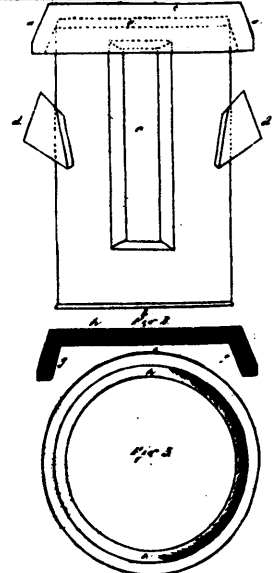
19303 De Ferranti & Thompson's Dynamo-Electric Machine or Electric Generator.



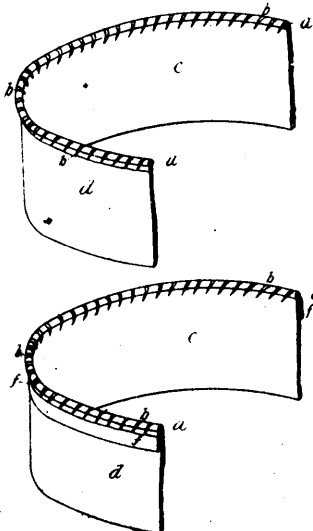
19304 Greens' Whiffletree.



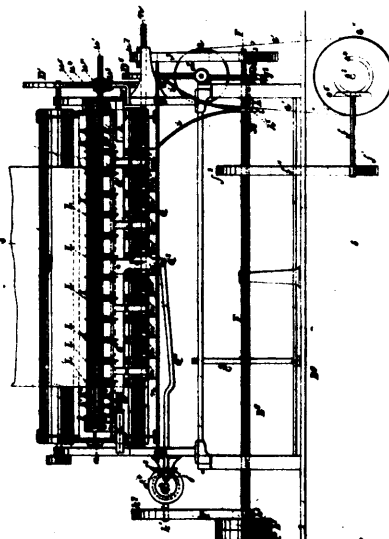
19305 Greenleaf's Compensating Pendulum.



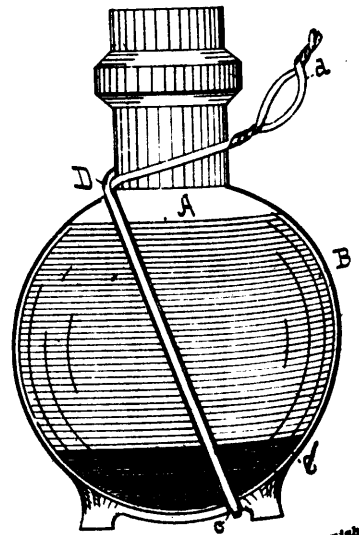
19306 Klein's Milk Can.



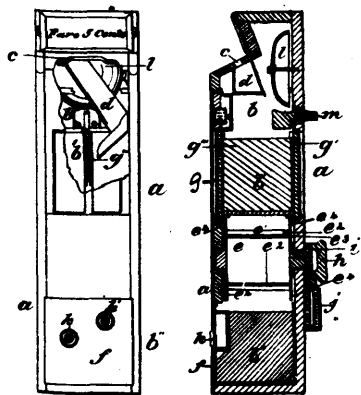
19307 Bracher's Hood and Hat Sweat.



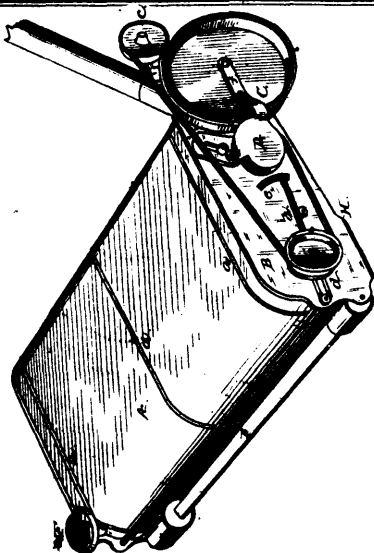
19308 Coupland's Apparatus for Cutting Pile Fabrics.



19309 Harden's Hand Grenade for Extinguishing Fires.



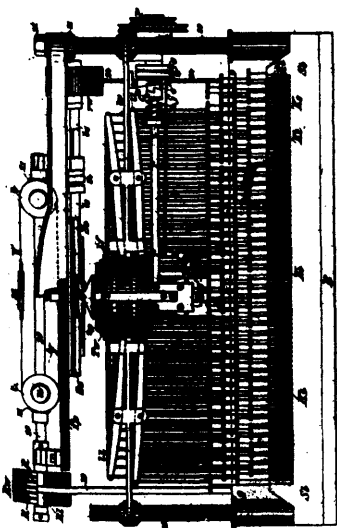
18810 Stewart's Fare Box.



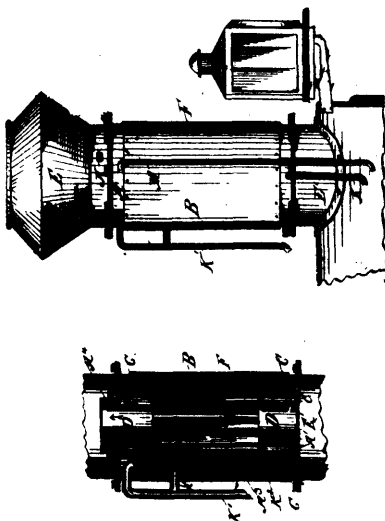
18811 Zeigler's Carpet Sweeper.



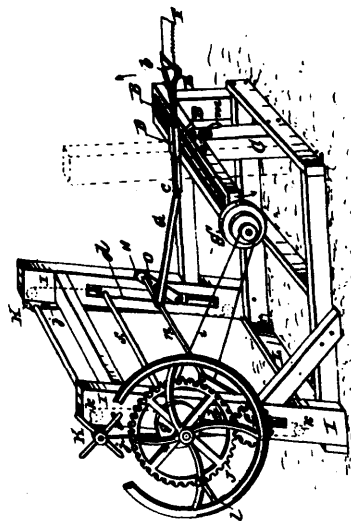
18812 Humphreys' Decoy Duck.



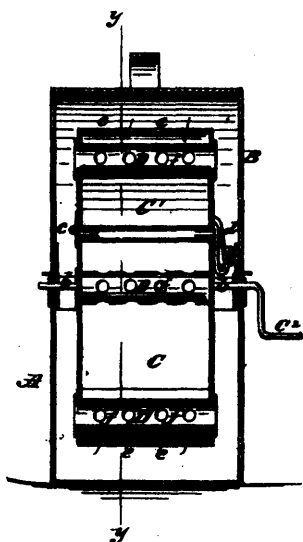
18813 David's Improvements in Typography.



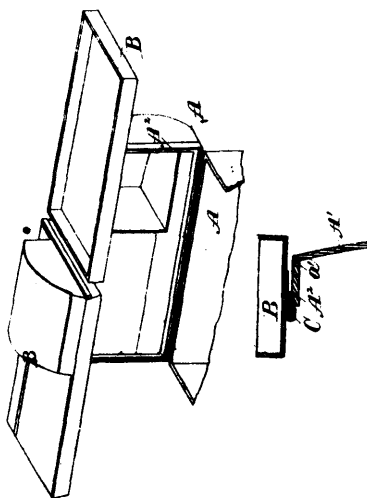
18814 Armstrong's Smoke Stack and Feed Water Heater.



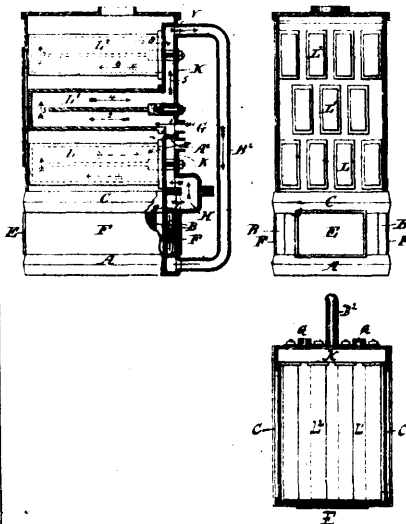
18815 Olsen's Sawing Machine.



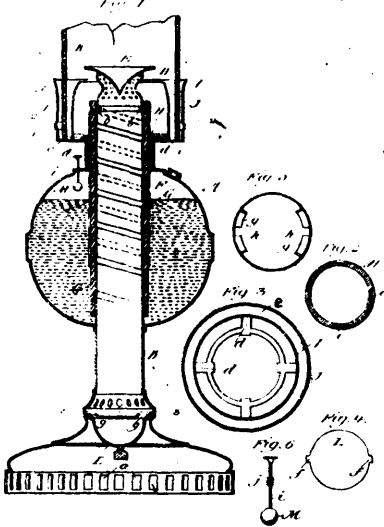
18816 Ferris' Washing Machine.



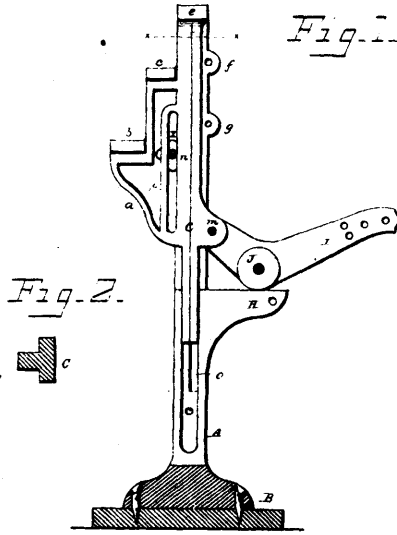
18817 Michelson's Trunk Tray.



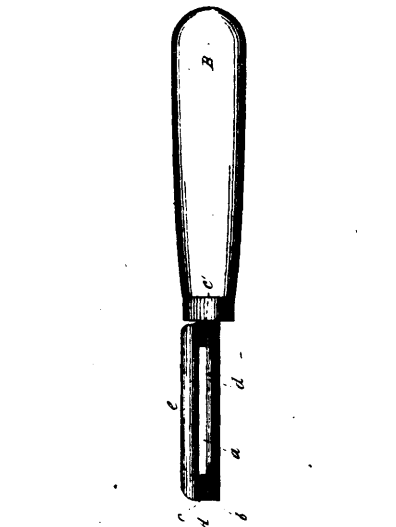
18818 Spence's Sectional Boiler.



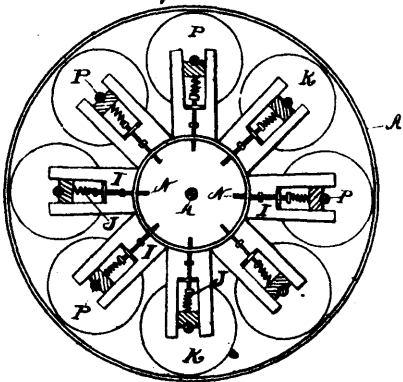
19319 Thayer's Lamp.



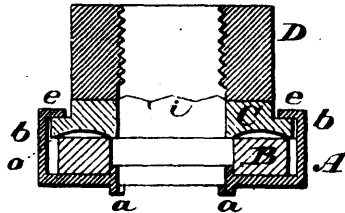
19320 Maxon's Waggon Jack.



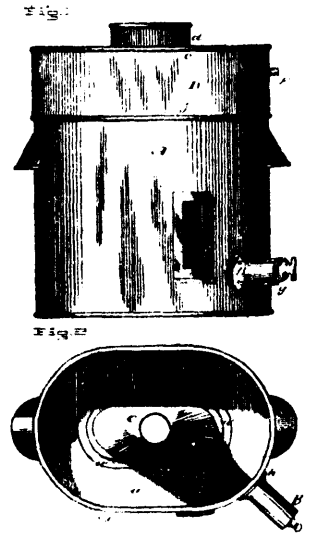
19322 Brock's Fruit and Vegetable Parer and Slicer.



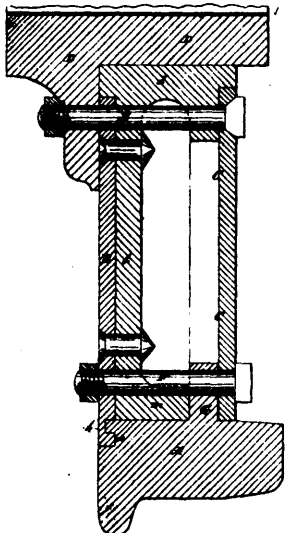
19323 Pond's Process and Apparatus for Manufacturing Paper Pulp.



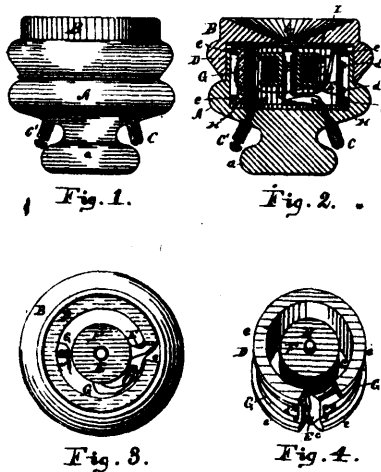
19326 Shallor's Nut Lock.



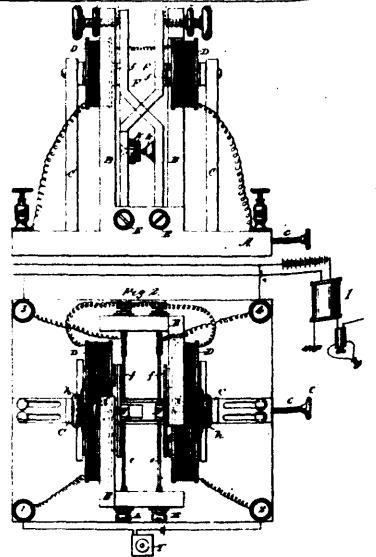
19327 Morrison's Creamer.



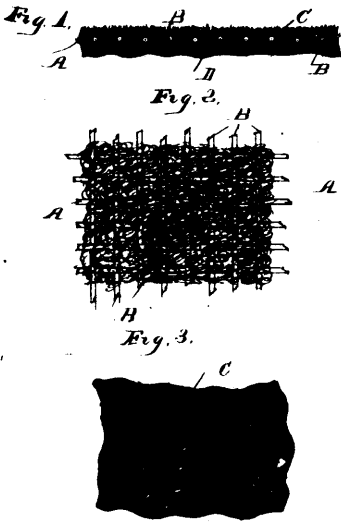
19328 Snow's Car Wheel.



