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INVENTIONS PATENTED.

No. 8274. Artificial Manure. (*Engrais artificiel.*)
Stephen P. Locke, Waterville, Vt., U.S., 27th December, 1877, for 5 years.

Claim.—A compound composed of stone lime (or quicklime), common salt and wood ashes, prepared with water and in the proportions described.

No. 8275. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

David Maxwell, Paris, Ont., 4th January, 1878, for 5 years.

Claim.—1st. The spur wheel C having recessed hub D and ratchet box wheel E, cast integrally and keyed on the driving shaft B for transmitting power to the knife and rake; 2nd. In combination with the spur wheel C and ratchet wheel E, the rod H passing through the hub I of driving wheel A, and carrying pawl F and spring J; 3rd. The combination with the shaft B of the drive wheel A, spur and ratchet wheels C E, pawl F, rod H and a spring J; 4th. The crank foot rest Q adjustable on the shaft M; 5th. The tripping lever R fulcrumed to the tilting lever O for operation.

No. 8276. Improvements on Camp Bedsteads. (*Perfectionnements aux couchettes de camps.*)

Richard A. Bradley, Ottawa, Ont., 4th January, 1878, for 5 years.

Claim.—1st. A camp bedstead constructed of rails A A divided at the middle, and hinged by T-plates B to cross legs C, C, and by L-plates E, near the ends to crossed legs E E F F, said legs formed with a zig-zag at their intersection and halved and pivoted, whereby the several parts will fold and close compactly together; 2nd. The cords M attached to the legs C, and the rails A.

No. 8277. Improvements on Vehicle Springs and Axles. (*Perfectionnements aux ressorts et aux essieux des voitures.*)

Samuel W. Ludlow, Cincinnati, Ohio, U.S., 4th January, 1878, for 5 years.

Claim.—1st. In combination with the axle ends A A and rigid bar B, the sockets D for receiving the ends of the spring or guide bar, or both; 2nd. The combination of the axle ends A A, rigid bar B, spring C, sockets D and guide bar F, connected and operating as specified; 3rd. In combination with the axle ends A A, spring C and bar B, having sockets D and links E E.

No. 8278. Improvements on Machines for Grinding Harvester Knives. (*Perfectionnements aux machines à aiguiser les couteaux des moissonneuses.*)

Frank M. Wood, Worcester, Mass., U.S., 4th January, 1878, for 5 years.

Claim.—1st. The combination of the table H, slide piece I having slotted arms I, pivoted part J and holding device G; 2nd. The holding device G consisting of the combination of the parts, piece G² having slot k, clamps g h and k, thumb screws a, rod e and eyes f; 3rd. The combination of the emery wheel C, holding device G and pivoted plate J; 4th. The table H, sliding piece I, slotted arms I, screws c and emery wheel C; 5th. The combination of the table H, slide piece I, pivoted part J and holding device G; 6th. The combination of the table H, slide piece I and pivoted part J.

No. 8279. Improvement on Horse Nail Machines. (*Perfectionnement des machines à clou à cheval.*)

John E. Wheeler, Lynn, David B. Loring and Frederick W. Coy, Boston, Mass., U.S., 4th January, 1878, for 5 years.

Claim.—1st. Automatic guides arranged to operate between the tunnel and the rolls; 2nd. The combination of stationary tunnel or feeding chute B,

automatic guides arranged to operate between said chute and the rolls or revolving dies; 3rd. The combination of the guides B₁ B₂, lever b₁, spring b₁ and pin b₂ with the pin c; 4th. The combination of the feed tunnel provided with the guides B₁ B₂ and regulator b₄, with the revolving dies A₁; 5th. The combination of a delivery tunnel F, possessing adjustability in relation to the revolving dies, with the spring D arranged to project upward from the tunnel, and whose end operates as a cut-off in preventing the feeding of blanks to the roll; 6th. The delivery tunnel F, possessing vertical adjustability in relation to the revolving dies A₁; 7th. The delivery tunnel F, in combination with the ways F₁, and a frictional pressure exerted upon the side thereof, whereby adjustability is provided the tunnel; 8th. The way F₁, recessed and provided with a movable plate f₁, with the spring f and bolt f₃; 9th. A delivery tunnel having a removable front plate; 10th. The combination of the revolving dies with the stops, for stripping the dies of blanks lodged therein; 11th. The feed tunnel B, provided with an inclined chute B₃ opening into the same; 12th. The combination of a feed tunnel provided with guides and regulator, the revolving dies A₁, the adjustable tunnel F and the spring f₂; 13th. The combination of the disk C provided with pin c with the lever b₄ pivoted as shown, spring c₁ and lever b₂ arranged in relation to each other, whereby the regulator and guides are successively operated; 14th. The removable tube F, for holding blanks to be fed to the dies placed above an opening into the feed tunnel; 15th. As an attachment to horse shoe nail machines, the removable tube E, platform E₁ and the reciprocating plate E₂, operated to successively shoot the base blank from the pile in the box into the inclined chute; 16th. The combination of the disk C, provided with the cam projections c₁, with the lever E₃, whereby the plate is reciprocated in the base of the removable tube E in platform E₁; 17th. The rolls consisting of a central disc, provided with projecting central sections and outwards arranged with recesses fitting over the said projections; 18th. The combination of an automatic feeding device, revolving dies and an automatic delivery mechanism; 19th. The combination of a centering device arranged immediately over the converging point of the dies, to guide and centre blanks as they are drawn into the dies, with revolving dies for shaping said blanks; 20th. In combination with a removable tube for holding blanks, a yielding follower arranged to support the blanks in the tube, while the same is being filled, and to gradually lower or be forced downward about the thickness of a blank with each blank deposited in the tube; 21st. In combination with removable conveyer for holding and feeding blanks, the mechanism described, the same consisting of a follower provided with a means for lifting the same and for regulating its descent; 22nd. The combination of a follower for the support of blanks, arranged to yield under pressure, with suitable alarm mechanism, for denoting that the tube is almost filled with blanks; 23rd. As an attachment to punching machine for filling removable conveyer with blanks, the pinion 4 and shaft 6, having a bearing in brackets 5, projecting from the casing 3, and provided with a thumb screw and handle 7, with the follower 1, recessed and provided with the rack 2 and stop 12, all arranged under the bed plate of the punching machine to operate the follower vertically on a line with the die; 24th. The combination of the follower, recessed as shown, with the bent lever 13 pivoted to the casing 3, pin 14 projecting through slot 15 and spring 16; 25th. The combination of the casing 3 and platform g, a mechanism for lifting a follower and restraining the same from descent except under pressure, an alarm mechanism and suitable stops with a removable conveyer for receiving and holding blanks from a punching machine and feeding the same, all operating to automatically receive and lodge said blanks in the tube E; 26th. A removable conveyer for receiving, holding and feeding blanks, the open tube E, provided at its base with the rests g upon its sides with the restraining spring g₁, and upon its top with the swinging bar g₂; 27th. A metal blank for horse shoe nails consisting of a shank having head forming portions on only two sides thereof, and of uniform thickness therewith.

No. 8280. Improvements on Abdominal Supporters. (*Perfectionnements aux suspensoirs abdominaux.*)

Ella M. Holton and Thomas Etches, Jackson, Mich., U.S., 4th January, 1878, for 5 years.

Claim.—1st. The extension pieces B combined with an abdominal supporter; 2nd. The side lacings constructed with angular sides; 3rd. The combination of the front piece D, back pieces E, adjustable side lacings, elastic gorings A and the extension pieces B.

No. 8281. Machine for Cutting Cloth, Paper and Leather. (*Machine à tailler le drap, le papier et le cuir.*)

Mary E. Sinnott, Bakersfield, Vt., U.S., 4th January, 1878, for 5 years.

Claim.—1st. In combination with the revolving cutter and wheels E acting the same, the blade F and handle A; 2nd. In combination with the cutting mechanism constructed as described, the gauge G attached to the handle.

No. 8282. Improvements on Pumps. (*Perfectionnements aux pompes.*)

Peter H. Green, Heepeler, Ont., 4th January, 1878, for 5 years.

Claim.—1st. The compound pump handle comprising toothed segments A A' meshing into each other, and operated by one or two handles D D', as may be required, each of the segments A A' having a smaller toothed segment a a' cast on its side, the teeth of which smaller segments a a' meshing into corresponding teeth on the sides of the pump rod B, by which means a parallel and frictionless motion is produced; 2nd. The auxiliary cylinder C with piston C', operating therein for attaching to any ordinary pump.

No. 8283. Apparatus for the Manufacture of Cotton Warp. (*Appareil de fabrication de la chaîne de coton.*)

Moses L. Hitchcock and John Bergin, Cornwall, Ont., 4th January, 1878, for 5 years.

Claim.—1st. In combination with the warp beam of a slasher or warp sizing machine, a dividing roll placed in immediate proximity thereto; 2nd. In any slasher or warp sizing machine, the combination of the warp beam D, double comb G and cases H H.

No. 8284. Gaseous Fluid and Apparatus for Motive Power Purposes. (*Fluide gazeux et appareil-moteur à gaz.*)

Robert M. Marchant, London, England, 4th January, 1878, for 5 years.

Claim.—1st. The production of a gaseous mixture of air, steam and water by pumping air into a pump supplied with steam and water, and the pumping forward of the said mixture of air, steam and water, so that it may be utilized for motive power purposes; 2nd. The air pump H, and pipe I, in combination with the exhaust steam pipe G, water inlet pipe F, pumps A B C and outlet pipe P.

No. 8285. Improvements on Metal Cans. (*Perfectionnements aux boîtes métalliques.*)

George Brown, John Hamilton and Frederick Massey, Montreal, Que., 5th January, 1878, for 5 years.

Claim.—1st. A can A having a chimb B, of extended length beyond the head or cover D, and having portions of the chimb forming clasps F; 2nd. The clasps F, formed out of the chimb of the can A, in combination with the head or cover D.

No. 8286. Automatic Car-coupling. (*Attelage automatique de wagons.*)

Frank Gibford, Newton, Iowa, and Urnah Gibford, New York, U.S., 5th January, 1878, for 5 years.

