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INVENTIONS PATENTED.

No. 1901. CHARLES LEVEY, Toronto, Ont., 18th December, 1872, for 5 years: "Improvement in Steam Engines." (Perfectionnement dans les chaudières à vapeur.)

Consists of a general simplification of the steam engine by placing the working parts in the most favorable position to resist the strain, thereby reducing the weight of material used and diminishing the labor and cost of fitting, etc.

Claim.—1st. Widening the bed or frame of a horizontal engine at one end as shown at *b*, fig. 2, so that an entire cylinder can be dropped down to the centre of its diameter without otherwise increasing the width of the bed; 2nd. Casting the cylinder and bed in one piece so that the centre of cylinder is in the plane of the top of the bed; This is illustrated by fig. 18, if the flanges *e, e*, are removed, 3rd. The form or design of bed as shown with enlargement at fig. 2, *b*, to facilitate the removal of cylinder cover; 4th. Forming the shaft bearing in the bed or frame and adjusting the same as shown in figs. 1, 4, 5, 6 and 7, and 5th. Dividing the steam-jacket and casting one half with the bed and the other half with the steam-valve or steam chest and inserting an entire cylinder or sleeve between the halves as shown in figs. 8, 9, 10, 11 and 12.

No. 1902. LOUIS SMITH, Sherbrooke, Que., 18th December, 1872, for 5 years: "Process of treating Wood for the Manufacture of Paper." (Procédé de traitement du bois pour la fabrication du papier.)

Relates to a method of preserving the fibre of the wood whilst being reduced into pulp, by arresting the process at a certain stage of the operation.

Claim.—1st. The application to the apparatus or boiler of a tester or regulator *n, n*, for testing materials during the process of reduction from wood or other kindred substance to a fibrous pulp; and 2nd. The application of a safety valve *l*, to a rotary apparatus or boiler.

No. 1903. EDMUND A. DAY, Oberlin, Ohio, U.S., 18th December, 1872, for 5 years: "A Hose Valve." (Une valve de tuyau élastique.)

An adjustable elastic nozzle attached to a metallic tube.

Claim.—1st. The lever handles *C, C*, cross bars *E, E*, and *E*, and springs *F*, in combination with the barrel *A*, hose *B*, and adjustable elastic nozzle *B'*; 2nd. In combination with the cross-bars *E*, and *E*, the two separate elastic bands or springs *H* and *I*.

No. 1904. NELSON W. GOODRICH, Vergennes, Vt., U.S., 18th December, 1872, for 5 years: "A Horse Shoe Nail Machine." (Machine à clou à cheval.)

For smoothing, pointing, and shearing horse shoe nails after they have been formed in an ordinary machine.

Claim.—1st. The concentric cylinders *A, B*, to adapt them for carrying and holding the nails, while being operated upon by the dies and punches; and 2nd. The combination of the dies *C, I*, punches *D, G, H*, sliding-plate *E*, and endless screw *O*, with the concentric cylinders *A, B*, and with the operating gearing.

No. 1905. FRANCIS W. MALETT, New Haven, Conn., U.S. 18th December 1872, for 10 years: "A Needle Machine." (Machine à aiguilles.)

Relates to a mechanism which receiving the blanks in length for two needles transfers them from one device to another thereby forming the eyes in the centre and pointing the two ends.

Claim.—1st. In a hopper, the two checks *B₁, B₂*, which form the throat *a*, of the hopper, one of which checks is made adjustable so that the said throat may be made of greater or less width; 2nd. In combination with a hopper for supplying the blank wires, the revolving shaft *B₃*, with its cams *a*, arranged in the relative position to the throat *a*; 3rd. In combination with a hopper for delivering the blank wires, the slide *C*, having a longitudinal reciprocating movement and constructed with a slot *C₁*, and provided with a pivoted bar *C₂*, by means of which the said reciprocating movement may be arrested without stopping the other parts of the machine; 4th. In the parallel slides *D*, having an up-and-down and longitudinal reciprocating movement, combined with the jaws *e, e*, to receive and transmit the blanks for successive operations, 5th. In the longitudinal screws *L*, constructed with the hook *f*, at their ends arranged to receive the blanks within the grasp of the said hooks, and combined with the mills *V*, and *G*, *G'*, over which the blank is carried by the said revolving screws; 6th. In combination with the revolving longitudinal screws *L*, the slide *L₁*, and bed *H*, the said slide *L₁*, having a reciprocating movement; 7th. In the longitudinal revolving screws *L*, the slide *L₂*, and the bed *H*, the said slide *L₂*, and the revolving screws *L*, having each a longitudinal reciprocating movement independent of the other, 8th. In the arrangement of the springs *p*, above the flexible strips *m*, in the slide *L₁*; 9th. In the arrangement of the mill *V*, and slotted plate *W*, when to both is imparted a traverse vibratory or reciprocating movement; 10th. In combination with the mills *G, G'*, the bars *P*, and their pressure-spring *R*; 11th. In combination with the mill *G, G'*, bars *P*, and their spring *R*, the auxiliary bar *P₁*, and their adjusting screws *P₂*, to bear upon the said bar *P*; 12th. In combination with the mills *G, G'*, and carrying device for presenting the wires to the said mills, the ribs *T, T'*, when a rapid vibratory movement is imparted to the said ribs.