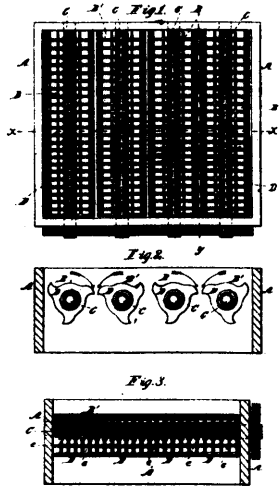
19329 Shaw's Telephone Receiver.



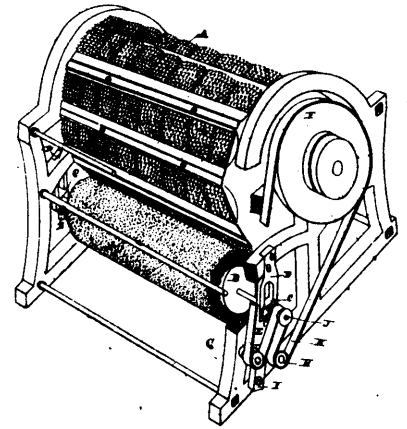
19330 Allen's Telephone.



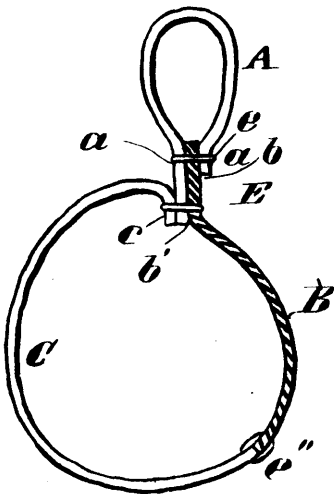
18331 Harral's Material for Covering Carriages.



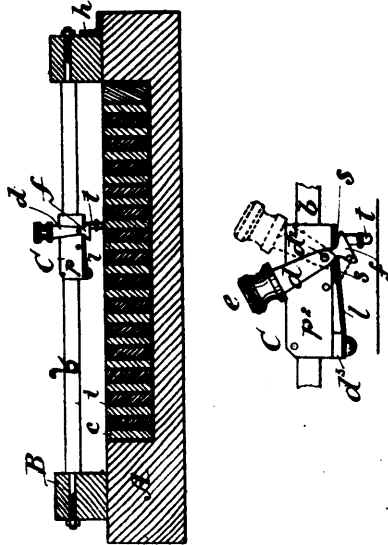
18332 Wright's Furnace Grate.



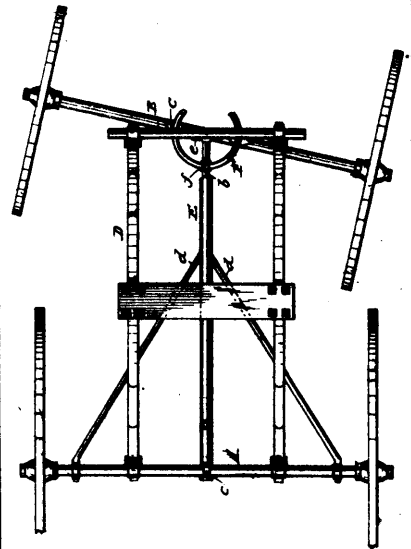
18333 Shearer's Gig for Napping Tweed, &c.



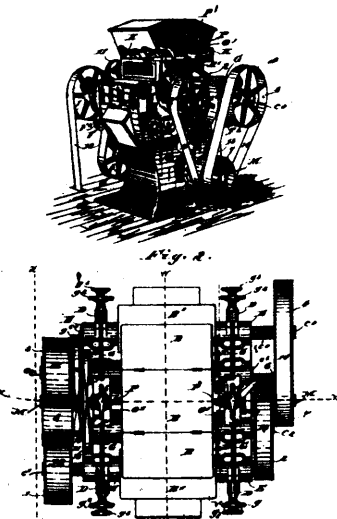
18334 Trautmann's Horse Collar.



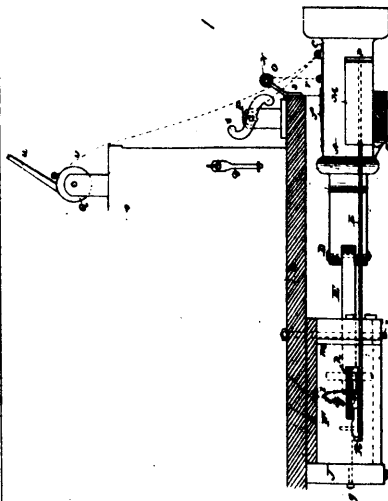
18335 Blake's Switch Board.



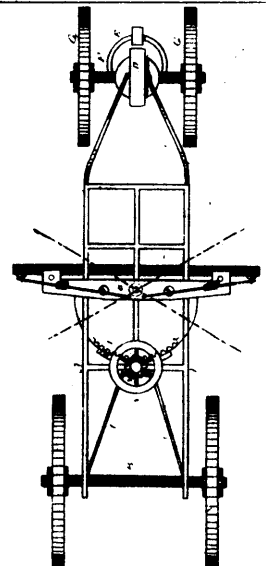
18336 Earl & Strat's Running Gear for Carriages.



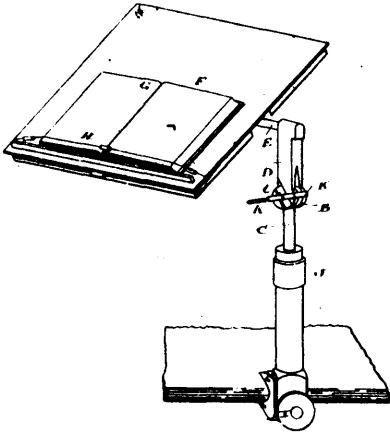
18338 Marmon & Warrington's Roller Mill.



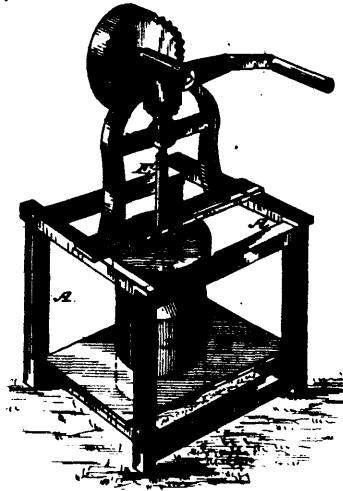
18339 Wright's Car-coupling.



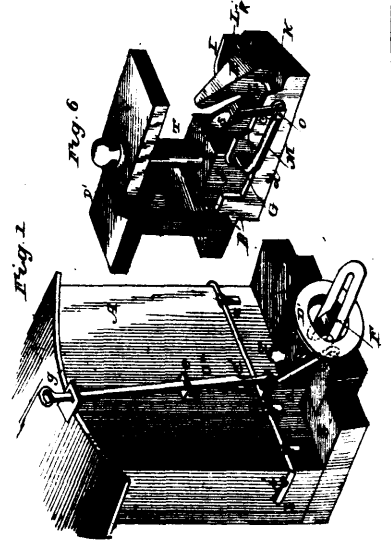
18340 Cook's Road-Scraper.



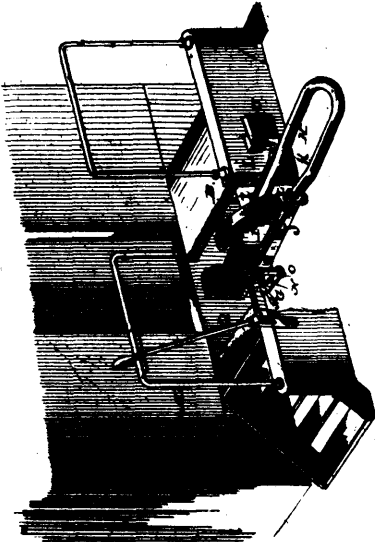
18341 Johannsen's Portable Adjustable Beading Desk.



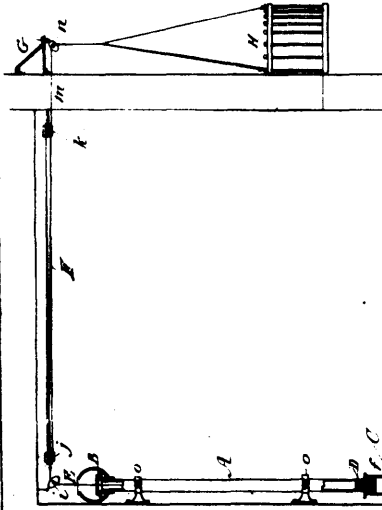
18342 Dyer's Churn.



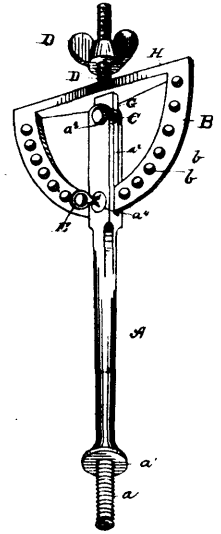
18343 McKeen's Car-Coupling.



18344 McKeen's Car-Coupling.



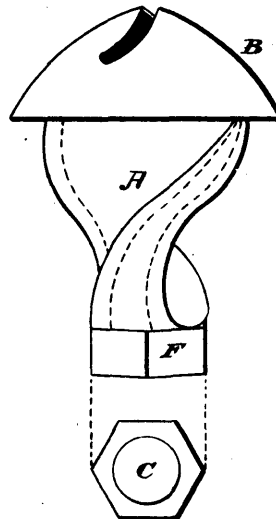
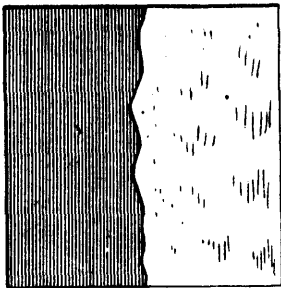
18346 Baker's Fire-Escape.



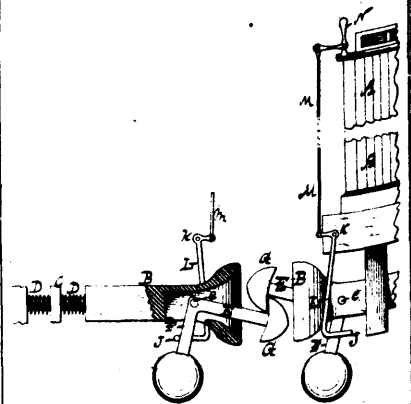
18346 Miller's Carriage Painter's Adjustable Jack.



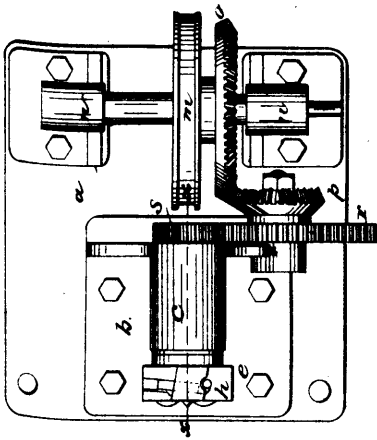
18347 Moller's Lithographic Printing Plate.



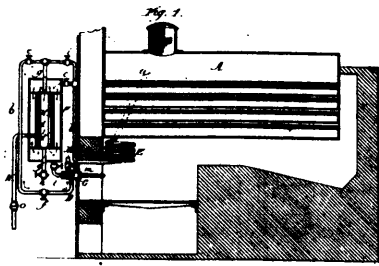
18348 Gerlach's Boiler Flue Cleaner.



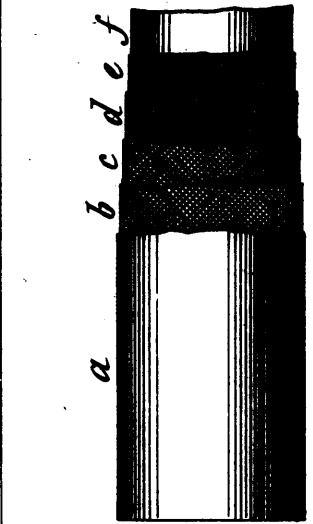
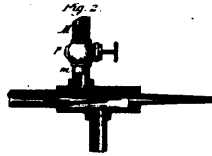
18349 Spencer's Car-Coupling.



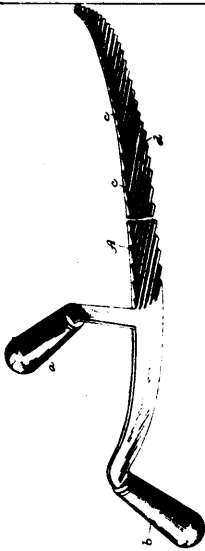
18360 Gray's Machine and Process for Spiralling Wire.



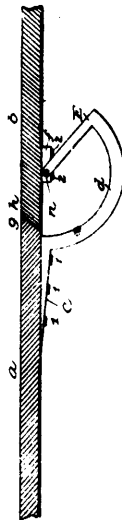
18351 McDonald's Hydro-Carbon Furnace.



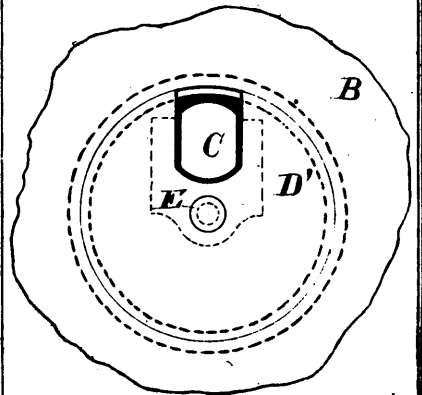
18352 Murphy's Hose.



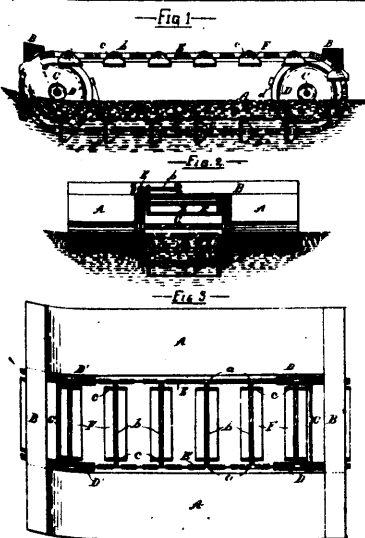
18363 Carter's Hay Knife.