Claim.—1st. The barbed draw head consisting of the rectangular stem a and the triangular plates b, removably secured thereto; 2nd. The draw bar, having the angular channelled head a' and the bevelled heel a'; 3rd. The combination with the laterally vibrating draw-bar C, the master-lever G and the chain g, of the top lever H, its chain h, the angular side-lever M and its chain K; 4th. The combination with the draw-bar C and its stirrup D, of the U-shaped spring S secured at one end to said stirrup and bearing against the draw-bar.

No. 8287. Improvements on Clothes' Pins. (*Perfectionnements aux épingles américaines.*)

Albert G. Cummings and Jonathan R. Talcott, North Williston, Vt., U.S., 5th January, 1878, for 5 years.

Claim.—1st. A clothes' pin provided with a series of notches on the inside of the prongs, for the reception of different sized clothes-lines; 2nd. A clothes pin provided with a series of bevelled notches on the inside of the prongs, having the sharp angle b and blunt angle c.

No. 8288. Improvements on Locomotive and Portable Engines. (*Perfectionnements aux machines locomotives et portatives.*)

Loftus Perkins, London, Eng., 9th January, 1878, (Extension of Patent No. 1962), for 5 years.

No. 8289. Improvements on Marine and Stationary Engines. (*Perfectionnements aux machines de navigation et fixes.*)

Loftus Perkins, London, Eng., 9th January, 1878, (Extension of Patent No. 1977), for 5 years.

No. 8290. Improvements on Bedstead Fasteners. (*Perfectionnements aux ferrures de couchettes.*)

Augustin Lemay, Ottawa, Ont., 9th January, 1878, for 5 years.

Claim.—1st. The hook piece C having the hooks c with the slopes d, dowells b and slotted screw holes a; 2nd. The eye piece D having the dowells f and hook-dowells g.

No. 8291. Improvement on Steam Engine Valves. (*Perfectionnement des soupapes de machines à vapeur.*)

Hugh Fairgrieve, Hamilton, Ont., 9th January, 1878, (Extension of Patent No. 1961), for 5 years.

No. 8292. Improvements on Ribbon Clips.

(*Perfectionnements aux serre-ruban.*)

David W. Copeland, Theresa, and William A. Nichols, Evans' Mills, N.Y., U.S., 12th January, 1878, for 5 years.

Claim.—1st. The clip A formed of wire bent to form a parallelogram having at one end a hook B to receive the opposite end, in combination with a roll of narrow textile fabric or ribbon; 2nd. The clip A has vign rollers G; 3rd. The clip A provided with a cam lever H.

No. 8293. Process and Apparatus for Treating Refractory Ores. (*Procédé et appareil de traitement des minerais réfractaires.*)

Henry F. Howell, Sarnia, Ont., 12th Jan., 1878, (Re-issue of Patent No. 7294)

Claim.—1st. The air chamber G surrounding the retort; 2nd. The combination with the air chamber G, of the air and steam pipes M and N.

No. 8294. Machinery for Obtaining Printing Surfaces. (*Machine pour produire des planches à imprimer.*)

George P. Drummond, Ottawa, Ont., 12th January, 1878, for 5 years.

Claim.—1st. The art of obtaining surfaces for printing reading matter from, by first detaching the letters of the subject matter from paper, or other suitable material, having the letters punched, impressed, or matriced and printed therein, or embossed thereon, and then by attaching them to an elastic band or surface, from which they are removed and formed into a solid matrix or relief mould, from which a stereotyop or an electrotype may be obtained; 2nd. In the art of obtaining surfaces for printing reading matter from, a composing machine having reels of creased ribboned paper, or other suitable material, each piece of which is matriced and printed, or embossed throughout its extent with one letter, and collectively all the letters of the alphabet, punctuation points, figures or signs, and having fingering keys, by means of which the letters of any desired reading matter may be rapidly brought forward under a pair of scissors, and cut from the ends of the ribbons and attached to an elastic band; 3rd. The combination of the fingering keys b b', by the knee attachment 59 and the hammer j, with the sustaining catch h and the drop levers; 4th. The combination of the drop lever g with the ribboned, creased, matriced, punched and printed paper 10, by the parallel slide p, the draw spring Q and the channel guide n; 5th. The combination of the channel guide n, the channel 48 and the ribboned, creased, matriced, punched and printed paper 10; 6th. The combination of the check spring pawl Z, and the punched guiding holes 60 in the ribboned paper; 7th. The combination of the drop lever g, dropped, and the combinations of claims 4, 5 and 6 with the revolving eccentric C and the vibrating arm d and cross bar u, for the purposes of feeding in the ribboned, creased, matriced, punched and printed paper; 8th. The combination of the ribboned, creased, matriced, punched and printed paper 10, the channel 48 (advance) and feeding pawl J; 9th. The combination of the revolving eccentric C, the vibrating lifting arm u and cross bar t, with the drop lever g, dropped, the shear levers s r, the double shears 7 and 6, and the ribboned, creased, matriced, punched and printed paper; 10th. The combination of the sticking pad 4 with the double shears 7 and 6, the elastic band coated with an adhesive material, and the ribboned, creased, matriced, punched and printed paper; 11th. The combination of the drop lever g, dropped and advancing, the feed arm e, its cross bar X containing the adjusting set screws, with the feed wheel 43, by the lever 50, and the feeding and check friction pawls 40 and 45; 12th. The combination of the feed wheel 43 with the belt wheel 44, connected with the band feed wheel 31 and the elastic band W; 13th. The combination of the set screws in the bar X, with the matriced and printed letters in the ribboned paper adjusted thereto; 14th. The combination of the feed arm e and cross bar X and 11, with the slide bar Y and the secondary shears 6; 15th. The combinations, positions and operation of the matriced, printed, creased and punched ribbon paper 10, channel 48, stationary spring pawl 3, main shears 7, second ary shears 6 and elastic band W; 16th. The parallel movement, rocking bars and arms L K and 54, for their respective purposes; 17th. The combination of the elastic band W, the subject matter attached thereto in the shape of matriced, printed and creased letters, the swinging adjusting platform 19 20, the drop press 18 and the matrix basis 15; 18th. The combination of the table 13, the lever 25, the pawl 26 and the matriced and printed letters; 19th. The combination of the press 18, the tissue paper 30, and the matrices formed into a moulding surface; 20th. The combination of the dropping arm 5, foot lever 24, guide arms 16 and 17, and the drop press 18; 21st. The combination of the ribboned paper reels 21 or 22, having creased ribbon paper thereon, and the subject matter upon the elastic band; 22nd. The combination of the adjustable feed wheel 55, the pawl 26, the widening slot 58, for the purposes of producing various feeds to the table 13; 23rd. The manner of forming the matrices into a solid moulding surface; 24th. The combination of the oven 23, with the matriced subject matter, for the purpose of adjusting in its removal from the band and consolidation on the matrix basis; 25th. In the composing machine, the combination of the bolt 42 and slot 54 with the ribboned paper, matriced, printed and punched, for the purpose of increasing the feed proportionately throughout, so as to adapt this machine for larger matrix letters, or for letters suitable for obtaining printing surfaces, for reading matter by photo-mechanical process.

No. 8295. Improvements in Steam Generators. (*Perfectionnements dans les générateurs de vapeur.*)

Charles Tyson, Philadelphia, Pa., U.S., 12th January, 1878, for 5 years.

Claim.—1st. In a pipe steam generator, the use of a supplemental pressure equal to the working pressure of the motor, induced by an air chamber, hydrant, or equivalent, to automatically feed water to the generating pipe during the operation of the motor, so that upon the stoppage of the motor subsequent generation of steam shall expel the water from the generating pipe, and thus further generation of steam be prevented whilst the motor is at rest; 2nd. In a pipe steam generator, the combination of a water supply D, pumps D, air chamber A, generating pipe B' and furnace C.

No. 8296. Improvements on Fanning Mills. (*Perfectionnements aux tarares-cribleurs.*)

John Bennett, Belleville, Ont., 12th January, 1878, for 5 years.

Claim.—1st. The handle J, conical screw H and rack G, in combination with

the hopper slide F, the conical screw H made in the form shown; 2nd. The hangers I and J, the flexible hangers D in combination with the shoes A and B, the hangers I and J in combination with the convex surface knobs T, or their equivalents, and pivot screws v; 3rd. The lifting bar O O carrying the friction roller R, and furnished with the gudgeon and thumb nut at the outer end, in combination with the bar on the lower shoe; 4th. The lifting bar O O, in combination with the cleats S₁ and S and the slots through the side of the mill, also the board marked C in the lower shoe.

No. 8297. Improvements on Nautical Logs.
(*Perfectionnements aux logs.*)

David Carroll, Spring Creek, Pa., U.S., 12th January, 1878, for 5 years.
Claim.—1st. The combination with a well tube, passing through the bottom of a vessel of a nautical log extending below the same and registering the progress and speed of the vessel; 2nd. A nautical log constructed of water wheels or screws, extending below the bottom of the vessel and being placed at right angles to each other and of suitable transmitting and registering devices inside of the vessel for indicating the forward and drift motions of the vessel; 3rd. A nautical log constructed of water wheels or screws arranged below the bottom of the vessel, one in the direction of the axis of the vessel, the other at right angles thereto, and of a speed indicator arranged for forward and drift motion below the screws in connection with suitable registering apparatus and graduated scale; 4th. The combination of the longitudinally and laterally swinging and spring acted speed indicator formed of four rectangular blades with the segment and forked gear of a vertical transmitting shaft having pointer at end, and with an arc-shaped graduating plate having a vertical and lateral scale; 5th. The combination of the water wheels or screws, arranged at right angles to each other below the bottom of the vessel, with suitable transmitting devices and registering apparatus, having adjusting screws for regulating motion of indicating hands.

No. 8298. Improvements on an Earth Scraper.
(*Perfectionnements à un éboueur.*)

James H Edmondson, Valparaiso, Ind., U.S., 12th January, 1878, for 15 years.
Claim.—1st. The tilting frame G H I J hung forward of the spindle C, and between the arms B B, in combination with axle-tree A and scraper M; 2nd. The combination of the lever N, axle-tree A, with arms B B, tilting frame G H I J and scraper M; 3rd. The combination of the lever Q, tilting frame G H I J, axle-tree A, arms B B and scraper M; 4th. The curved slotted supports V V, in combination with the arms H H of tilting frame and scraper M; 5th. The loop eyes U, in combination with draft chain S and scraper M.