No. 1906. ALEXANDER A. MURPHY, Montreal, Que., 18th December, 1872, for 5 years: "A Store Stool." (Siège de magasin.)

A revolving and adjustable seat capable of being acted upon by foot-pressure.

Claim.—The standard *a*, of any pattern or design, in combination with the reversible socket *e*.

No. 1907. GEORGE BOLTON, Arnprior, Ont., 18th December, 1872, for 5 years: "A Hot Air Drum." (Un poêle sourd à air chaud.)

Claim.—1st. The combination of the damper and ventilator *A*, with key *B*, connected with the main portion of the drum by a double flanged collar, 2nd. The combination with the hot air-drum *C*, and cone bottom of drum *D*, with smoke-channel *E, E, E*, and *F*, and *G*, air-pipe entrance and discharge.

No. 1908. GILBERT R. WILLETT, Annapolis, N. S., 18th December 1872, for 5 years: "A Washing Machine." (Machine à laver.)

Consists of a fluted roller pressed down by springs bearing upon its centre and attached to a base-piece.

Claim.—1st. The combination of the fluted roller *a*, with the smooth rollers *c, c, c*; 2nd. The springs *d, d*, so connected to the base *f*, that they may be readily detached therefrom, 3rd. The springs *d, d*, connected to the shaft *b*, by caps *g, g*, by means of which the pressure of the springs upon the shaft may be increased, and 4th. The combination of the base *f*, with the buttons *A*, and *i*.

No. 1909. RICHARD HARISON, Waddington, N. Y., U. S., Assignee of Rodney G. Nash, Morrisburgh, Ont., 18th December, 1872. (Re-issue of Patent No. 193.) "Machine for Reducing Wood into Paper Pulp." (Machine à convertir le bois en pâte de papier.)

Claim.—The employment of the wheel *c*, having its periphery of iron or steel roughened, indented or upraised to form cutting or grinding edges thereon.

No. 1910. JAMES DEAN, Detroit, Mich., U. S., 18th December, 1872, for 5 years: "A Slip-Keel and Centre-Board." (Une quille glissante avec sa voie.)

Claim.—1st. The slip-keel or contro-board *C*; 2nd. The shaft *D*, carrying the worm *G*, on an elevated portion of the slip-keel *C*, for raising and lowering the same; 3rd. The combination with the slip-keel *C*, of the strap *K*, and indicator-rod *L*; 4th. The shaft *D*, provided with spirals enclosed in case *H*, and attachments; 5th. In combination with the slip-keel *C*, the shaft *D*, so arranged that it may be tilted as described.

No. 1911. AUGUSTUS DAY, Detroit, Mich., U. S., 18th December, 1872, for 5 years: "A Railway Track Clearer." (Machine à nettoyer les voies de chemin de fer.)

Specially applicable to horse-cars.

Claim.—1st. The construction and arrangement of the shank *B*, with relation to the scraper *A*, draw-bar *C*, and diagonal brace *E*; 2nd. The combination with the draw-bar *C*, and scraper *A*, of the diagonal brace *E*; 3rd. The guard *F*; 4th. The chain *J*, pulley *K*, and crank-shaft *P*, for raising and lowering the scrapers; 5th. The recessed and slotted crank *L*, bar *M*, thumb-piece *d*, latch *e*, and spring *N*, in combination with the cam notch *f*, of the bracket *T*; and 6th. The construction and arrangement of the tumbler *O*, with relation to the crank *T*, and its latch-bar *M*, for locking the latter.

No. 1912. GEORGE MOREHOUSE, Chatsworth, Ont., 18th December, 1872, for 5 years: "Machine for Washing and Wringing Clothes." (Machine à laver et tordre le linge.)

This invention relates to an improvement in that class of washer wherein the clothes are rubbed between a concave corrugated shell and an oscillating convex frame.

Claim.—1st. The combination in a washing-machine having a close-box *A*, of an open concave shell *B*, and oscillating convex frame *E*, of less diameter whereby a graduated space downward is attained for the reception and manipulation of the clothes; 2nd. The combination of a clothes wringer and washer as set forth, the arrangement and application of the friction-roller *H*, and inclined plane *I*.

No. 1913. DAVID B. SPOONER, Syracuse, N. Y., U. S., 18th December, 1872, for 5 years: "A Water Meter." (Un compteur à eau.)