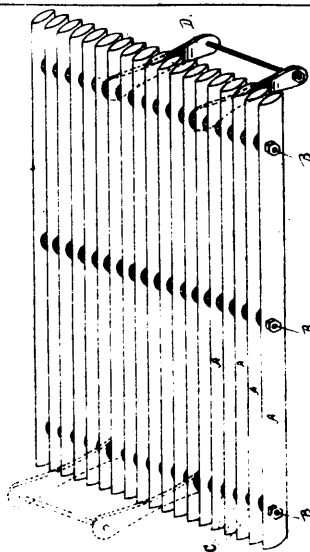
11354 Carter's Hinge.



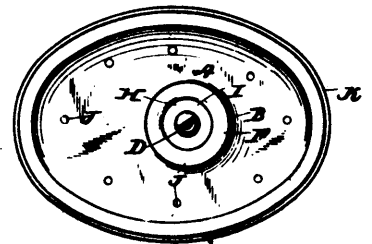
18355 Michelson's Trunk Castor.



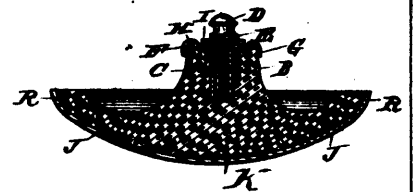
18366 Carre's Current Wheel.

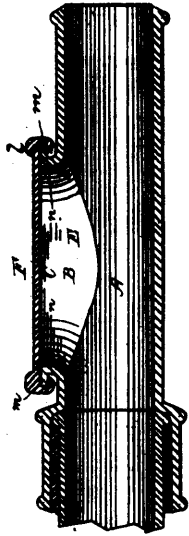


18357 Provenchar's Gas Purifying Screen.

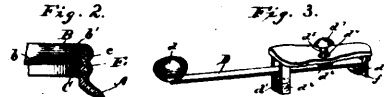
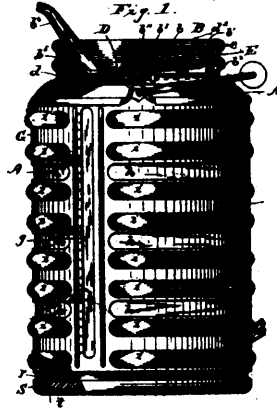


18368 Gerard's Truss Pad.

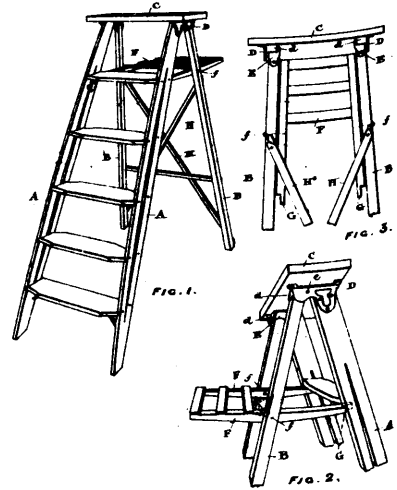




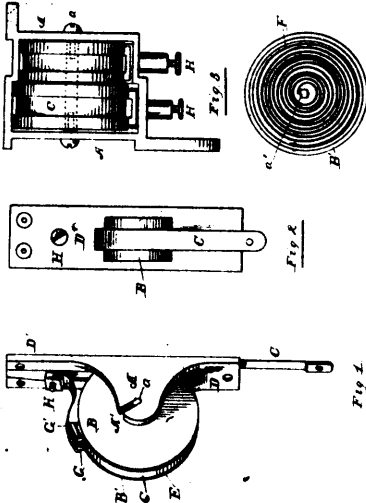
19359 Barrett's Soil and Waste Pipe.



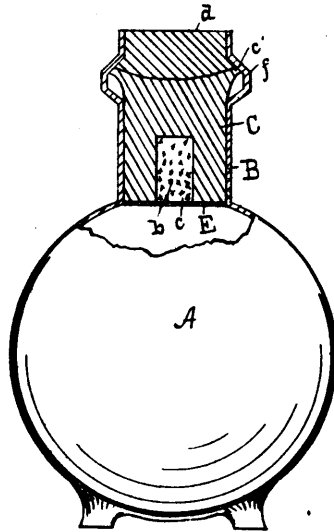
19360 Norris' Vessel for Containing and Transporting Liquids, &c.



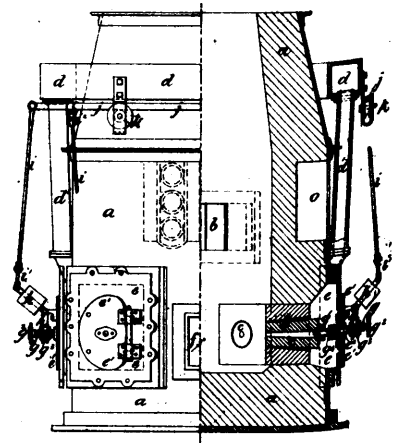
19361 McFarlane's Step Ladder.



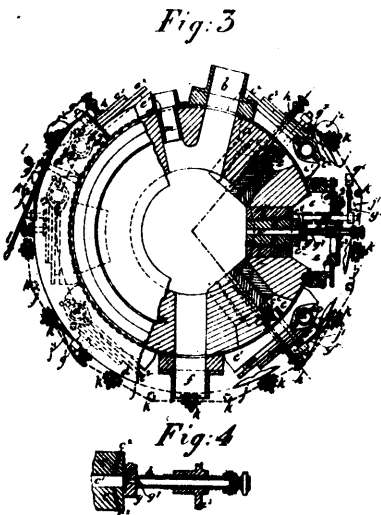
19362 Shumard's Sash Balance.



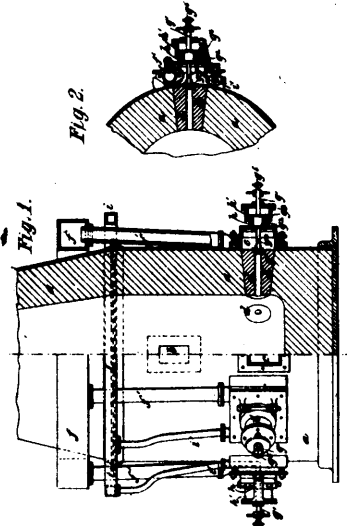
19363 Harden's Hand Grenade for extinguishing Fire.



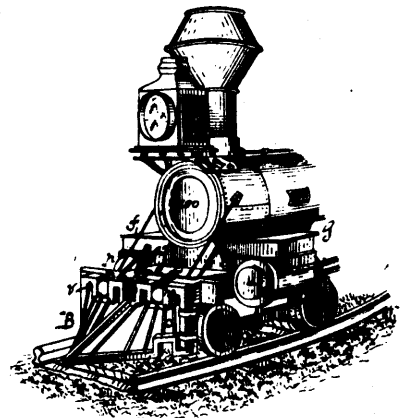
19364 Griffiths' Means or Apparatus employed in the Manufacture of Iron and Steel.



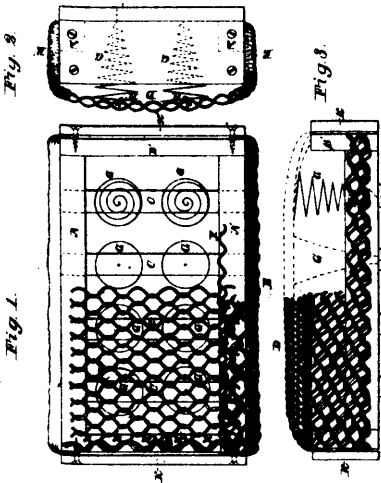
19365 Griffiths' Means or Apparatus employed in the Manufacture of Iron and Steel.



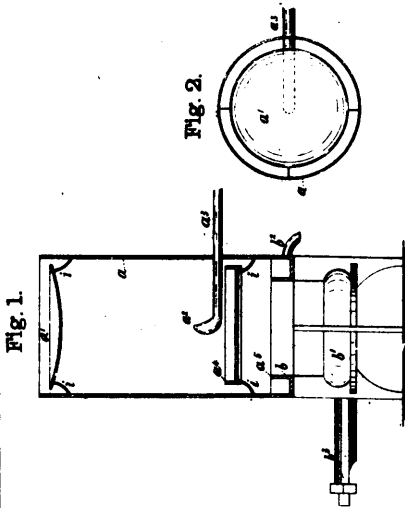
19366 Clapp & Griffiths' Means or Apparatus employed in the Manufacture of Iron and Steel.



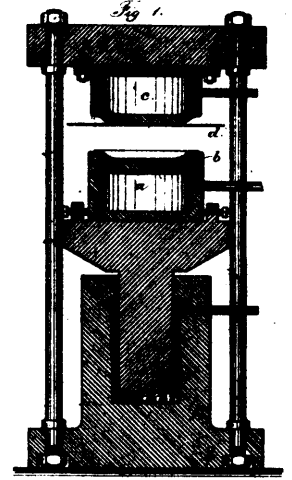
19367 Rothrock's Safety Device for Locomotive Pilots.



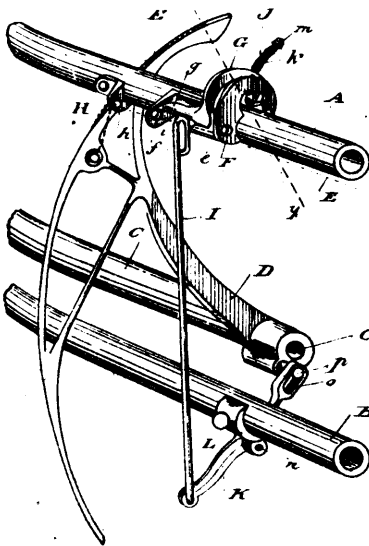
19368 Roberts' Woven Wire Seat.



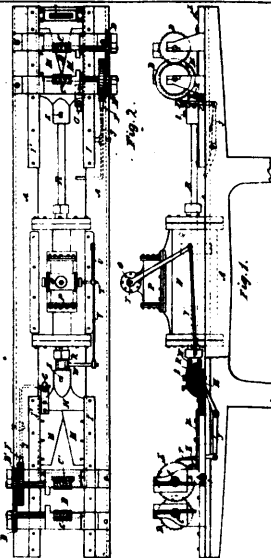
19369 Fletcher's Heating Water by means of Gas.



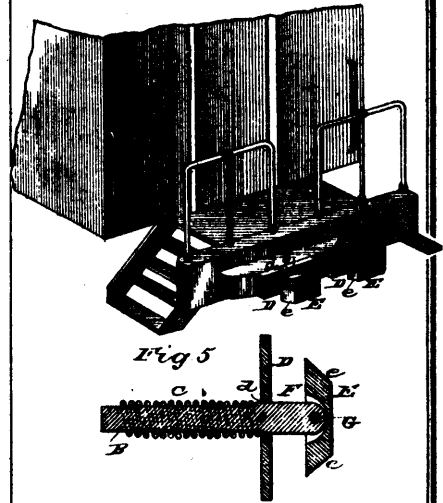
19370 Magowan & Bassett's Manufacture of Pottery.



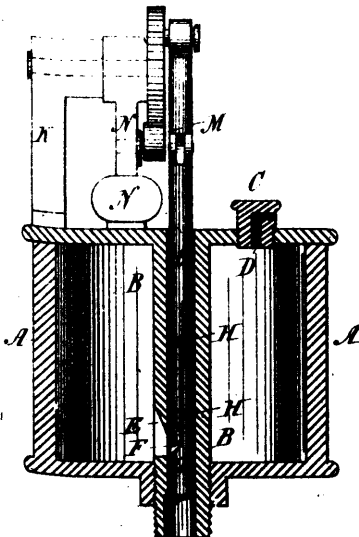
19371 Wedlake & Jones' Grain Binder.



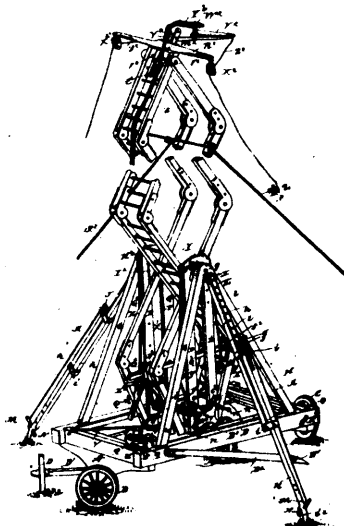
19372 Jones' Match Splint Cutting machine.



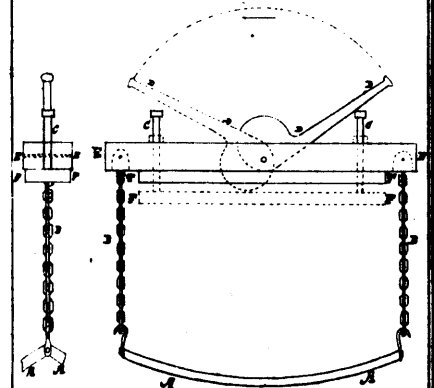
19373 McKeen's Buffer for Railway Cars.



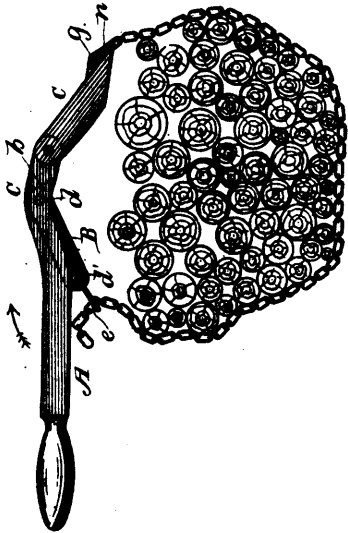
19374 Marathon's Reciprocating Valve Otter.



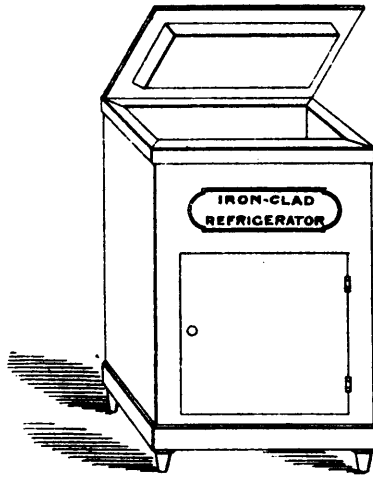
19375 Johnson's Fire-Escape.