No. 8299. Improvements on Locomotive and Traction Engines.
(*Perfectionnements aux machines locomotives et de traction.*)

Loftus Perkins, London, Eng., 14th January, 1878, (Extension of Patent No 1992) for 5 years

No. 8300. Improvements on Belt Shifters.
(*Perfectionnements aux change-courroies.*)

Thomas N Egery, Bangor, Me., U.S., 14th January, 1878, for 5 years.
Claim.—1st. The combination of the roll a, frame b and universal joint c whereby said roll is enabled to move simultaneously both upon the horizontal and perpendicular axis of said joint; 2nd. The combination of the roll a, frame b and joint c with forked lever f and guiding flange e.

No. 8301. Machine for Threshing and Cleaning Grain.
(*Machine à battre et nettoyer les grains.*)

William Giberson, Belleville, Ont., 14th January, 1878, for 5 years.
Claim.—1st. The perforated sieve, or the equivalent thereof, suspended over the shoe of a cleaner and receiving its motion in the manner shown; 2nd. The double crank shaft H, furnished with the crank bearings I I, boxes F, flange boxes G and pulley J in combination with the perforated sieve A, hangers E, loops K and pivot pins D.

No. 8302. Improvements on Gig-Saws.
(*Perfectionnements aux scies à brûler.*)

Joseph Best, Montreal, Que., 14th January, 1878, for 5 years.
Claim.—1st. The combination of the saw L, arms H, links I and belt N; 2nd. The combination of the saw L, projection E₁ and arm F₁, having projection H; 3rd. The combination of a slide D, with arms H and links I; 4th. The combination of the slide C₁ having projection E₁, with arm F₁ having projection H₁; 5th. The combination of the slide C₁ having projection E₁ and arm F₁ having end K₁ with the bolt M₁; 6th. The combination of the adjustable steadment V, having friction roller A₁ with the saw L.

No. 8303. Lubricating Car Axle Grease.
(*Graisse à lubrifier les essieux des wagons.*)

George H Merrill, Boston, Mass., U.S., 14th January, 1878, for 5 years.
Claim.—The combination of tallow, tar, lmo, water, whitening, flaxseed, flour, Venetian red and rosin.

No. 8204. Improvements on Spice Chests and Tea Canisters.
(*Perfectionnements aux boîtes à épices et à thé.*)

James H Preater, Brooklyn, N.Y., U.S., 14th January, 1878, for 5 years.
Claim.—1st. In combination with spice holder or box, the segmental front f, side plate g pivots i and cut off or plate h; 2nd. The combination in the spice holder or box, of the swinging segmental front f, supply plate m and agitators n.

No. 8305. Improvements in Boilers.
(*Perfectionnements dans les chaudières.*)

Thomas Hoag, Springfield, Mass., U.S., 14th January, 1878, for 5 years.
Claim.—1st. A boiler A provided with two or more movable compartments B and D, with a perforated pipe C passing through them, and soar-

anged that steam arising from A₁ is admitted into the said compartments, but when condensed does not return to A₂ or penetrate from one compartment to another; 2nd. The tray or hub B supported by the flange b and having a perforated false bottom g and drip can c, in combination with the perforated tube C and one or more pans D provided each with a perforated false bottom h; 3rd. The externally located tube H provided with a glass gauge I, in combination with the boiler A.

No. 8306. Improvements on Drilling Machines.
(*Perfectionnements aux machines à forer.*)

Andrew Jarlino, Hespeler, Ont., 21st January, for 5 years
Claim.—1st. The sliding frame having arms d e, in which is journaled the shaft f, hollow arm k, sliding in arm a of the frame A and carrying the drill spindle j, provided with pinion i meshing with bevelled and wheel h, on shaft f arms m o the former sliding on rail p of the frame A, and carrying the arms q r which terminate in arm s sliding in arm c of the frame A, and provided with a bridge having a bearing u, bearing on the end of the drill spindle j; 2nd. The arm z of the sliding frame, provided with a spiral groove 4 and connected to the feed screw l, by sleeve 2, having set screw 3, for taking up the frictional wear; 3rd. The feed lever 7 fulcrumed to the arm e and operated by the cam 8, on shaft f and provided with a pawl 6, in combination with a ratchet wheel 5 and feed screw l for imparting automatic feed motion to the drill.

No. 8307. Method of Dressing Sheep and Removing Wool from Pelts.
(*Méthode de préparer les moutons et d'enlever la laine des peaux.*)

Dennis Harrington, Woodbridge, N.J., U.S., 21st January, 1878, for 5 years
Claim.—1st. The method of preparing mutton for shipment and market as specified; 2nd. The process of removing wool from sheep skins by dipping the carcass of the sheep in hot water and pulling the wool from skin before the skin is removed from the animal.

No. 8308. Improvements in Wind Instruments.
(*Perfectionnements dans les instruments à vent.*)

Elias P Needham, New York, U.S., 21st January, 1878, for 5 years.
Claim.—1st. The combination with the reeds of a reed instrument, of a sheet of paper, or other suitable material, perforated with holes corresponding with the note of a tune, and with the air passages and means by which the same is passed over the reeds; 2nd. In combination with the reeds chamber, the endless perforated sheet a, the perforations of which correspond with the air inlets of said reed chamber, to produce a tune or chord, and otherwise arranged to form a valve to exclude the air except at such perforations as described; 3rd. The combination with the endless perforated sheet L, of the reed chamber f, the bellows g and means by which the whole is operated; 4th. The combination with the endless perforated sheet or belt L, and the reed chamber f, of the shaft i, provided with the roller u of the pressure roller or rollers q arranged to propel the sheet; 5th. The combination with crank h, shaft i, rolls u and q of the crank K, one or more of them arranged to operate the bellows; 6th. The combination with the shaft i, of the roll z, one or more, and the roll q, one or more, when either of them or all are made of elastic material and arranged to move the sheet of perforated music; 7th. The combination with the shaft i and roll of the roll or rolls q, secured to a hinged or removable part of the instrument and arranged so as to allow the sheet or belt L to be readily inserted and firmly held between the same; 8th. The combination with the reed chamber f, bellows g and endless sheet L, of the case A B C D, arranged so that the same can be readily opened and the sheet inserted or exchanged; 9th. The combination with the automatic reed instrument of the resonant s; 10th. A continuous sheet of perforated music arranged to be drawn across the reed openings and around the bellows; 11th. The combination with the automatic instrument consisting of the reed chamber C, and endless sheet or belt and operating mechanism of the case provided with the top E; 12th. An automatic wind instrument operated by means of an endless perforated sheet passing across the reed openings and around the bellows, when the reed chamber and the bellows are secured at one end, so that the perforated endless sheet may be readily adjusted over the reeds and around the bellows; 13th. The combination with an automatic reed instrument operated by an endless sheet or belt, of the hinged end or side of the case by means of which the substitution of one endless sheet for another is facilitated; 14th. The combination with the roller or rollers q, of the hinged arm o and spring p; 15th. An automatic reed instrument in which an endless sheet of perforated material is made to exclude the air from the reeds, and admit air to the same without any intervening mechanism.

No. 8309. Improvements on Harvesting Machines.
(*Perfectionnements aux moissonneuses.*)

George Fieldon, Dundas, Ont., 21st January, 1878, for 5 years.
Claim.—1st. The combination of trip cam A, trip link D, gate lever E, guide F, cam gate M and presser bar G; 2nd. The combination of trip link D, chain N and trip cam A.

No. 8310. Manufacture of Tan Bark into bales.
(*Mise en ballots de l'écorce à tan.*)

Rosanna C Gould and Sarah G Day, Montreal, Que., (Assignees of Jonathan Sherman, Jr Chicago, Ill., U.S.) 21st January, 1878, for 5 years.
Claim.—A bale of rolled and compressed bark.

No. 8311. Improvements on a Printing Press.
(*Perfectionnements à une presse d'imprimerie.*)

William Heckert, Providence, R.I., U.S., 21st January, 1878, for 5 years.
Claim.—1st. The stationary vertical cylinder K, fixed solidly at its lower end to the bed plate A (the upper end being left free), provided with a plane surface that serves as a bed for the type, the revolving plate U fixed to the upper end of shaft F, arranged to revolve in the axis of the said cylinder, the heads P P₁ P₂ (one or more) arranged to slide inways, in said plate U, and

In which are fixed the axle shafts of the inking rollers that depend from the said heads, and are pressed toward the said cylinder and type by the springs acting on said sliding heads; 2nd. The combination of the stationary cylinder K, provided with a plano surface that serves as a bed for the type, the reciprocating platen T, the revolving plate U and a pitman pivoted at one end to the said plate, and at the other end to a crank pin in said plate U, the said plate performing the double office of carrying the inking rollers and communicating motion to the platen. 3rd. The combination of the cylinder K, provided with a plano surface that serves as a bed for the type, the revolving plate U, the inking rollers carried by said plate, the platen T that carries in its arms I 1, the feed rollers D 1 D 2 D 3 with the perforating apparatus F 1, attached to and carried by said arms; 4th. The combination in a printing press of the cylinder K, provided with a plano surface that serves as a bed plate for the type, the revolving plate U, the inking rollers carried by said plate, the plate T, that carries on its arms I 1, the feed rollers D 1 D 2 D 3, with the cutting or shear blades 11 11 11 attached to and carried by said arms I 1; 5th. The feed mechanism consisting of the arms a, the pawl a, the sliding block V, and all constructed and arranged to be actuated from the crank pin G, in the gear d, whereby an intermittent movement is given to the feed roller D, 6th. The eyelet reservoir mounted upon the platform P 1, constructed and arranged to be lowered and raised by the movement of the platen T, 7th. The combination of the platen T, the lever K 1, incline X and punch J 1.

No. 8312. Process of Manufacturing Wooden Bottle Stoppers and Bungs. (*Procédé de fabrication des bouchons de bouteilles et boudons en bois.*)

Frank A. Howig, San Francisco, Cal., U. S., 21st January, 1878, for 5 years.

Claim.—1st. A new process for heating wood, for making elastic bottle stoppers and bungs, consisting in removing the resinous and gummy matters by treatment with strong alkaline solutions, and then subjecting it to steam or hot water, and subsequent treatment with glycerine and paraffine or wax, or their equivalents, 2nd. Elastic wooden bottle stoppers or bungs impervious to liquids and gases, prepared in the manner set forth.

No. 8313. Improvements on Machines for Crimping Leather for Boots and Shoes. (*Perfectionnements aux machines à cambrer les cuirs à chaussures.*)

Samuel W. Jamison, Brooklyn, N. Y., U. S., 21st January, 1878, for 5 years.

Claim.—1st. The combination with a crimping tree, or plate of jaws, for crimping or smoothing the material, arranged in pairs and mounted in trucks movable upon stationary and rigid ways, and mechanism for imparting lateral movements to said jaws toward each other, 2nd. The combination with the movable truck, of a jaw carrying box movable within said truck, 3rd. The combination with the movable truck and jaw carrying box, of a right and left hand screw forming the fulcrum of a lever to be opened from without the truck; 4th. The combination with the jaw carrying box, operated to move within and transversely to the path of the truck, by means of a right and left hand screw, of an automatically operated lever to rotate said screw; 5th. The combination with the movable truck on the stationary frame and the jaw operated by a lever, of an adjustable stop-fast to a fixed portion of the frame and actuating the lever within said movable truck, to turn the screw at the proper intervals of time, 6th. The combination with the jaw hung upon a box operated by right and left hand screw and lever, of the automatically shifted weight upon the lever for operation; 7th. The general arrangement of supporting and hanging the jaws, whereby each jaw of any pair of jaws may adjust itself independently of the other with respect to the crimping tree; 8th. The manner of hanging the jaws to the trucks by means of links; 9th. The smoothing jaws arranged in opposite pairs, both being attached to their respective trucks by hinge joints, so as to admit of each being tilted upon its lower end, 10th. The smoothing jaws arranged in opposite pairs, the one being hinged at its lower end to the truck, while the lower end of the other is hinged to a box movable within the truck, both jaws having toggle joint connection at their upper ends with their respective trucks, 11th. The combination with the smoothing jaws hung at their upper ends to their respective trucks, by means of toggle joints, of levers to operate said toggle, for the spreading of the jaws apart; 12th. The combination with one of a pair of smoothing jaws, of the mechanism whereby the hinge by which its lower end is secured to the truck is made automatically to move towards and away from the crimping tree, 13th. The combination with the belt-shifting device, of the system of levers, bell cranks and connecting rods or their mechanical equivalents operated by cam fast to one of the trucks to shift the belts automatically and to reverse the machine at the completion of either stroke; 14th. In combination with the belt-shifting device and the means for automatically operating the same, the hand lever and latch, with the angular cam and treadle, to operate the same by hand or foot at the pleasure of the operator; 15th. In combination with the crimping tree and crimping jaws, and whether the latter are or not used in connection with smoothing jaws, the wrinkle preventer, the same consisting of a plate, the lower edge of which conforms with the upper or crimping edge of the tree, the same being arranged for operation as described; 16th. The combination with the wrinkle preventer, of automatic means for lifting it off and dropping it upon the tree at the proper time, 17th. The crimping jaws shaped so that their action upon the leather on the tree shall be continued on the heel or corner portion of the same, after they shall have ceased to act upon the other portions of the leather; 18th. The crimping tree supports made with lateral slides and with grooves to hold the plate therein, and pins or other fastening device, so as to allow of its ready removal and replacement.

No. 8314. Improvements on Photograph Burnishers (*Perfectionnements aux brunissoirs des cartes photographiques.*)

Joseph P. Bass, (assignee of Emile R. Weston), Bangor, Me., U. S., 22nd January, 1878 (Extension of Patent No. 1993), for five years.

No. 8315. Improvement on Coats.

(*Perfectionnements aux habits.*)

John Paret, New York (assignee of Albert P. Silva, Elmira, N. Y.), U. S., 22nd January, 1878 (Re-issue of Patent No. 7016.)

Claim.—1st. A coat having a supplementary collar inside of the neck or ordinary collar, 2nd. The inside openings for the reception of the supplementary collar ends, 3rd. A coat constructed with inside openings, the ordinary collar and a supplementary or inner folding collar, the ends of which when not in use, are secured in said openings; 4th. A coat sleeve constructed with a mitten connected with or forming an extension thereof, 5th. A coat constructed with sleeves provided with folding mittens connected with or forming parts of said sleeves, 6th. A coat constructed with a supplementary collar upon the inside of the ordinary collar, and mittens connected to or forming extensions of the sleeves.

No. 8316. Improvement in Cigars.

(*Perfectionnement des cigares.*)

Theodore H. Babcock, Brooklyn, N. Y., Francis C. Upton, New York, and Samuel Babcock, Middletown, Ct., U. S., 22nd January, 1878, for 5 years.

Claim.—1st. A cigar permeated at one end by a composition or material ignitable by friction, 2nd. The method of providing a cigar with an end ignitable by friction, by saturating the said end with a liquid composition which becomes hard when dry, and is ignitable by friction; 3rd. A cigar one end of which is permeated by a composition ignitable by friction only when brought into contact with a specially-prepared frictional surface.

No. 8317. Improvement on Follies.

(*Perfectionnement des jantes de roues.*)

William A. Wharton, Belle-Centre, Ohio, U. S., 22nd January, 1878, for 5 years.

Claim.—A vehicle wheel, whose follies are provided with the intermediate detachable blocks B, through which pass the dowel pins.

No. 8318. Improvements in Bottles.

(*Perfectionnements dans les bouteilles.*)

Stephen S. Newton, Binghamton, N. Y., U. S., 22nd January, 1878, for 5 years.

Claim.—1st. The combination with the neck of the bottle, of the coned spring scraper; 2nd. The bottle, having its neck contracted, and provided with openings to permit the return of the liquid to the body of the bottle; 3rd. The combination with the bottle, of the removable contracted neck or throat; 4th. In combination with the neck or discharge opening of a vessel adapted to contain liquids, a stopper and a stopper support arranged centrally of the opening, and to which the stopper is screwed; 5th. A stopper support arranged in combination with a stopper which packs or fits closely both the mouth of the vessel and the stopper support, and prevents the liquid from passing either between the stopper and the mouth of the bottle, or between the stopper and its support, 6th. A bottle neck provided with an irregularly-formed inner surface, in combination with a screw-threaded thumb, secured by said irregularly formed surface, and a stopper having a screw-thread adapted to engage with the screw-threaded thumb.

No. 8319. Improvements on Car-Couplings.

(*Perfectionnements aux attelages de wagons.*)

Amzi Allen and Thomas C. Clark, Marietta, Ohio, U. S., 22nd January, 1878, for 5 years.

Claim.—The combination of the catch bar C, eccentric E, sliding bars O and link L.

No. 8320. Improvements in Hay Rakes.

(*Perfectionnements aux râtaux à foin.*)

Charles A. Massey, Mathew Garvin and William Johnston, New-Castle Ont., 22nd January, 1878, for 5 years.

Claim.—1st. The T headed lever P, attached to the friction band C and passing through the plate B, bolted to the axle-tree A, in combination with the arm E, connected by suitable mechanism to the foot lever L, 2nd. The self adjusting S shaped lever F, fitted within the box H and connected to the arms E by the rods G and short chains G', in combination with the chains passing through the roller bracket K, and connected to the foot lever L by the rod M, or its equivalent, 3rd. The frame O, fitting within a groove cut in the front of the axle-tree A and holding the bent end n of the teeth N for the purpose of protecting the wooden axle-tree A from wear caused by the motion of the teeth N.

No. 8321. Improvement on Slide Valves.

(*Perfectionnement des tiroirs de vapeur.*)

Henry B. Doolittle, Doolittle's Mills, Ind., U. S., 22nd January, 1878 for 5 years.

Claim.—In combination with the bars A A D D D 1, the wrist pin (a) adjustable by means of the screw J.

No. 8322. Process of Manufacturing Steel Scraps into Steel Castings. (*Procédé pour fabriquer la fonte d'acier avec les rublons.*)

Alber. V. Valette and Frederic Dodge, Princeton, Ont., 22nd January, 1878, for 5 years.

Claim.—1st. The process of manufacturing scrap steel into articles of utility, consisting in reducing scrap steel with charcoal, and a flux in a suitable furnace to a molten state, and then adding to the mass, charcoal, blast stone, prussiate of potassa and metallic zinc, and casting the fused mass in moulds to the desired form, 2nd. The process of annealing shapes of steel, cast in a mould of the required form, consisting in immersing the same while in a heated state, in a bath of hot soft water containing corrosive, sublimate and prussiate of potassa, and afterwards greasing and heating in a charcoal furnace, or a retort containing charcoal, for a suitable time according to the bulk of the article.

No. 8323. Improvements on Wash-Stands.

(*Perfectionnements aux lavabos.*)

Charles C. Hall, Boston, Mass., and Robert M. Hall, Mont-Clair, N. J., U. S., 22nd January, 1878, for 5 years.

Claim.—1st. The combination, with a casing of suitable height to adapt it

top to be used for the ordinary purposes of a toilet wash-stand, when closed, and provided with a hinged or removable cover of water tight tank or tub adapted to be extended beyond the limits of the casing for use as a bath tub, and to be retracted within the casing when not in use; 2nd. In combination with a casing provided with a hinged or removable cover or lid, and made of suitable height to adapt its top to be used for the ordinary purposes of a toilet wash-stand or commode when closed, the pivoted tank D adapted to be folded into the casing or extended beyond the same and the seat D; 3rd. The combination with a commode or wash-stand casing of the pivoted tank D, and the brace or pawl F, adapted to engage with the rear end of the tank D, and lock it in position for use; 4th. The combination with a commode or wash-stand casing of the pivoted tank D, brace F and cord d; 5th. The combination with a commode or wash-stand casing provided with a hinged lid or cover, of the pivoted tank D, seat G, and one or more drawers H located beneath said seat and in rear of said tank.

No. 8324. Apparatus for the Manufacture of Drop Shot. (*Appareil de fabrication du menu plomb.*)

Benjamin Tatham, New York, U.S., 22nd January 1878 for 5 years

Claim.—1st. The combination of a shield or cylinder closed at the top and open to the atmosphere at the bottom for retaining heat and keeping currents of cold air from the outside surface of the pan, 2nd. The combination of a dropping pan with a gas flame or other supply of artificial heat applied to the bottom of the pan for regulating and controlling the temperature of the metal in said pan; 3rd. The combination of a dropping pan, a gas flame or other supply of artificial heat situated in the interior of the shield, directly under the bottom of the dropping pan and of a shield or cylinder for retaining heat and keeping currents of cold air from the outside surface of the dropping pan.