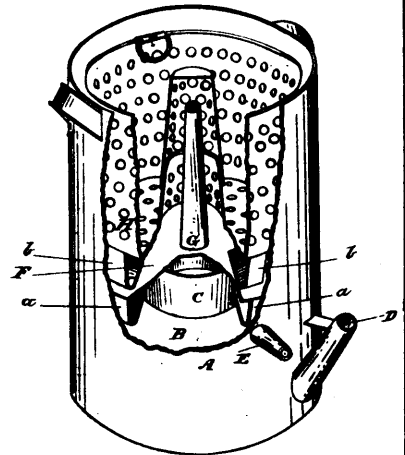
19376 Rand's Machine for Forcing the Ends of Barrels into place, when such Barrels are filled with Apples, &c.



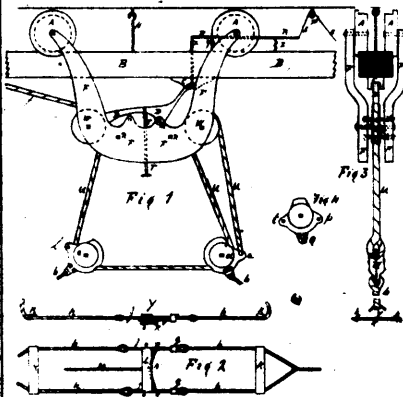
18377 Sealey's Lumber Binder.



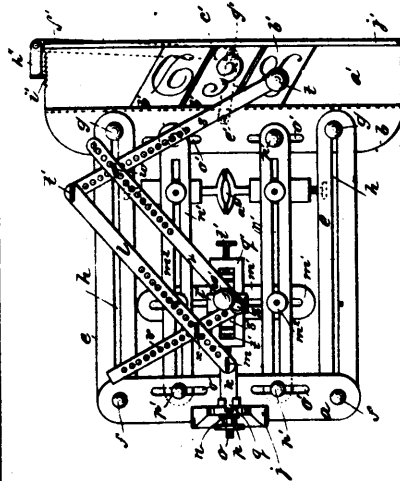
18378 McKensie's Refrigerator.



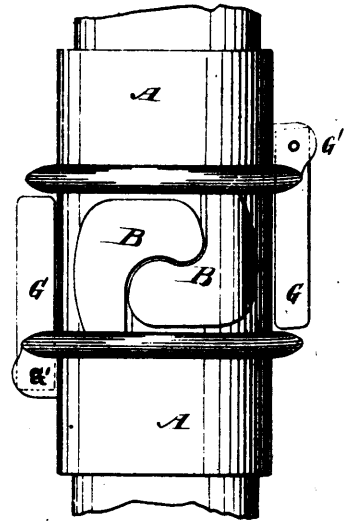
18379 Jones' Wax Extractor.



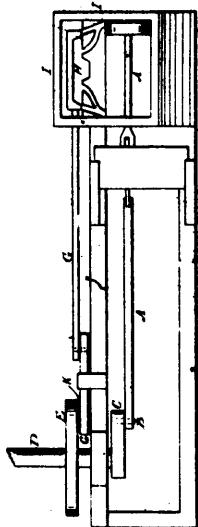
18380 Birrell's Hay Fork Car.



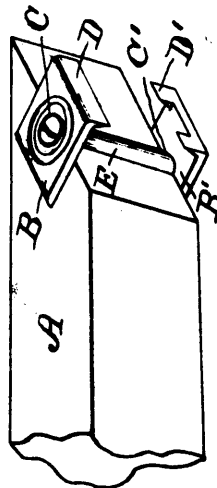
18382 Beam's Engraving Machine.



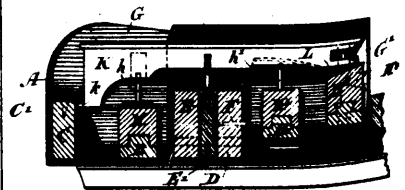
18383 Wells' Hose-Coupling.



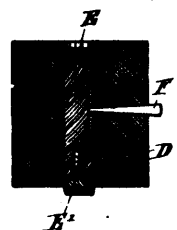
18384 Wisner's Steam Engine.

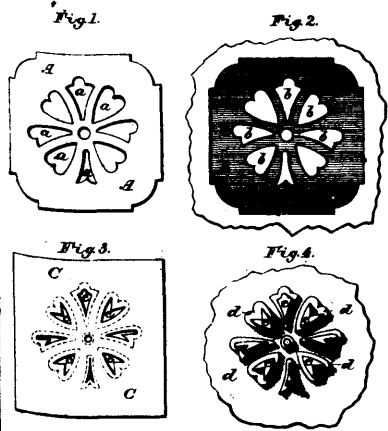


18385 Stuart's Corner Fastening for Frames.

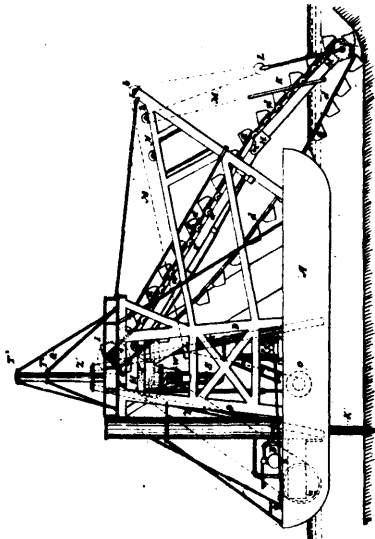


18386 Bohrer's Transposition Key Board for Pianos and Organs.

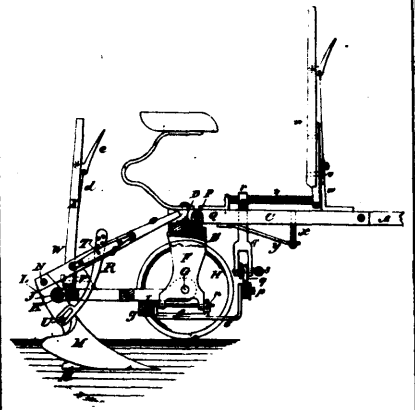




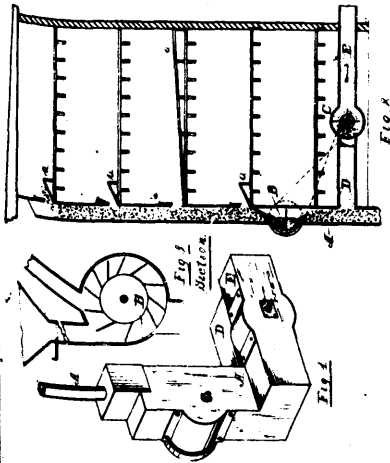
12887 Harding's Process for Ornamenting Walls, Ceilings, &c.



19388 Angell's Dredging Machine.



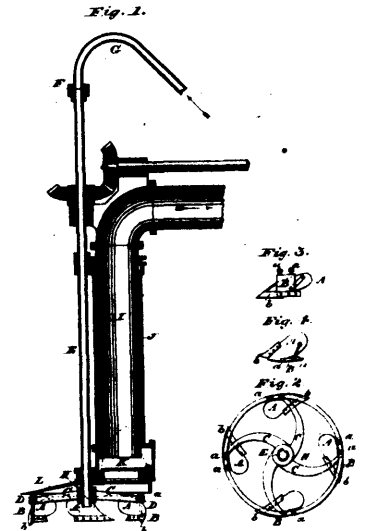
19389 King's Land Marker.



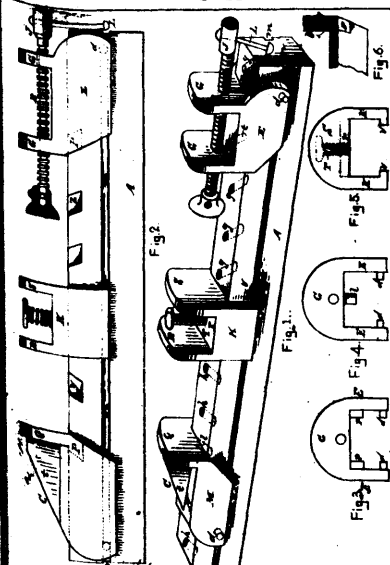
19390 Shaw's Gravitation Grain Cleaning and Cooling Apparatus.



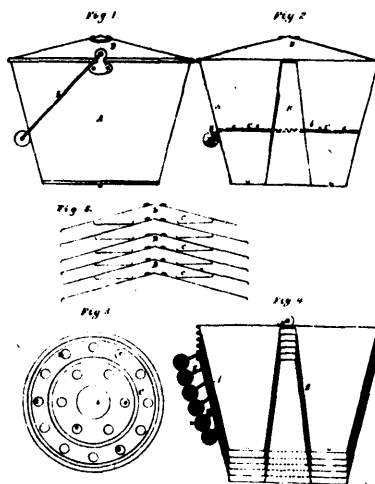
19391 Smith's Portable Windlass.



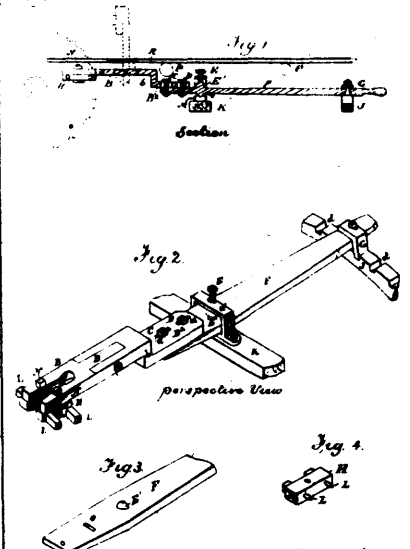
19392 Von Schmidt's Rotating Plough for Submarine Work.



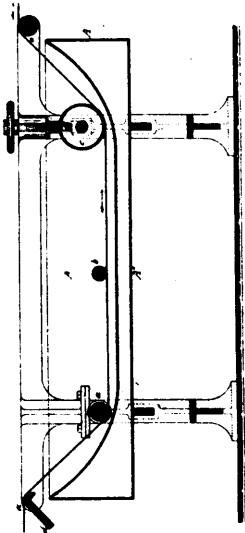
19393 Corbett's Clamp.



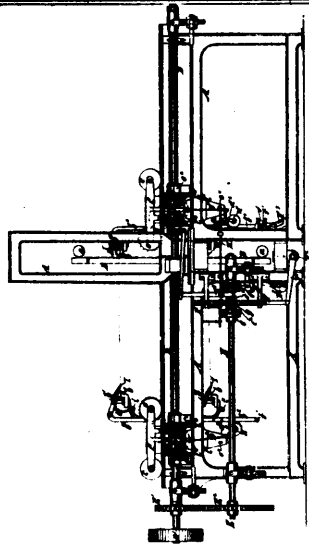
19394 Marr's Vegetable Steamer.



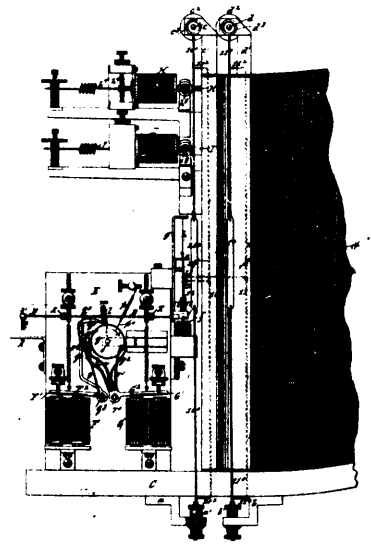
19395 Stevens' Lever for Shifting Saws on Edgers and other Devices for Cutting Lumber.



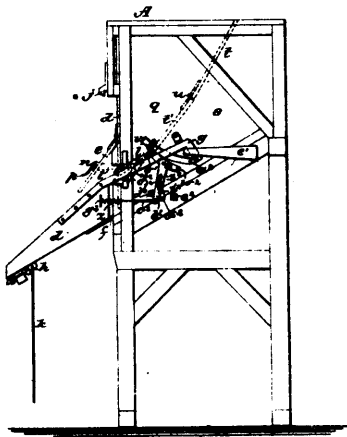
18396 Berczkowski's Process and Apparatus for Making Soap Sheets.



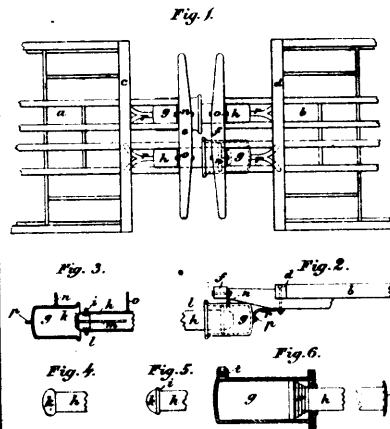
18387 Jonson's Embroidering Machines.



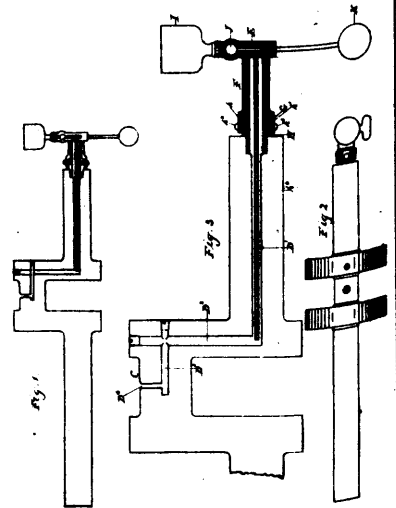
18398 Boyle's Telegraph Apparatus.



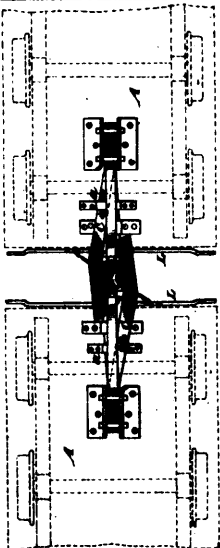
18399 Clifton's Coal Chutes.