No. 8325. Boat Launching Apparatus. (*Appareil à lancer les bateaux.*)

Martin Bourke, Youngstown, Ohio, U.S., 22nd January, 1878, for 5 years

Claim.—1st. The frame pivoted to the supporting bars, and provided with a slot or groove and pins, for the purpose of adapting it for securing the boat until such time as it is desired to release the same; 2nd. The combination of the pivoted bars and jointed blocks and spring dogs, with the pivoted notched boat supporting bars C, for the purpose of preventing the latter falling back toward the side of the vessel; 3rd. The windlass ropes, friction brake and weighted lever, in combination with the boat supporting bars pivoted to the side of the ship; 4th. The combination of a strip catch X, cord O and lever L, with the friction brake h, windlass D and boat lowering bars t; 5th. The combination of the adjustable arm of the trip catch X with the screw threaded shank thereof and the weighted brake lever L.

No. 8326. Compound for Facilitating the Combustion of Anthracite Coal. (*Composé pour faciliter la combustion du charbon dur.*)

DeWitt C. Breed, Buffalo, N.Y., U.S., 22nd January, 1878, for 5 years.

Claim.—The combination of a metallic oxide or salt with a silicate when mixed with carbonaceous fuel.

No. 8327. Improvements on Fare Boxes. (*Perfectionnements aux troncs de wagons.*)

George Beadle, Syracuse, N.Y., U.S., 22nd January, 1878, for 5 years.

Claim.—1st. The combination of the box having dovetailed recesses in its sides, the cross bar K and top B, each provided with corresponding dovetailed projecting ends with the front and rear sides, and receiving chute and locks; 2nd. A fare box provided with a change chute, consisting of two or more parallel or downwardly diverging plates of glass, the space between which is divided into two or more sections by means of sliding gates, whereby the fares may be retained in such sections for inspection; 3rd. The combination of the bottom L, the front glass A, back glass A', parallel or downwardly diverging change chute divided into sections by means of sliding gates and the cover B; 4th. The combination of the rods F provided with slots, the gate D, the ends of which are inserted in said slots, the springs H placed around said rods and abutting against the said gate, with the side of the box, provided with an aperture and a removable plate placed over the same, to facilitate the removal of the gate; 5th. The drawer S provided with the bolt B and register K provided with the lever m, in combination with the casing P; 6th. The drawer S provided with the hinged cover portion c, stop d, and spring z, in combination with the casing P; 7th. The drawer S provided with the discharge chute T, inclined bottom v, lever m and spring n in combination; 8th. The partition O for dividing the receiving chute into compartments; 9th. The partition Q, in combination with the fare receivers N, the receiving chute and the gates C D E.

No. 8328. Process for Desulphurizing Ores. (*Procédé pour desulfurer les minerais.*)

Zabdiel A. Willard, Boston, Mass., U.S., 22nd January 1878, for 5 years.

Claim.—1st. The process of desulphurizing ores by moistening a mixture of the pulverized ore and saw-dust with salt water, and then subjecting the mass to the action of a heated current of air, the current being disseminated throughout the material, and its flow continued until desulphurization is completed; 2nd. The method of preparing pulverized sulphate or other mineral for treatment by intimately incorporating therewith a suitable proportion of saw dust or other similar combustible substance and moistening the whole with water, with or without salt; 3rd. The process of treating a mass of moistened pulverized sulphuret ore, by intimately incorporating with it saw-dust, or similar carbonaceous matter then passing through this mass a current of air, or air and steam, the quantity of steam (if steam be used) being regulated by the operator, whereby combustion is maintained within the retort; 4th. The method of desulphurizing ores containing arsenic or tellurium, or other volatile material, by mixing the ore with saw-dust, properly moistening the mixture, and then passing a current of heated air through the mass, and conducting the vapours and gases rising therefrom at a reduced temperature, into a suitable condensing chamber.

No. 8329. Improvements on a Milk Vessel.

(*Perfectionnements à un vase-lait.*)

Henry Aylmer, Melbourne, Que. 22nd January 1878, for 5 years

Claim.—The inner vessel A surrounded on its sides by an outer vessel B in which is the partition f g and between the wall of which the cooling medium D is placed, and provided with a lip D and inlet C at its upper extremity, and its base with an outlet L.

No. 8330. Improvements on Stone Dressing Hammers. (*Perfectionnements aux marteaux à rabotter les meules.*)

Alexander McDonald, Belmont, Mass. U.S., 22nd January, 1878, for 5 years.

Claim.—1st. The tapered and separate head parts B provided with the rib l and groove c; 2nd. The tapered and separate head parts A and B provided with the rib b, groove c and collar C; 3rd. The tapered and separate head parts A and B, provided with the rib b, groove c, oblique shoulder a and handle socket e; 4th. The tapered and separate parts A and B, provided with collar C, the rib b, the groove c, handle socket e and oblique shoulder a.

No. 8331. Improvements on Lace Curtain Stretchers. (*Perfectionnements aux planches à tirer les rideaux de dentelle.*)

James Gilmy, Toronto, Ont., 22nd January, 1878, for 5 years.

Claim.—1st. The substitution of ogee cross bars as B B, as more suitable, in combination with the clamp C C C, to form an easy adjustable lace curtain stretcher F; 2nd. The stretcher frame F comprising, in combination, the bars A A B B, clamps C C C and the headless brass pins d d d, &c.; 3rd. The headless brass pins d d d, &c. and projecting about three eighths of an inch from the bars A A B B, and leaning at an angle outwards.

No. 8332. Improvements on Axles.

(*Perfectionnements aux essieux.*)

Richard F. Pickard and Henry H. Pickard, Tonawanda, N.Y. U.S., 22nd January 1878, for 5 years.

Claim.—1st. A vehicle axle and hub box consisting essentially of the axle A, having the permanent collar B and removable collar C, collars E, the recessed sleeve F, provided with the wrench section f and arranged to revolve between the collars B E and to screw into the hub C; 2nd. The combination with the axle A having the permanent collar B and screw collar or collars E, and also the oil reservoir I and lubricating groove K, of the recessed sleeve F provided with the wrench section f, the hub box C and the cap J; 3rd. A vehicle axle and box in which the box is attached to a sleeve, said sleeve being arranged to revolve between two collars on the axle.

No. 8333. Improvements on Life Boats.

(*Perfectionnements aux bateaux de sauvetage.*)

Martin Bourke, Youngstown, Ohio, U.S., 22nd January, 1878, for 5 years.

Claim.—1st. The improved life-boat having the top or cover B constructed with inclined sides or angular in cross section, and the hull proper having the slightly rounded bottom greatest breadth at or below the water line, and sides inclined inward; 2nd. The removable deck or cover b, notched flange and screw bolts, in combination with the body of the life boat; 3rd. The life boat provided with the hollow conical projection A; 4th. The combination of the pivoted locking device H with the polygonal paddle shaft; 5th. The improved dead-light formed of the outer or socket tube provided with an inner and outer flange and screw threaded, as shown, the inner tube b for securing the glass and the nut d.

No. 8334. Improvements on Boiler Tube Cleaners.

(*Perfectionnements aux nettoyeurs des bouilleurs.*)

William Dunn and Daniel B. Ruffner, Philadelphia, Pa., U.S., 22nd January, 1878, for 5 years.

Claim.—1st. The jaws A automatically closed by means of the noses B which are swelled, as at C; 2nd. The conical jaws A with a cylindrical base; 3rd. The jaws, in combination with a closing plate at their base; 4th. The conical jaws with shoulders F; 5th. The conical jaws A closing noses B and base covering plate D; 6th. The conical jaws A with a cylindrical base, in combination with the noses B, with swells C; 7th. The tube cleaner, in combination with the guides G.

No. 8335. Improvements on Buckboard Waggon. (*Perfectionnements aux voitures-planches.*)

Andrew King and Robert P. King, Lowville, N.Y. U.S., 22nd January, 1878, for 5 years.

Claim.—1st. The combination of the spring-buckboard A, the arm or bracket C, the pivoted spring brace E, with the axle B; 2nd. The combination of the spring buckboard A, arm C and pivoted double jointed brace E, with the axle B; 3rd. The combination of the spring buckboard A, arm C, brace E and spring B, with the axle B; 4th. The combination of the spring buckboard A, with the spring brace E attached to the underside of the buckboard A at one end, and the other end attached to the axle B or other rigid part, that is attached to the axle; 5th. The spring B, interposed between the axle of the waggon and the end of the spring board A.

No. 8336. Boot and Shoe Pegging Machine.

(*Machine à cheviller les chaussures.*)

Lyman R. Blake, Brooklyn, N.Y., U.S., 22nd January, 1878, (Extension of Patent No. 2014), for 5 years.

No. 8337. Improvements in Tobacco-Cutters.*(Perfectionnements aux hache-tabac.)*

John Farrar and John C. Nichol, Montreal, Que., 22nd January, 1878, for 5 years.

Claim.—1st. The oblong rectangular hollow frame A formed with upright carriage B, planed or wrought to a true surface on its outer face, and with channels C U and opening e, in combination with the cross head G, guides f f and spiral springs g g. 2nd. The knife holder b adapted to work against the planed face of the carriage B, so as to give an oblique or shearing action to the knife, and to cut completely through the plug of tobacco, without coming in contact with any underlying surface. 3rd. The projection m on the inner end of the knife holder b, in combination with the spindle h, arm j, screwed pin k, spring l and stop n. 4th. The spring o or its equivalent; 5th. A tobacco cutter, in combination with an oblong rectangular hollow frame A, a self-acting feeding motion oblique or shearing action completing the cut independently of any underlying surface, adjustable gauge automatically removable when the knife is in action.

No. 8338. Improvements on Snow-Ploughs.*(Perfectionnements aux charrius à neige.)*

George Royal, Truckee, Cal., U.S., 22nd January, 1878, for 5 years.

Claim.—The boxes D pivoted to the angular timbers B B and connected as described, in combination with the adjustable shares or cutters H H, and the fixed mould boards I I.

No. 8339. Improvements on Speaking Telegraphs.*(Perfectionnements aux téléphones.)*

James J. McTigue, Alpsville, Pa., U.S., 22nd January, 1873, for 5 years.

Claim.—1st. The method of producing inducing intermittent currents of electricity in the wire of an electrical coil or helix, by the vibration of the pole or poles, of a permanent or electro magnet within whose field of induction said electrical coil or helix is situated; 2nd. The combination of an electrical circuit, of two or more telephonic or speaking telegraphic instruments, consisting each of a permanent or electro magnet and an electrical coil or helix, said permanent or electro magnet having its pole or poles of diaphragm form, and said electrical coil or helix being situated within the inductive field thereof; 3rd. A permanent or electro magnet, having its pole or poles reduced to the forms of a diaphragm; 4th. A permanent or electro magnet, having its pole or poles diaphragmoidal, in combination with an electro-magnet or coil; 5th. The combination of an electrical coil or helix, with a permanent or electro-magnet having one or both poles of diaphragm form, said coil or helix and pole or poles being adjustable with relation to each other; 6th. In a telephone, the combination with the diaphragm and magnet or diaphragmoidal pole, of an electro-magnet having its core constructed of two or more pieces, or of one piece slit as described.

No. 8340. Improvements on Rolling Slat Shutters.*(Perfectionnements aux persiennes à lames mobiles.)*

William Menzies and William Menzies, Jr., (Assignees of William B. Turner), New York, U.S., 22nd January, 1878, for 5 years.

Claim.—1st. A shutter composed of rolling slats, that may be opened or closed to any desired extent, and left so opened or closed, whether the shutter be in motion or be stationary; 2nd. The slats l provided with twisted blades d; 3rd. The combination of the slats provided with twisted blades

4, of devices for operating in connection with said twisted blades; 4th. The slats l turned by the guides having transverse and oblique movements described, the one upward and the other downward, thus reducing the friction of the operating devices to a minimum; 5th. The combination of the slats l provided with twisted blades 4, of guides 114 49 18 19 and extension pieces 83 20; 6th. The combination of the slats l provided with twisted blades 4, of guides 95 58 and extension pieces 98 55 84 21; 7th. The combination of the slats provided with the twisted blades 4, guides 114 49 18 19, extension pieces 83 20, with the plate 31 provided with slot 45, plate 82 provided with slot 81, plate 29 provided with slot 23, plate 80 provided with slot 79, plate 24 provided with slots 23 28 42 and plate 75 provided with slots 74 89 54; 8th. The combination of the slats l provided with twisted blades 4, guides 95 58, extension pieces 98 55 84 21, plate 61 provided with slot 63, plate 108 provided with slot 107, plate 48 provided with slots 62 47, plate 94 provided with slots 105 93, plate 80 provided with slot 113, plate 31 provided with slot 73, plate 24 provided with slots 44 53 61 71 and plate 75 provided with slots 90 97, 9th. The combination of the devices set forth in the 5th and 6th claims; 10th. The roller 8 provided with the spiral 11; 11th. The roller 8 provided with the weighted links 14 and weight 13, to counterbalance the shutter in any position when over the window or space to be covered.

No. 8341. Combined Table and Clothes Rack.*(Table et séchoir à linge combinés.)*

Lucius H. Goff, Richford, Vt., U.S., 22nd January, 1878, for 5 years.

Claim.—1st. The combination of a pair of leaves A, hinged together as at B, with the legs C having hinges D attaching said legs to said leaves and provided with rails E and F, 2nd. A combined table and clothes rack.

No. 8342. Improvements on Shingle Machines.*(Perfectionnements aux machines à barder.)*

Byron C. Brown, Clinton, Iowa, U.S., 22nd January, 1878, for 5 years.

Claim.—1st. The frame H hung to standards g on carriage G, in combination with the slide blocks h carrying the dogs I, 2nd. The dogs I pivoted in recesses to the slide block h, in the swinging frame H in combination with the adjusting bar K, 3rd. The combination with the carriages B and G, the swinging frame H, pivoted dogs I and adjustable bar K; 4th. The feeding device consisting of rock shelf Y, sleeve and weight R, pawl P, pawl J and spring T; 5th. The adjustable stop E, in combination with the carriages B and G.

No. 8343. Improvements in Steam Engines.*(Perfectionnements dans les machines à vapeur.)*

Benjamin F. Olmsted and William Menzie, St. Thomas, Ont., 22nd January 1878; for 5 years.

Claim.—1st. The combination of the sliding plate E and the intermediate eccentric F, the levelling lug I and cam H, the toggle legs K, together with the tripping cams M, with toggle and lever frame G; 2nd. The combination of the governor sliding cams L, the radiating cams e and the lock levers N.

No. 8344. Improvements on Vehicle Wheels.*(Perfectionnements aux roues de voitures.)*

Alvah A. Philbrick, Coldwater, Mich.; U.S., 22nd January, 1878; for 5 years.

Claim.—1st. The combination of the hub A with enlargement A, and spokes B B, the screw rim or collar C and the tubular thimble D having aperturing screw end a, for screwing under and forelug outward the spokes.

List of Patents issued up to 12th February, 1878, but not yet Officially published in the Patent Office Record.

No. 8350. J. H. Stone, Hamilton, Ont., "Kerosene Lantern," (Re-issue of Patent No. 2156), 26th January, 1878.

No. 8351. W. Fawcett, Omaha, Neb., U.S.A., "Ladles for Metal Foundry," 26th January, 1878.

No. 8352. H. C. Sergeant, New York, U.S.A., "Paving Block Former and Presser," 26th January, 1878.

No. 8353. W. A. Cates, Union, Oregon, U.S.A., "Geographical Clock," 26th January, 1878.

No. 8354. F. A. Buck, Eastport, Maine, U.S.A., "Anchor," 26th January, 1878.

No. 8355. M. Smith, Springfield, Vt., U.S.A., "Scythe Fastener," 26th January, 1878.

No. 8356. D. C. Ebaugh, Charleston, S.C., U.S.A., "Disintegrating Mill," 26th January, 1878.

No. 8357. H. C. Sergeant, New York, U.S.A., "Rock Drill," 26th January, 1878.

No. 8358. G. B. Richmond and A. Beamer, Lansing, Mich., U.S.A., "Hydro-Electric Telephone," 26th January, 1878.

No. 8359. G. A. Dickson, Shortsville, N.Y., U.S.A., "Hay and Grain Unloader," 26th January, 1878.

No. 8360. C. H. Rubicum and E. Henderson, (Assignees of H. S. Miller), Philadelphia, Pa., U.S.A., "Coasting Sled," 26th January, 1878.

No. 8361. W. P. Trowbridge, New-Haven, Ct., U.S.A., "Steam Generator," 26th January, 1878.

No. 8362. W. S. Mayo, Ottawa, Ont., "Box Matching Machine," 26th January, 1878.

No. 8363. F. W. Tuerk, Berlin, Ont., (Assignee of F. W. Tuerk, jr., Chicago, Ill., U.S.A.), "Hydraulic Motor," 26th January, 1878.

No. 8364. R. P. Street, Hamilton, Ont., (Assignee of C. H. Haynes, Boston, Mass., U.S.A.), "Lawn Sprinkler," 26th January, 1878.

No. 8365. Jas. Good, Toronto, Ont., "Oven Attachment to Coal Stove," 26th January, 1878.

No. 8366. E. Gray, Chicago, Ill., U.S.A., "Morse-Telephonic Way Duplex Telegraph," 26th January, 1878.

No. 8367. O. B. Kendall, Buffalo, N.Y., U.S.A., "Flue Cleaner," 26th January, 1878.

No. 8368. J. Goldie, Galt, Ont., "Steam Engine," 26th January, 1878.

No. 8369. C. A. Hotchkiss, Bridgeport, Ct., U.S.A., "Curry Comb," 26th January, 1878.

No. 8370. T. Draper, Petrolea, Ont., "Pump," 26th January, 1878.

No. 8371. C. Duquet, Quebec, Que., "Telephone," 1st February, 1878.

No. 8372. E. Buell, Henvolton, N.Y., U.S.A., "Rotary Churn" 1st February, 1878.

No. 8373. C. F. Ham, Rochester, N.Y., U.S.A., "Locomotive Head Light," 1st February, 1878.

No. 8374. W. Chalmers and W. N. Reynolds, Detroit, Mich., U.S.A., "Contrivances for Ironing and Fluting Linen, &c.," 1st February, 1878.

No. 8375. S. E. Griscom, Pottsville, Pa., U.S.A., (Assignee of I. Moore, Cole's Creek, Pa., U.S.A.), "Millstone Dressing Machine," 1st February, 1878.

No. 8376. G. E. Marvin, D. S. Jackson and M. Farrington, (Assignees of W. H. Johnson, Delhi, N.Y., U.S.A.), "Metal Neck Yoke," 1st February, 1878.

No. 8377. Jas. Boydell, Kingsley, Que., "Sleigh Check," 1st February, 1878.

No. 8378. J. E. Stebbins and M. J. Starr, Asago, Iowa, U.S.A., "Baking Oven," 1st February, 1878.

No. 8379. E. F. Robbins, Reading, Mass., and N. T. Gorham, Boston, Mass., (Assignees of E. Robbins, Barnstable, Mass., U.S.A.), "Anchor Tripper," 1st February, 1878.