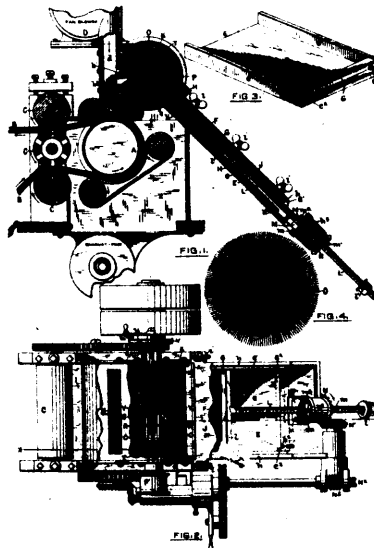
18400 Stevenson's Apparatus for Preventing accidents and damage or wrecking of cars from collision of trains.



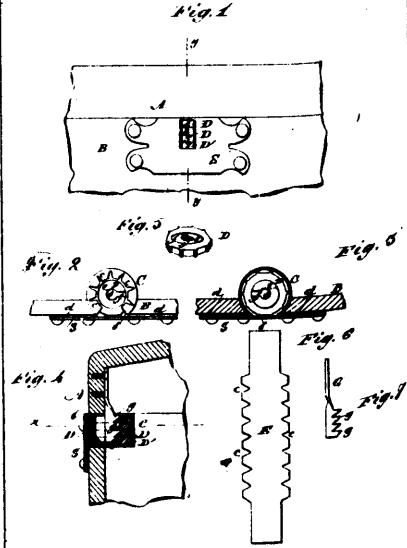
18401 Martin's Devices for Oiling the Crank Pins of Engine Shafts.



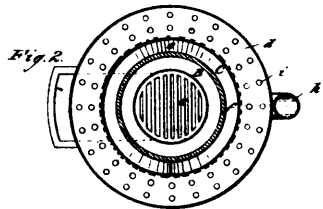
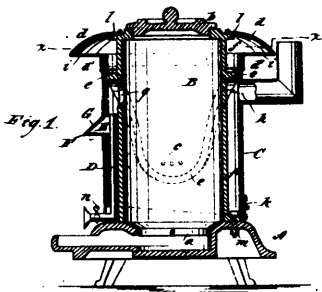
18402 Barnes' Car-Couplers.



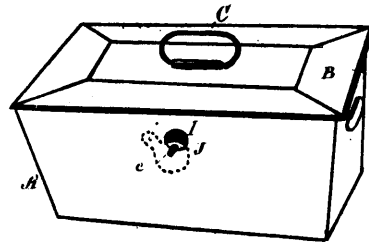
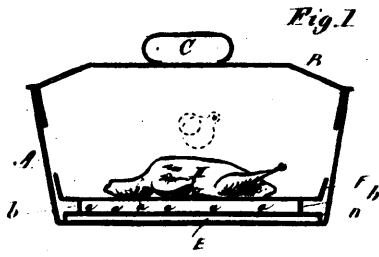
18403 Vaughan's Machines for Applying Colouring Matter and Fibrous Material.



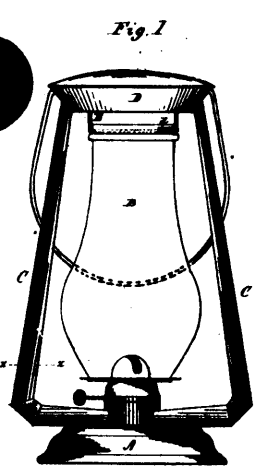
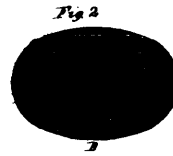
18404 Brooke's Combination Lock.



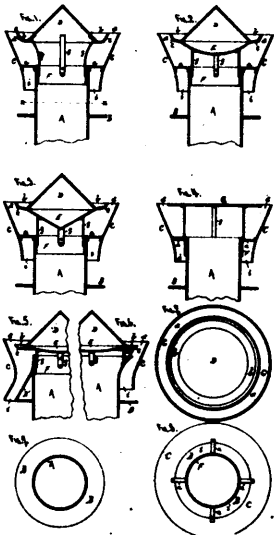
19405 Winfree's Heating Stove.



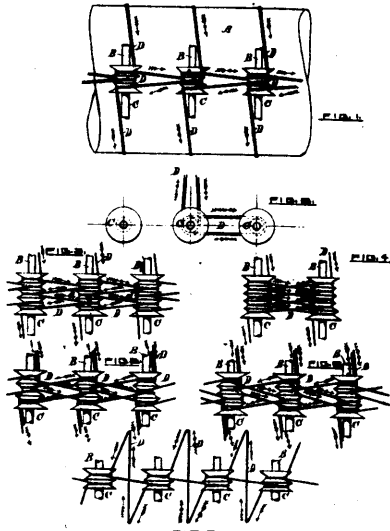
19406 Smith's Baking and Roasting Apparatus.



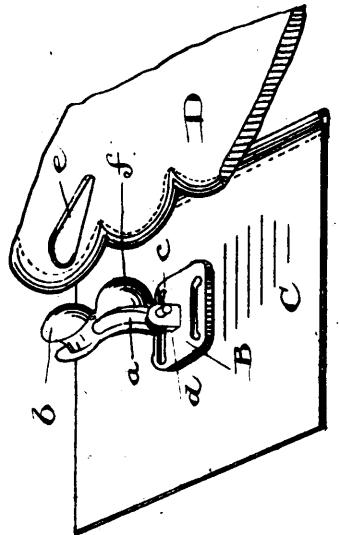
19407 Weakley's Tubular Lantern.



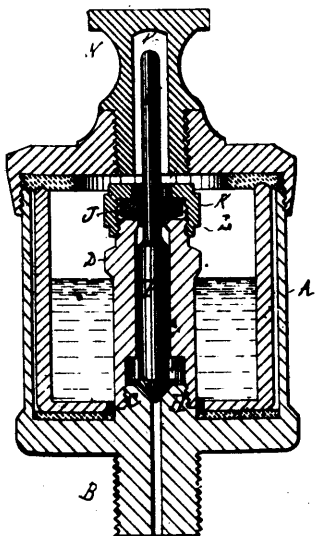
19408 Day's Ventilating Flue Caps.



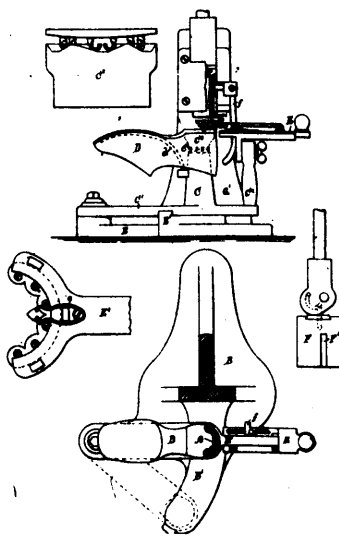
19409 Coggeshall's Spinning and Twisting Machines.



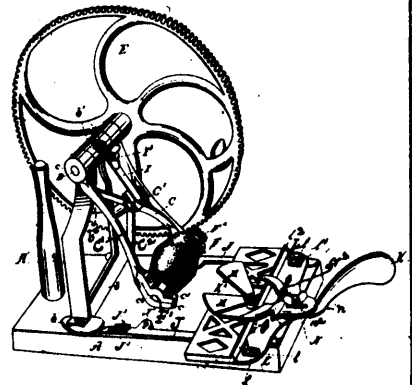
19410 Newton's Valve for Steam Traps.



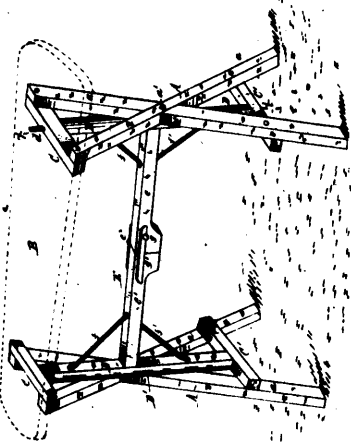
19413 Worswick's Oil Cup Feeder for Lubricators.



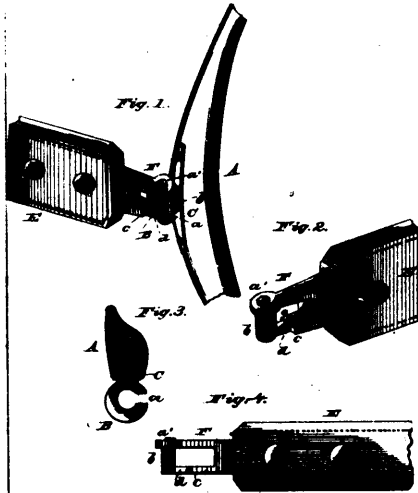
19414 Richardson's Metal wearing surfaces for rubber overshoes and in machines for Securing the same.



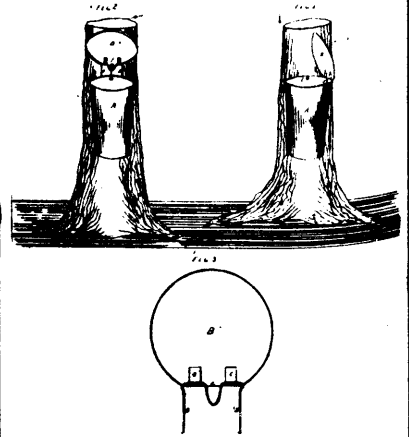
19415 Parker's Machines for Grinding Mower and Reaper Knives.



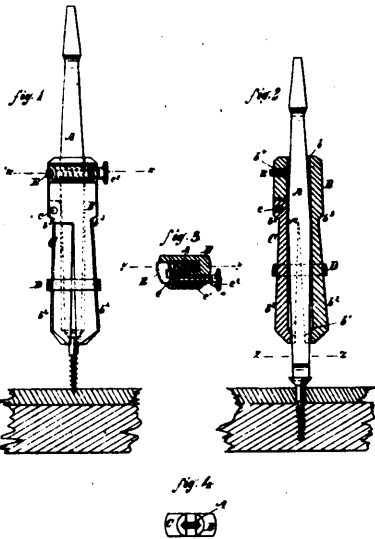
19416 Case's Ironing Tables.



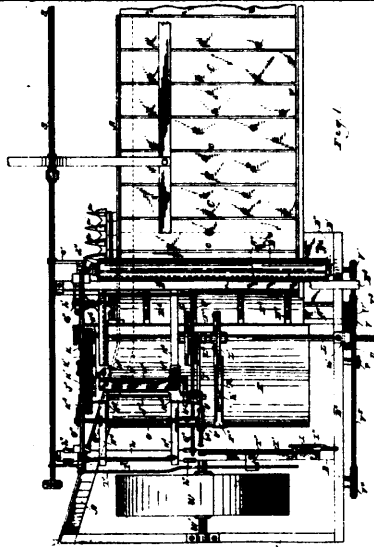
19417 Finley's Hame Fasteners



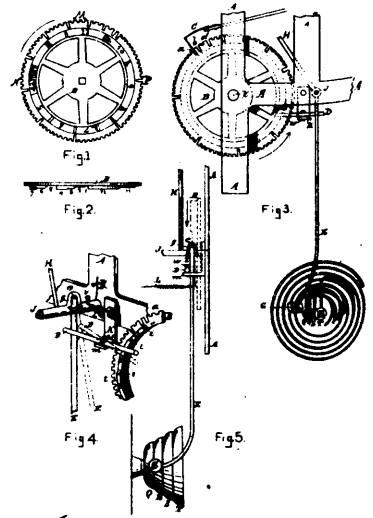
19418 Farnam & Ingalls' Attachment for Stump Puller Bucket Covers.



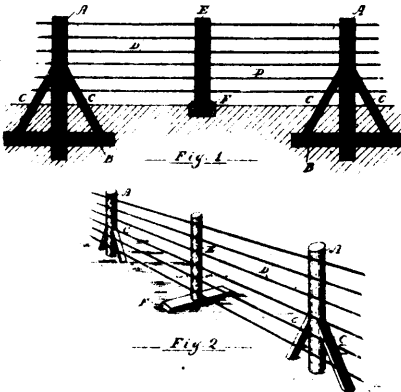
19419 Nel's Screw Drivers.



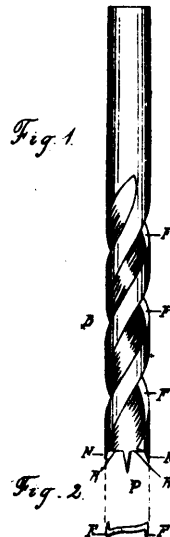
19420 Marsh & Blood's Binding Harvester.



19421 Naramore's Clock.



19422 Scarr's Fence



19423 Graham's Bit for Boring Wood.



19424 Tutt's Spring Holders for Napkins, Handkerchiefs, &c.

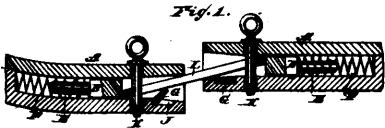


Fig. 1.

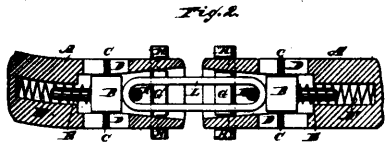


Fig. 2.

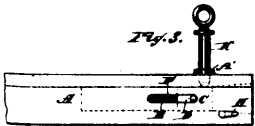
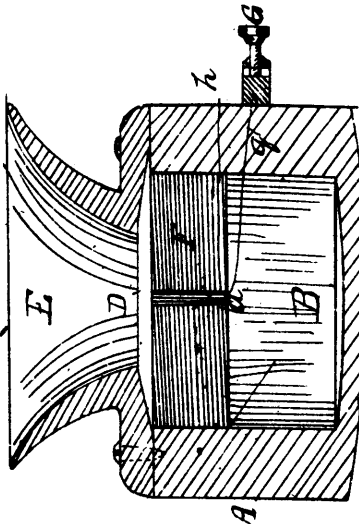
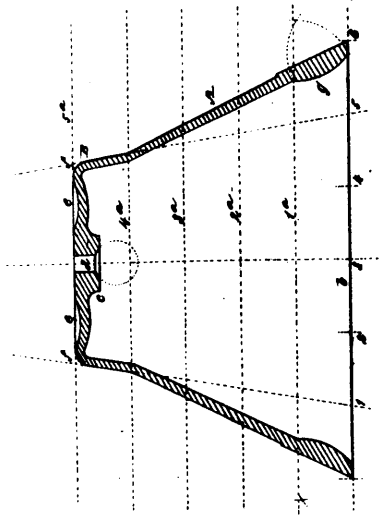


Fig. 3.

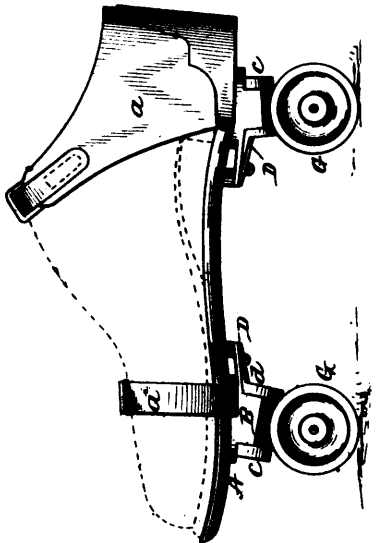
18425 Harry & Kieffer's Car-Coupling.



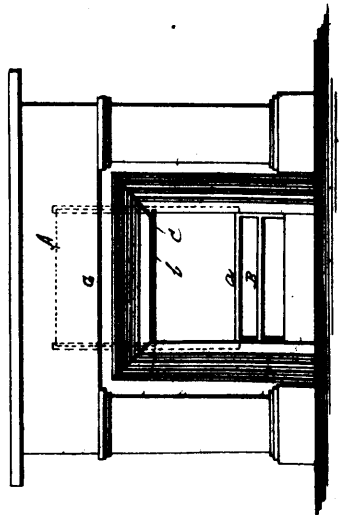
18426 Kingsbury's Electrophones to be used for receiving audible sounds from a transmitting instrument.



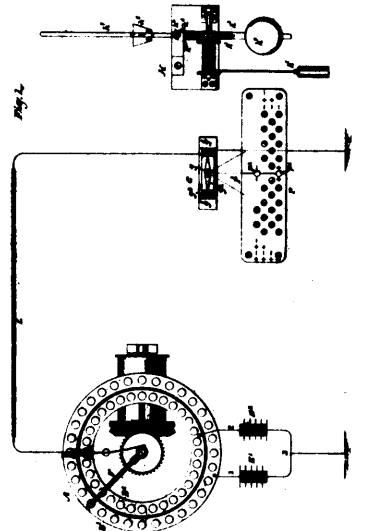
18427 Bowers' Bell.



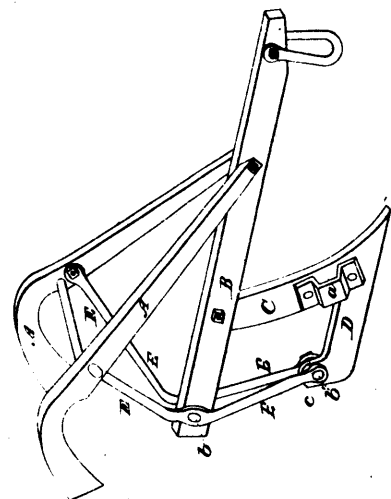
18428 Kitzelman's Roller Skate.



18429 Preston's Grate Blowers.



18430 Burke's Telegraphic System.



18481 Millen's Plough.

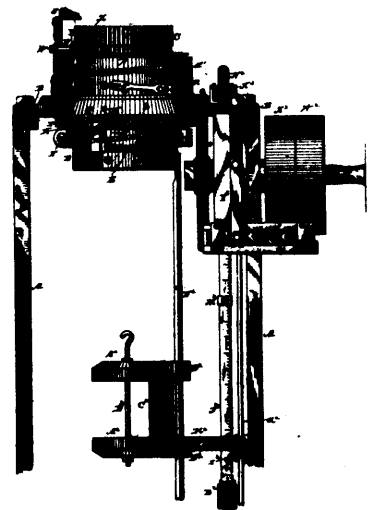


Fig. 1.

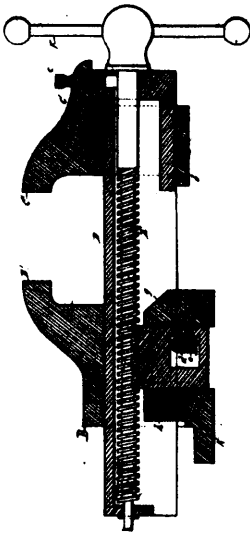


Fig. 2.

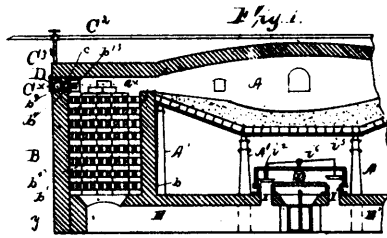
18482 Cummings' Skirt Protector.



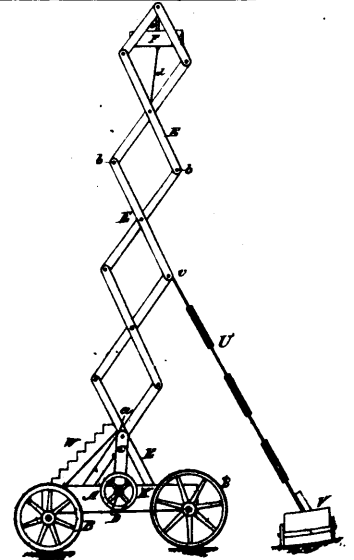
18433 Mayo's Knitting Machine.



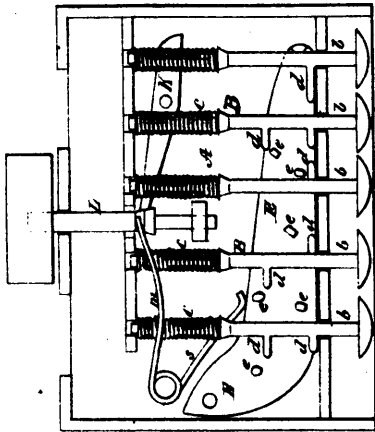
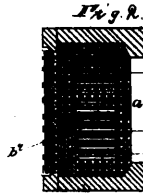
19434 Lewis' Bench Vises.



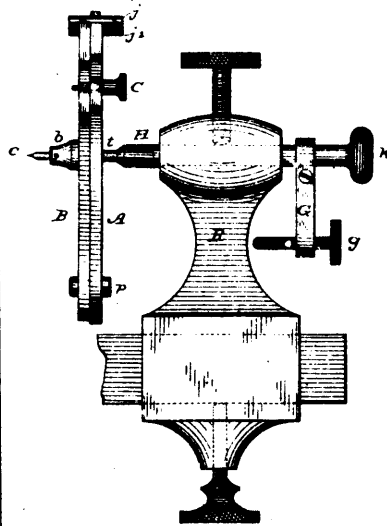
19435 Jones' Regenerator Furnace.



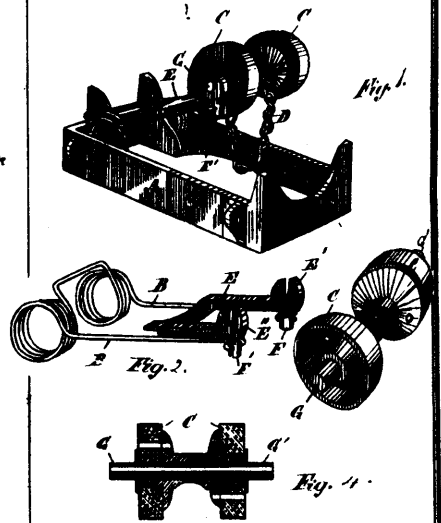
19436 Roberts' Fire-Escape.



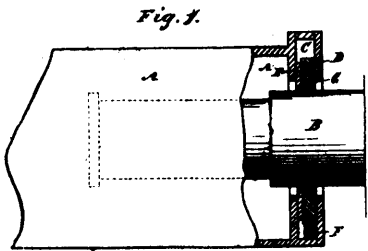
19438 Woodward's Lock.



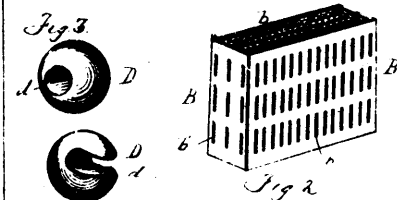
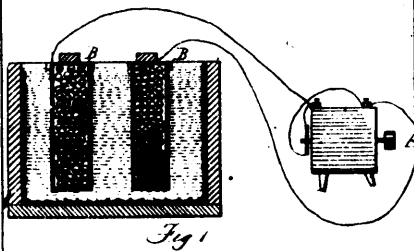
9439 Parsons' Jewelling Tool.



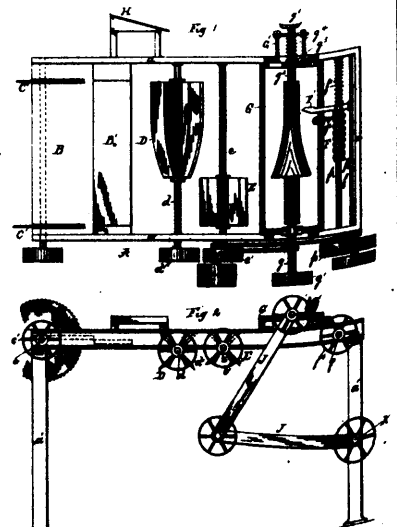
19440 George's Car Axle Lubricators.



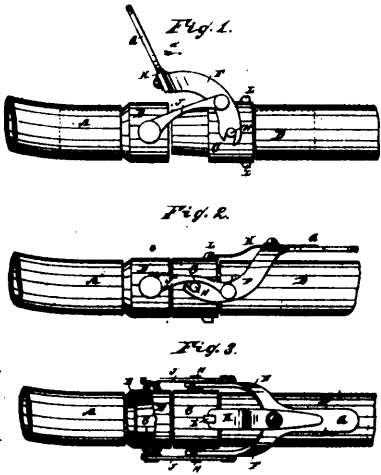
19441 George's Dust Guards for Car Axle Boxes.



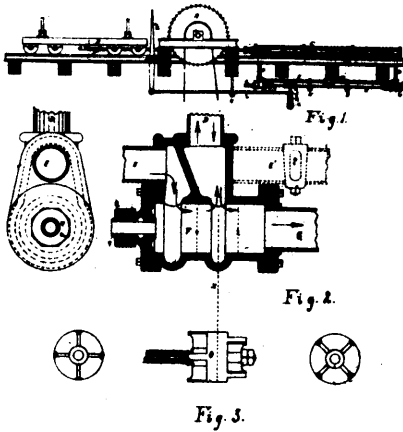
19442 Smyth's Secondary Batteries.



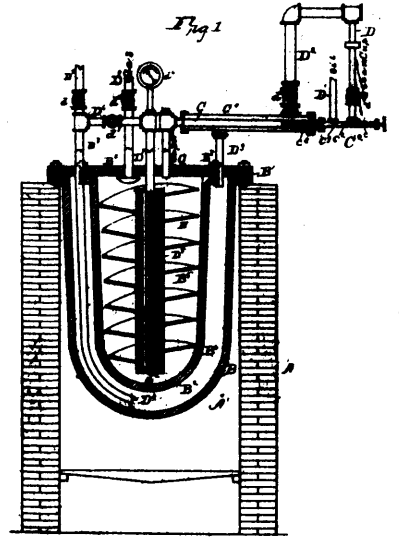
19443 Snee's Machines for making Insulator Pins.



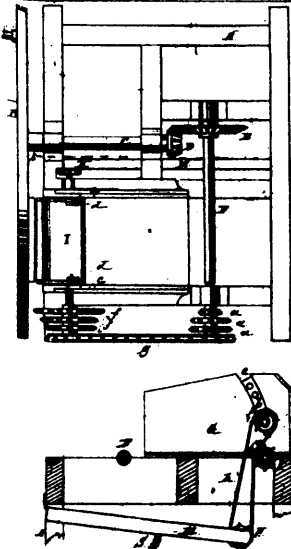
18444 Hamer's Hose-Couplings.



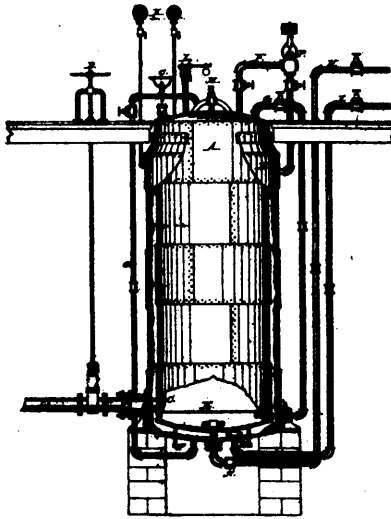
18445 Chew's Steam feed for Circular Saw Mills.



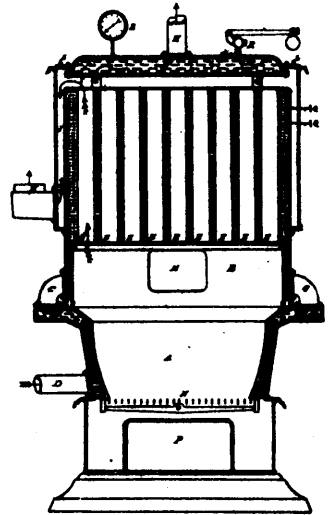
18446 Jones' Process for Generating Gas.



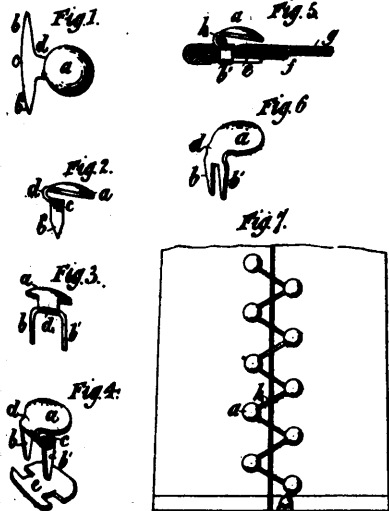
18447 Eaton's Machines for Cutting Feed.



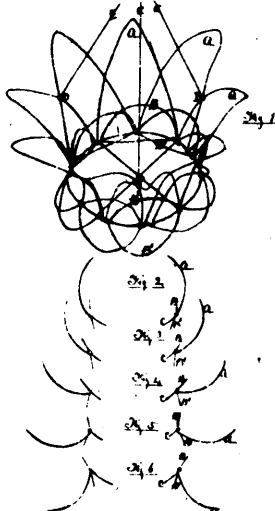
18448 Marshall's Boilers for Digesting Wood into Pulp.