- No. 8380. J. Fensom, Toronto, Ont., "Hoisting Machine," 1st February, 1878.
- No. 8381. J. A. Forden. (Assignee of J. E. Thomas), West Bay City, Mich., U.S.A., "Boiler Cleaner," 1st February, 1878.
- No. 8382. J. Bowling, London, Eng., "Filter Press," 1st February, 1878.
- No. 8383. A. Kline, Bond Head, Ont., "Fanning Mill," 1st February, 1878.
- No. 8384. E. J. Lockwood, Danbury, Ohio, U. S. A., "Bolt Lock," 2nd February, 1878.
- No. 8385. The Neptune Fog Horn Co., Quebec, Que. (Assignee of G. Srennor, Montreal, Que.), "Fog Signal," 6th February, 1878.
- No. 8386. G. N. Geddes, Glenmarris, Ont., "Railway Frog Protector," (Extension of Patent No. 2055.) 11th February, 1878.
- No. 8387. C. H. Denison, Bay City, Mich., U.S. A., "Index Book," 11th February, 1878.
- No. 8388. W. Hamilton, Peterborough, Ont., "Jack Ladder," (Extension of Patent No. 2043.) 11th February, 1878.
- No. 8389. A. C. Cowon, Alexandria Bay, N. Y., U.S.A., "Milk Cooler," 12th February, 1878.
- No. 8390. A. Whittemore, Cambridgeport, Mass., U.S.A., "Peg Cutter," 12th February, 1878.
- No. 8391. G. Morehouse, Orangeville, Ont., "Washer and Wringer Combined," 12th February, 1878.
- No. 8392. H. L. Doolittle and J. Averill Jr (Assignees of Jas. Harman) Champlain, N.Y., U.S. A., "Force Pump and Rain Combined," 12th February, 1878.
- No. 8393. T. W. Mather, New Haven, Ct., U. S.A., "Steam Boiler Feed," 12th February, 1878.
- No. 8394. B. Rowell, West Sparta, and H. G. Bond, Rochester, N. Y., U.S.A. "Car Coupler and Uncoupler," 12th February, 1878.
- No. 8395. P. Vollmar, Senforth, Ont., (Assignee of J. Naylor jr. Rochester, N.Y., U.S. A.) "Slave Jointer," 12th February, 1878.
- No. 8396. C. A. Dodge, Chicago, Ill., U. S. A., (Assignee of G. H. Waldo, Plattsburg, N.Y., U. S. A.) "Pounder Washing Machine," 12th February, 1878.
- No. 8397. T. Dill, Toronto, Ont., "Cut-off Valves for Steam Engines," 12th February, 1878.
- No. 8398. E. E. Gilbert, Montreal, Que., "Art and Apparatus for Drilling under Water," 12th February, 1878.
- No. 8399. L. Leigh and A. Saunders, Pittsfield, Mass. U. S. A., "Dye Compound," 12th February, 1878.
- No. 8400. N. Tagn and L. Survillo, Moscow, Russia, "Method of Measuring Heights by Means of a New Apparatus called Manometrical Altimeter," 12th February, 1878.
- No. 8401. P. Dillon, Sherbrooke, Que., J. Cleary, Great Falls, N. H., U. S. A., G. H. Bradford, Sherbrooke, Que., and A. J. Cleveland, Richmond, Que., "Soldering Machine," 12th February, 1878.
- No. 8402. A. B. Burns, Amherbury Que., "Process for Manufacturing Dry Hop Yeast," 12th February, 1878.
- No. 8403. T. Kenyon, Hamilton, Ohio, U. S. A., "Adjustable Pump Bucket," 12th February, 1878.
- No. 8404. M. O'Brien, St. Mary's, Ont., "Grate for Fire-Box of Steam Boilers," 12th February, 1878.
- No. 8405. C. Hammelmann, Buffalo, N.Y., U.S.A., "Portable Forge," 12th February, 1878.
- No. 8406. A. W. McKown, Honesdale, Pa., U. S. A., "Vehicle Spring," 12th February, 1878.
- No. 8407. G. G. Munger, Rochester, N. Y., U. S. A., "Lubricating Compound," 12th February, 1878.
- No. 8408. N. Van Loon, St. Cloud, Minn., U.S.A., "Wire Cable Machine," 12th February, 1878.
- No. 8409. W. Dunn, Hamilton, Ont., "Seal Locks," 12th February, 1878.
- No. 8410. G. H. Clark and E. H. Gregory, Lapeer, Mich., U.S.A., "Wind Wheel," 12th February, 1878.
- No. 8411. B. M. Sherman, Flint Mich., U.S.A., "Jack Screw and Lifting Jack Combined," 12th February, 1878.
- No. 8412. G. Sweet, and S. D. Faulkner, Dansville, N. Y., L. Sweet, Wellsville, N.Y., U.S.A., and J. Watson, Ayr, Ont., "Harvester," 12th February, 1878.
- No. 8413. T. Gray, Newmarket, Ont., "Portable and Stationary Fence," 12th February, 1878.
- No. 8414. J. Jameson, Kenyon, Ont., "Truss," 12th February, 1878.
- No. 8415. A. A. Gamsby, (Assignee of J. Monilton), Arona, Ont., "Churn Power," 12th February, 1878.
- No. 8416. J. K. Dimmick and F. A. Stine, Cincinnati, Ohio, U. S. A., "Stove and Fire Place," 12th February, 1878.
- No. 8417. G. H. Clark, Lapeer, Mich., U.S.A., "Stump Extractor," 12th February, 1878.
- No. 8418. J. Brokenshire, Kingston, Ont., "Mineral Fire-Proof Roofing," 12th February, 1878.
- No. 8419. J. Cooper and E. Foscar, Schornberg, Ont., "Treshing Machine," 12th February, 1878.

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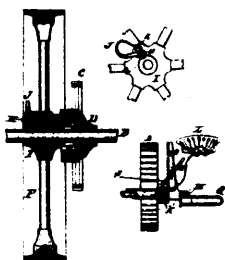
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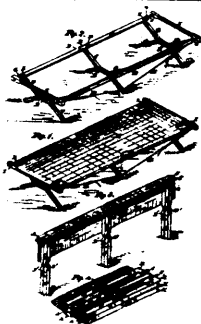
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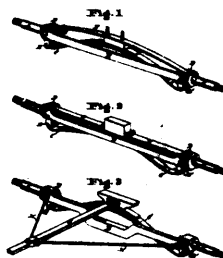
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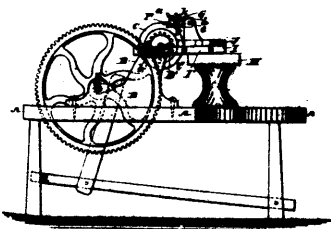
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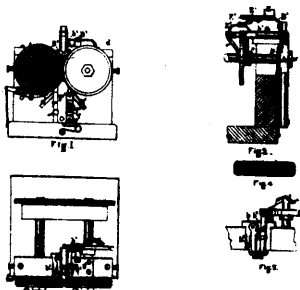
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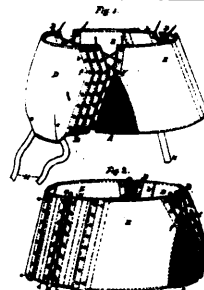
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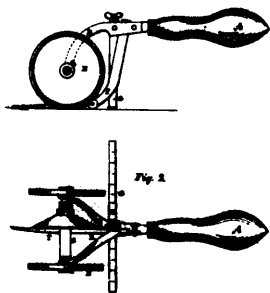
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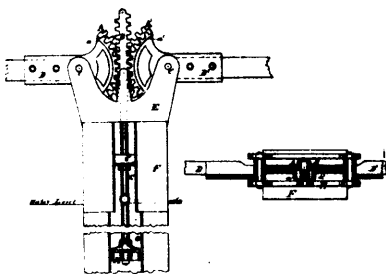
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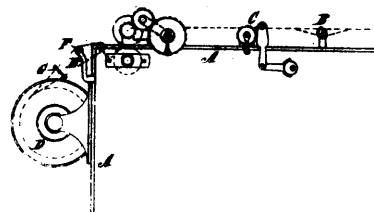
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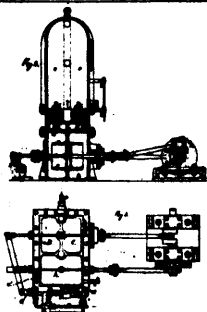
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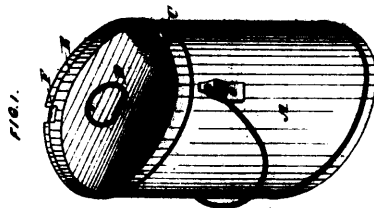
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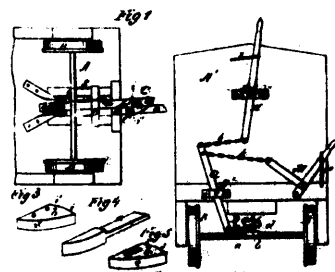
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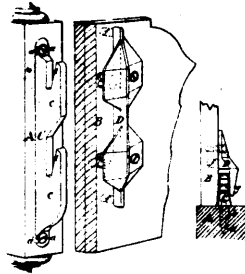
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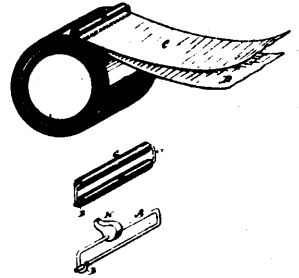
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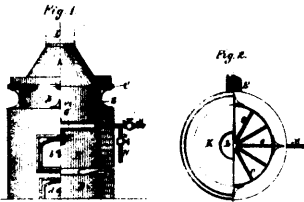
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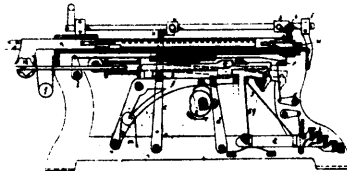
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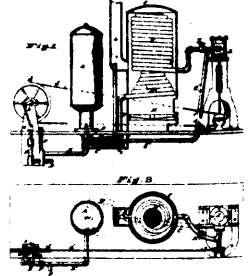
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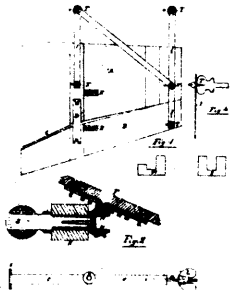
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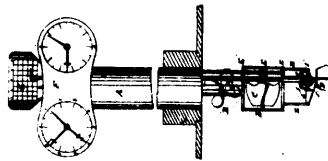
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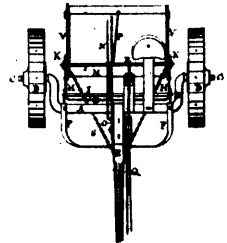
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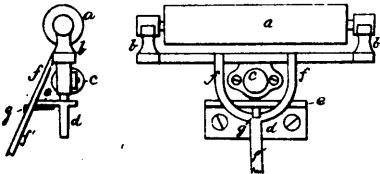
8296 Bennett's Improvements on Fanning Mills.



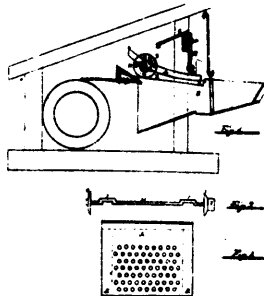
8297 Carroll's Improvements on Nautical Logs.