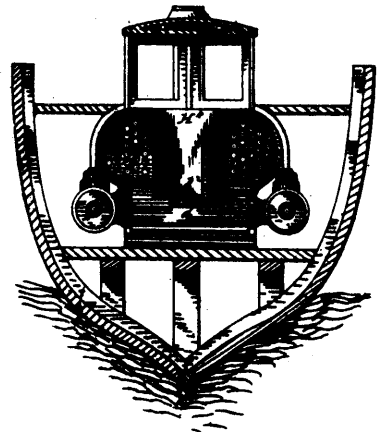
18449 Manny's Heating Apparatus.



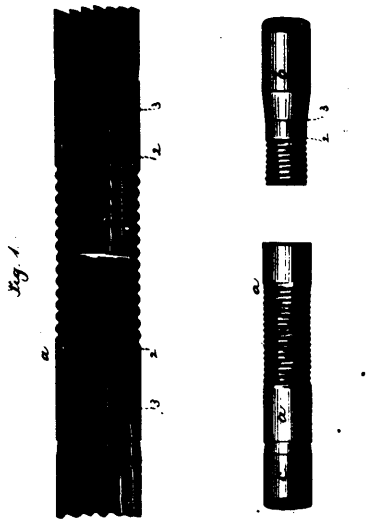
18451 Foster's Glove-Fastenings.



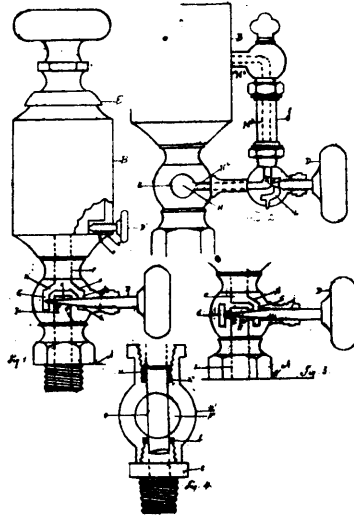
18452 Greenwood's Construction of Wire Baskets.



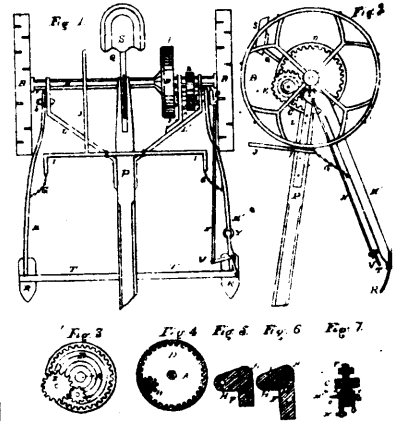
18453 Rothrock's Locomotive and Steam Boat Boilers.



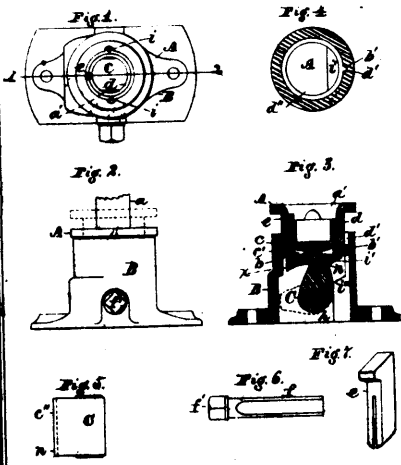
19454 Turrell's Couplings or Joints for Rods.



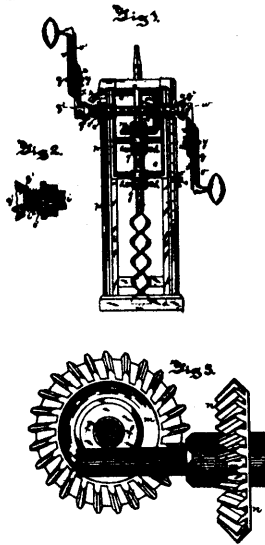
19455 Bailey's Lubricators.



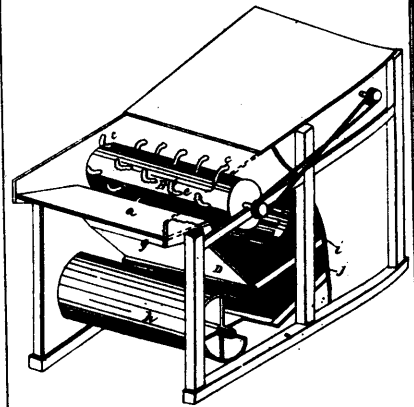
19456 Keeler's Mowing Machines.



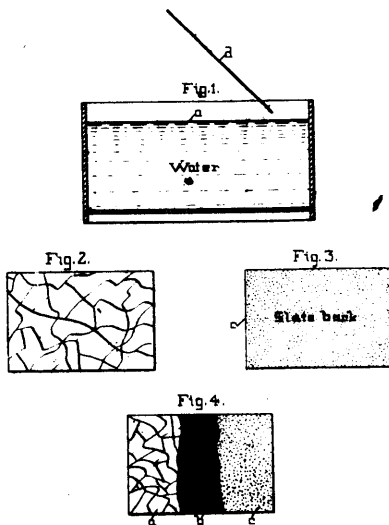
19457 Kohale & Hamilton's Drop Lift Steps for Machinery.



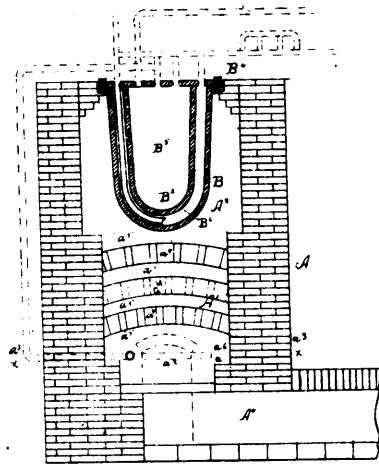
19458 Phillips' Boring Machines.



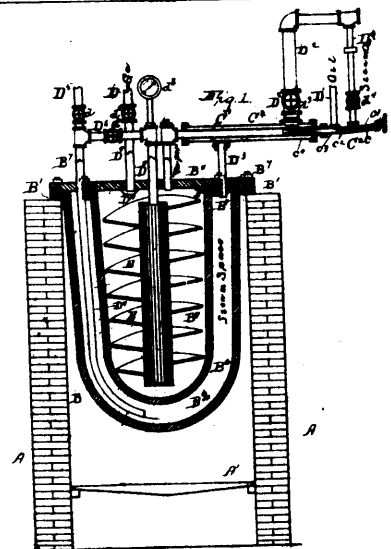
18459 Jones' Threshing Machines.



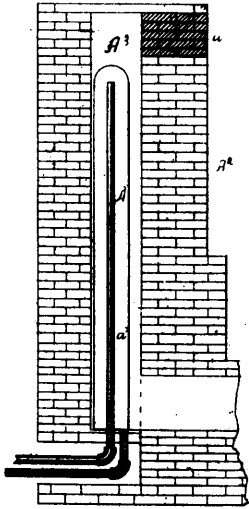
19460 Carroll's Decorated Plate Glass.



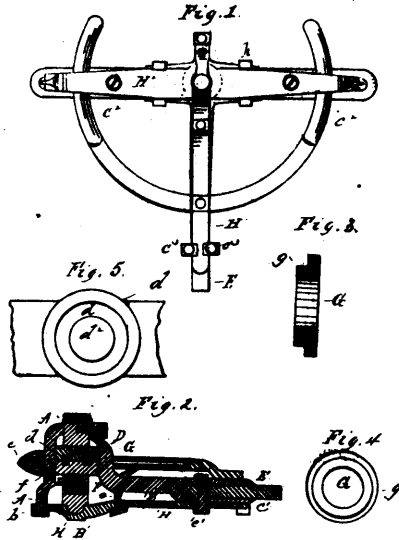
19461 Jones' Super-heater Furnaces.



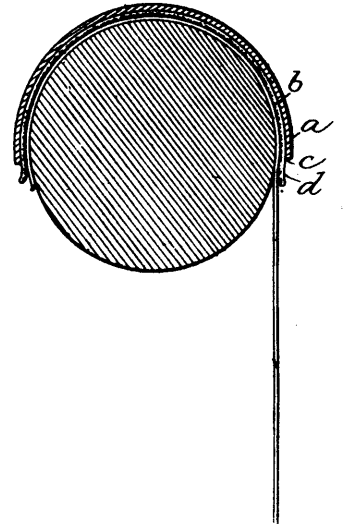
19462 Jones' Gas Generators.



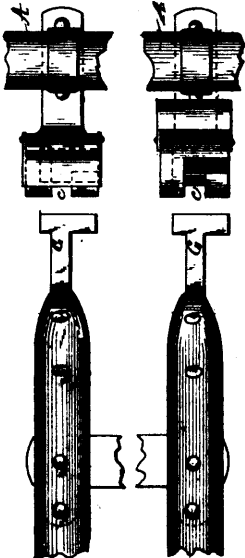
19463 Jones' Super-heaters.



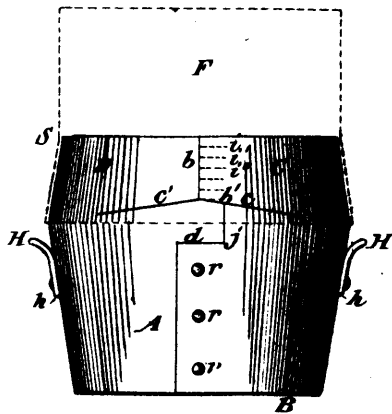
19464 Leete's Axle Couplings for Carriages.



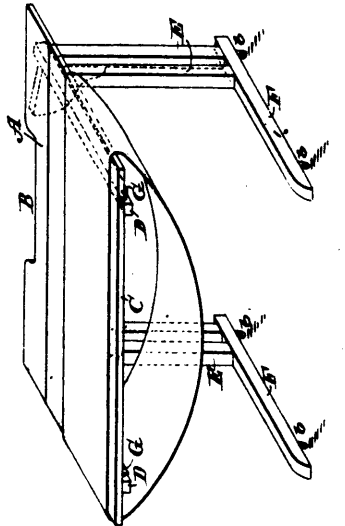
19465 Doty's Curtain Fixtures.



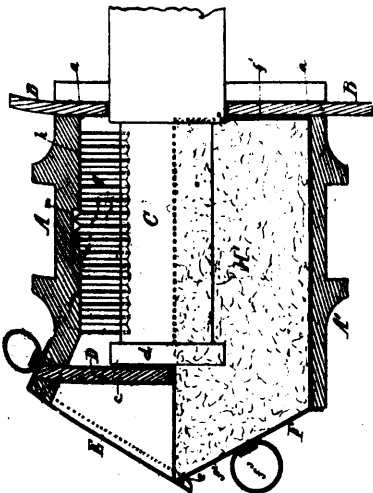
19466 Wheeler's Thill Couplings.



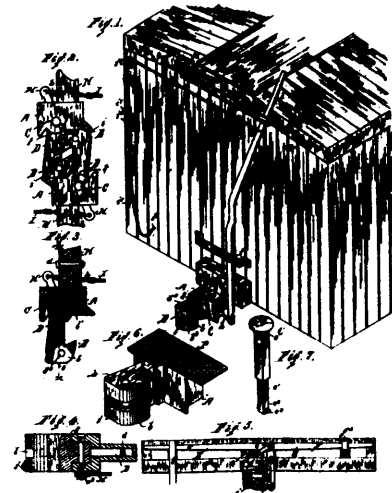
19467 Hey's Cheese Hoops.



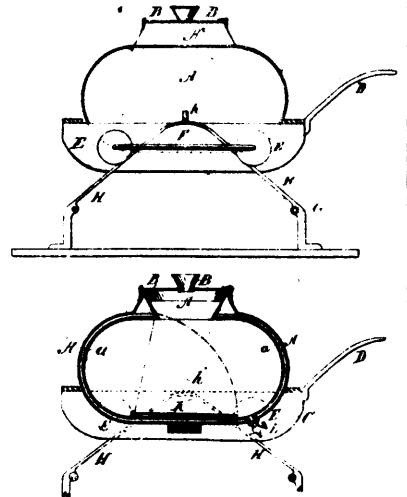
19468 Quigley's Skirt Boards.



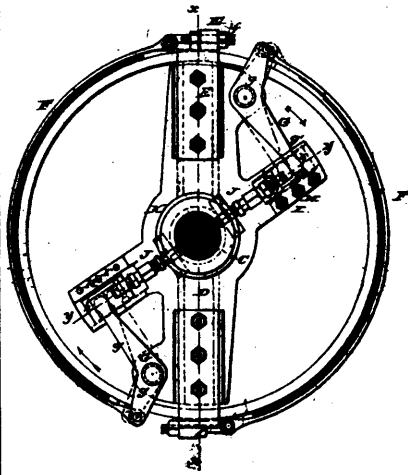
19470 Stewart's Car Axle Journal Boxes.



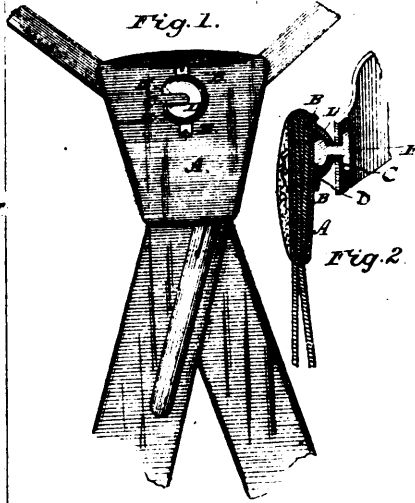
19471 Byron's Car-Coupling.