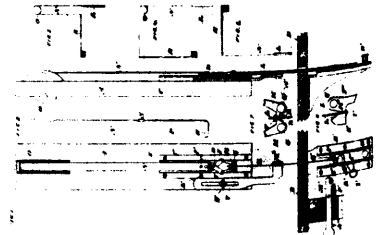
8298 Edmondson's Improvements on an Earth Scraper.



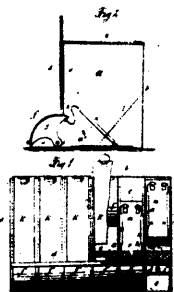
8300 Egery's Improvements on Belt Shifters.



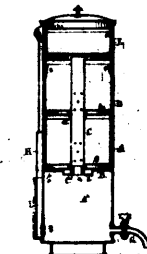
8301 Giberson's Machine for Threshing and Cleaning Grain.



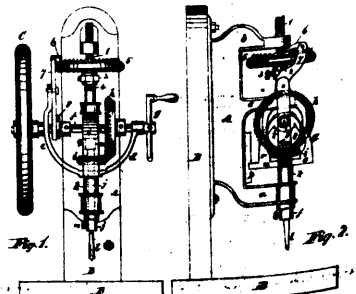
8302 Best's Improvements on Gig-Saws.



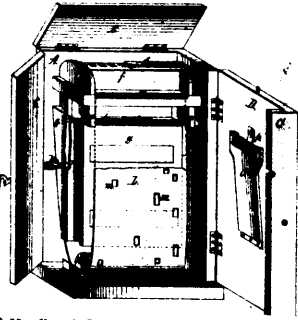
8304 Preater's Improvements on Spice Chests and Tea Canisters.



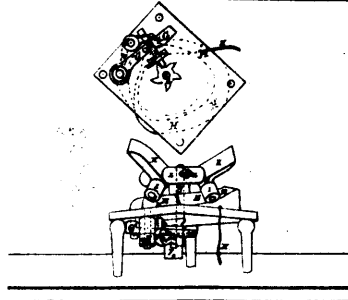
8305 Hoag's Improvements in Boilers.



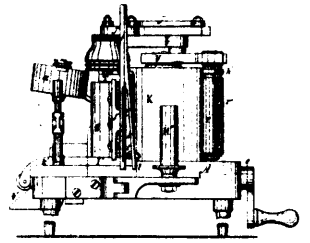
8306 Jardine's Improvements on Drilling Machines.



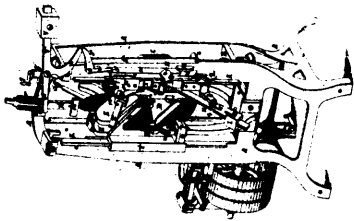
8308 Needham's Improvements on Wind Instruments.



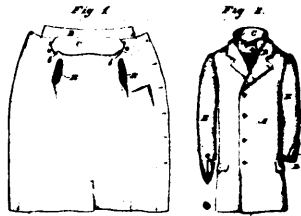
8309 Fielden's Improvements on Harvesting Machines.



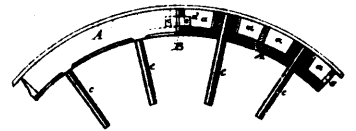
8311 Heckert's Improvements on a Printing Press.



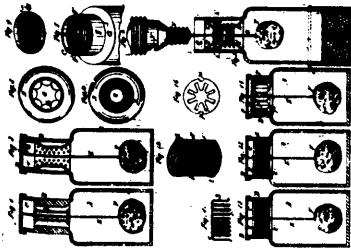
8313 Jamison's Improvements on Machines for Crimping Leather for Boots and Shoes.



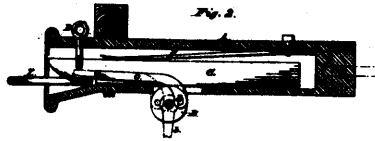
8315 Silva's Improvement on Coats



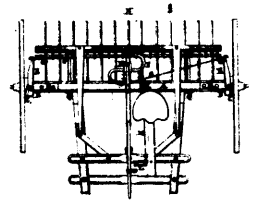
8317 Wharton's Improvement on Fellies.



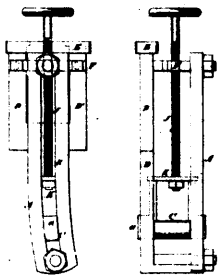
8318 Newton's Improvements in Bottles.



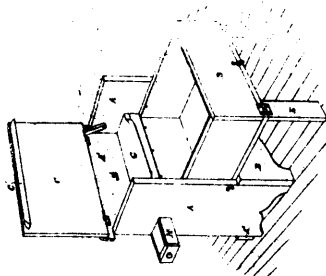
8319 Allen & Clark's Improvements on Car Couplings.



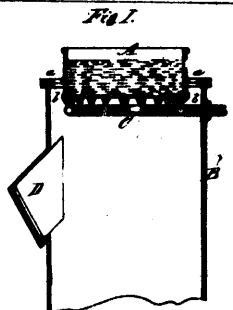
8320 Massey, Carvin & Johnston's Improvements in Hay Rakes.



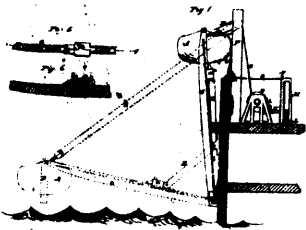
8321 Doolittle's Improvements on Side Valves.



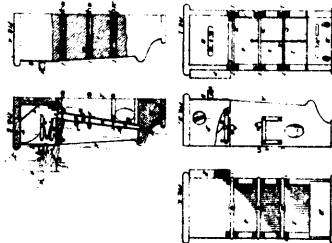
8323 Hall's Improvements on Wash Stands.



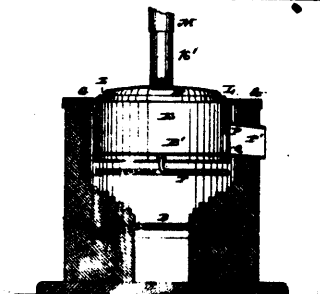
8324 Tatham's Apparatus for the Manufacture of Drop Shot.



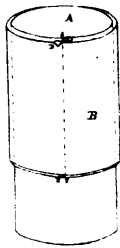
8326 Bourke's Boat Launching Apparatus.



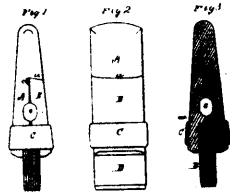
8327 Beadle's Improvements on Fare Boxes.



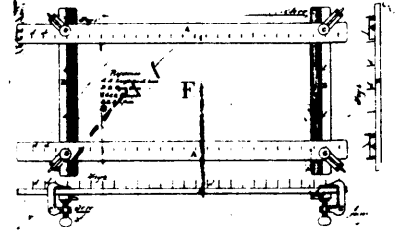
8328 Willard's Process for Desulphurizing Ores



8329 Ayler's Improvements on a Milk Vessel.



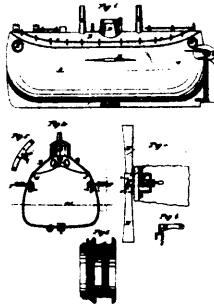
8330 McDonald's Improvements on Stone Dressing Hammers.



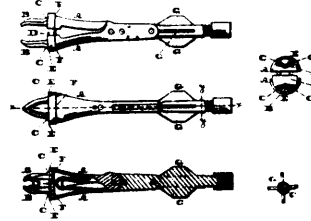
8331 Gilray's Improvements on Lace Curtain Stretchers.



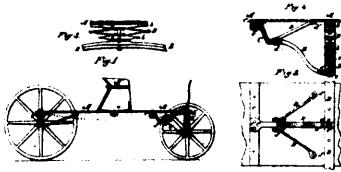
8332 Pickard's Improvements on Axles.



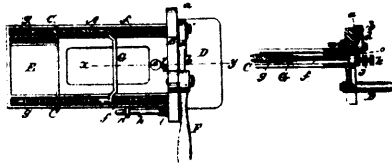
8333 Bourke's Improvements on Life Boats.



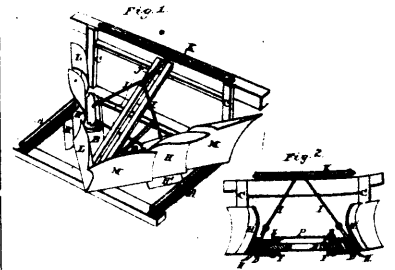
8334 Dunn & Ruffner's Improvements on Boiler Tube Cleaners.



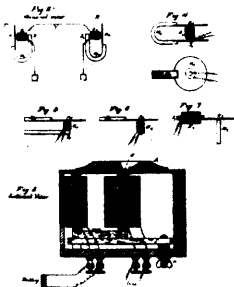
8335 King's Improvements on Buckboard Wagons.



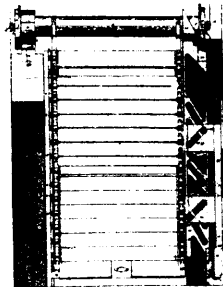
8337 Farrar's Improvements in Tobacco Cutters.



8338 Royal's Improvements on Snow Ploughs.



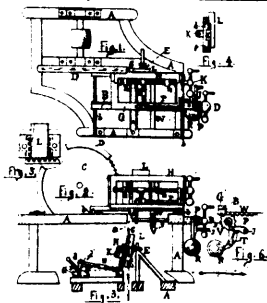
8339 McTighe's Improvements on Speaking Telegraphs.



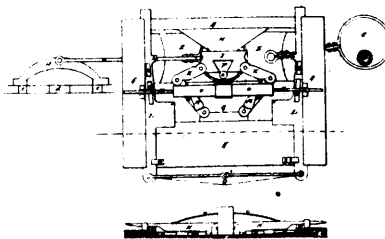
8340 Turner's Improvements on Rolling Slat Shutters.



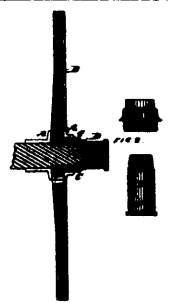
8341 Goff's Combined Table and Clothes Rack.



8342 Brown's Improvements on Shingle Machines.



8343 Olmsted's Improvements in Steam Engines.



8344 Philbrick's Improvements on Vehicle Wheels.