19472 Holmes' Churn.



19473 Merritt's External Friction Brake Bands for Hoisting and other Machinery.



19474 Sandiland's Scarf Retainer.

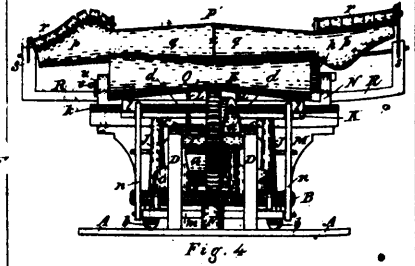


Fig. 4

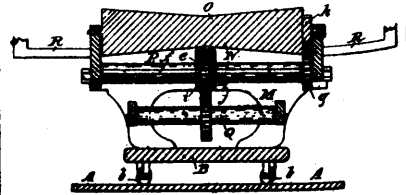
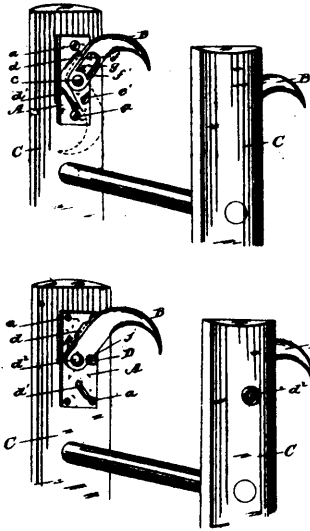
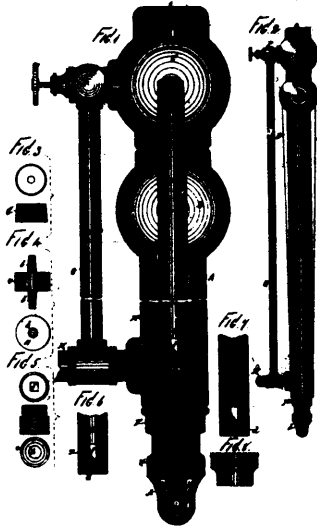


Fig. 5

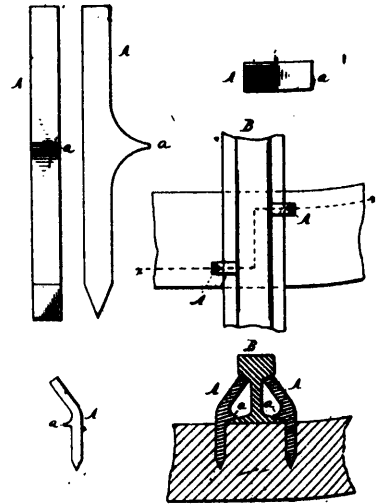
19475 Esel's Machine for Manufacturing Felt Boots, Shoes and Stockings.



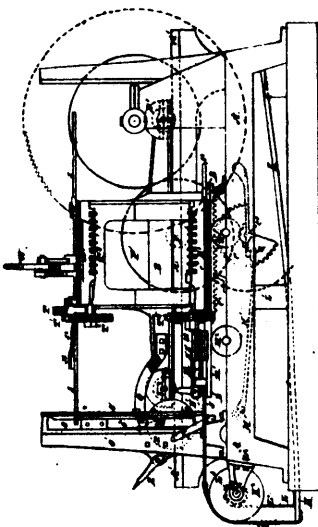
19476 Manahan's Ladder Hooks.



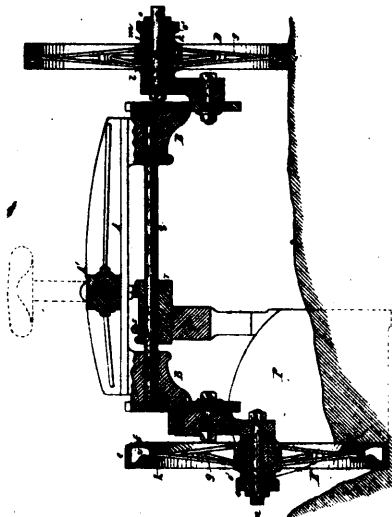
19477 McCracken's Steam Trap.



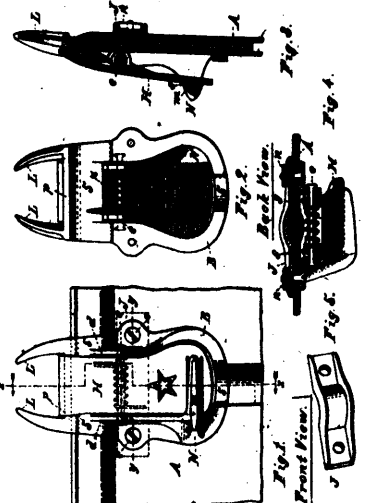
19478 Nulty's Spikes for Securing T-Shaped Rails to the Sleepers.



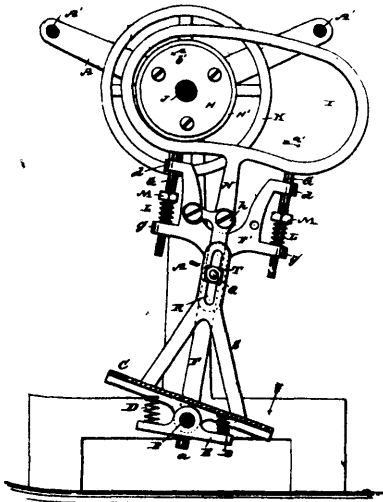
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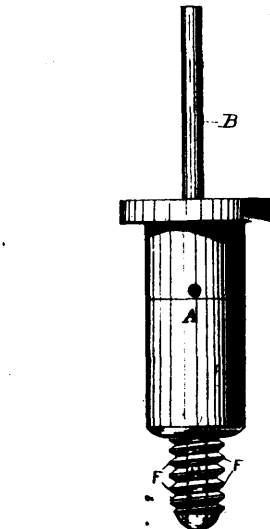
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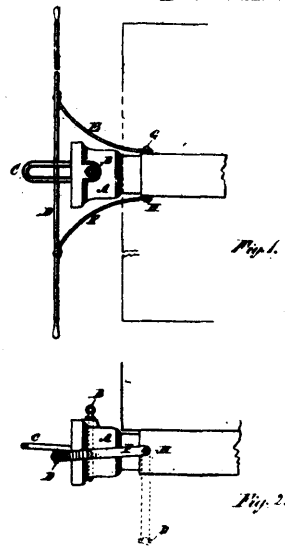
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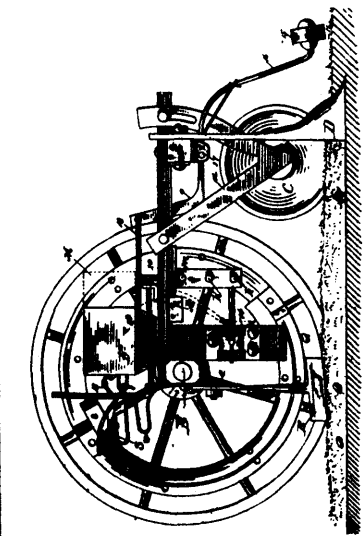
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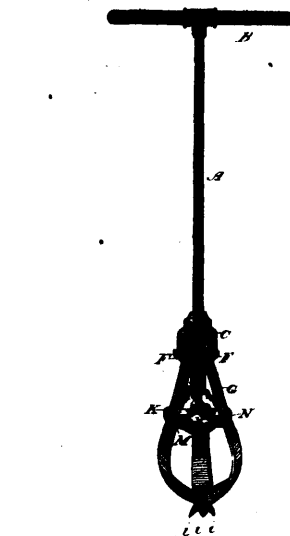
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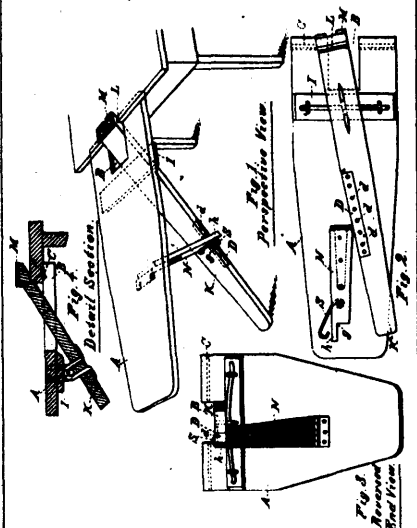
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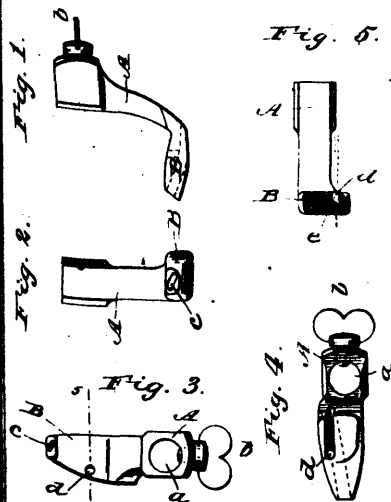
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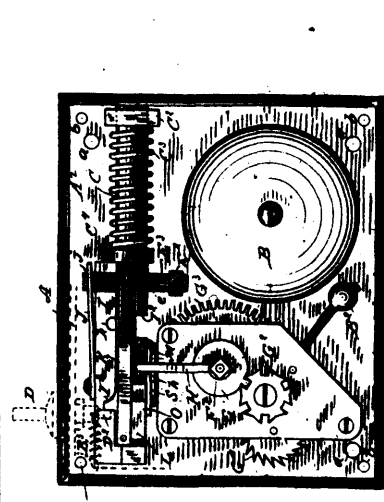
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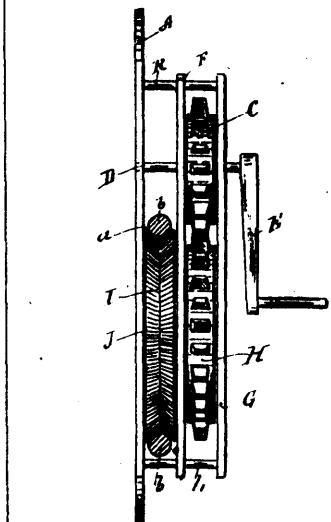
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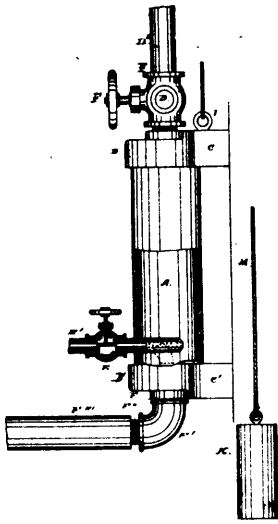
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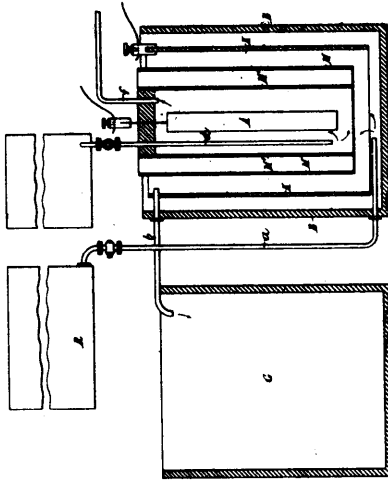
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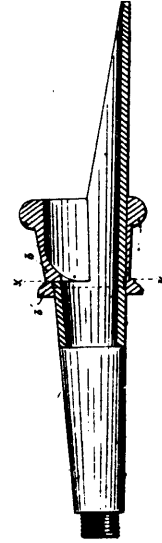
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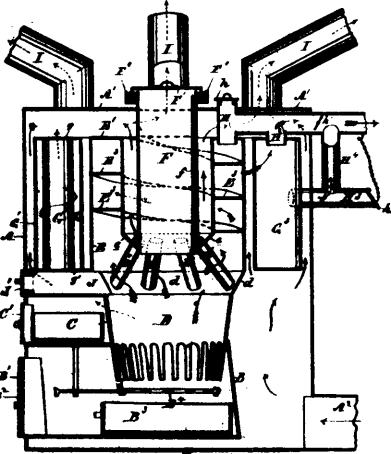
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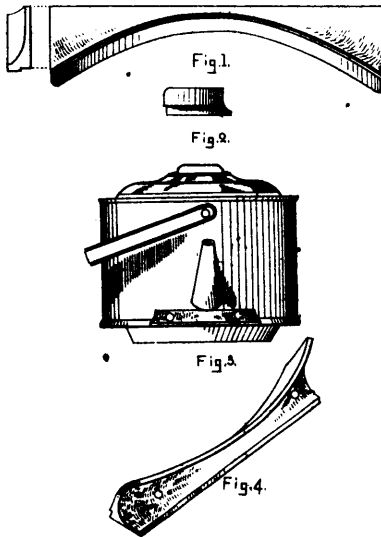
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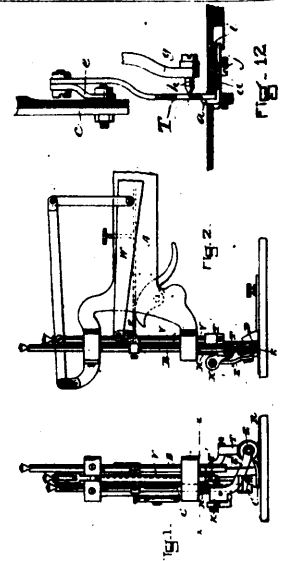
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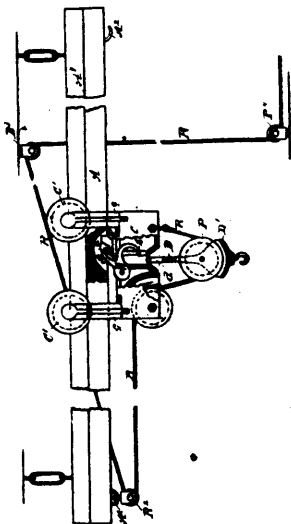
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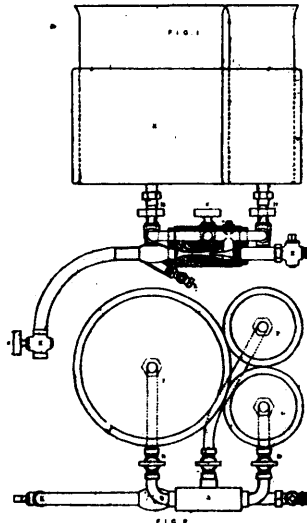
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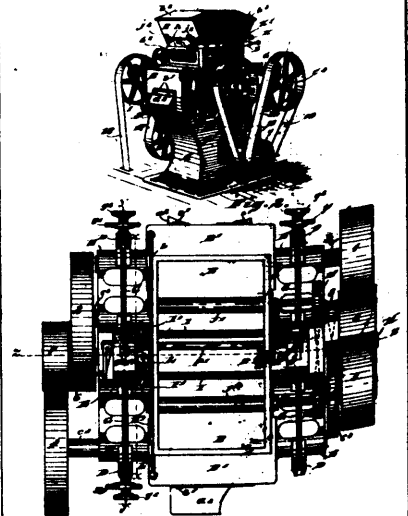
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