Claim.—1st. A water-meter, the combination of the halves of the shell having the projecting bosses with the diaphragm having a thickness in excess of the distance between the halves of the shell when clamped together, the bosses being adapted to regulate accurately the distance between the halves of the shell, and also the compression of the diaphragm-edge; 2nd. The combination of the disks *b* and the diaphragm *a*, the disks being provided with curved-edges, and being clamped upon the diaphragm only at their edges; 3rd. A water-meter, the combination of a central diaphragm adapted to vibrate between the disks but connected therewith with valve operating mechanism, the disks and diaphragm moving together as one; 4th. In the combination of the diaphragm, disks, disk-arms, and yoke, the disks being clamped upon the diaphragm by the disk-arms which are spread apart and held by the yoke; 5th. The combination of the disks *b*, having the spindles *b₂*, with the arms *c*, having the tapering sockets; 6th. The combination of the casting *A*, having a recess with the partition *d*, and plate *f*; 7th. The moulded rubber partition *d*, of the form shown; 8th. The combination of the disk-arms with the partition *d*, the centre or moving part of the partition being located just above the fulcrum of the arms; 9th. The moulded rubber valve covering *g*, provided with a bearing face upon its sole adapted to rest against the valve-seat when the valves are operated; 10th. The plate *K*, having cast upon it the lower part of the valve-chest and the discharge pipe, the latter communicating with the valve-chest above the plate, and having a discharge end carried below the edge of the plate, in order that the latter may be properly packed; 11th. The combination of the cast stem and valves with the divided valve-chest; 12th. The centres *S*, provided with the notch, in combination with the set screws *r*; 13th. The combination of the links *h*, with the standards *i*, and the carrier *h*, the links being located at the end of the carrier; 14th. The yoke *c*, cast in one piece with the tapering points *e*, *l*, the sides being adapted to spring apart to admit the rigid arms of the lever-arms *f*; 15th. The apex lever *f*, having the centre of its pivot point in line with the centre of the apex *q*; 16th. The combination of the yoke, the apex-lever *f*, with carrier-frame *h*; 17th. The combination of the diaphragms *a* and disks adapted to move together with the disk-arms yoke swinging carrier-frame having the apex and valves, and the apex-lever and apex; 18th. The combination of the prismatic projection *q*, with the prismatic projection *e*; 19th. The combination

of the oscillating yoke carrying the vertically-moving prismatic projection, with the carrier-frame having a corresponding projection; 20th. In a water-meter a pendant carrier-frame adapted to support the valves; 21st. A water-meter the combination of the oscillating yoke carrying the vertically-moving prismatic projection, the pendant carrier-frame having the fixed prismatic projection and the valve rod carrying the valves and the valve-chest; 22nd. The valve-chest provided with the chambers 1, 2, 3, having ports *a*, *a*, *a*, with the central swinging shaft *C*, having the valves *D*; 23rd. The combination of the strap *K*, with the vertically moving rod and the yoke; 24th. A water-meter, the combination of the shaft *C*, having the series of valves adapted to close the ports with the set screws *r*, and the swinging carrier-frame; 25th. A water-meter, the valve chest *A*, provided with the ports *a*, *a*, *a*, the discharge ports *a*, *a*, *a*, having an enlarged area; 26th. A water-meter swinging valve adapted to regulate the supply and discharge of the water; 27th. The shaft *C*, provided with the threaded and plain portions in combination with nuts and valves having threaded and plain portions; and 28th. In a water-meter the combination of a series of valves arranged upon a single shaft with mechanism for holding said valves until the movement of the diaphragm is completed or nearly so, and then shifting the same.

No. 1914. GEORGE SCHATZ & JOHN ZIMMERMAN, Graters' Ford, Pa., U. S., 18th December, 1872, for 5 years: "A Washing Machine." (Machine à laver.)

Consists in the use of a pivoted or swinging dasher with springs and a treadle attachment.

Claim.—1st. In the dasher *C*, in combination with the sliding blocks *e*; 2nd. The combination and arrangement of the lever *D*, provided with a spring *d₁*, located at the rear of the box, the treadle *E*, spring *e*, and rod *d₂*; 3rd. The combination of the dasher *C*, lever *D*, rod *d*, with or without the spring *d₂*; 4th. The wringer-rest *G*, when constructed in through form and made to communicate with the box by an opening; and 5th. The novel combination of the box *A*, lid *B*, dasher *C*, lever *D*, rod *d*, spring *d₂*, treadle *E*, spring *e*, rod *E*, and guide *F*.

No. 1915. WILLIAM NEVERS, Bridgetown, Me., U. S., 23rd December, 1872, for 5 years: "Machine for Propelling a Sleigh on Ice." (Machine pour faire marcher les traîneaux sur la glace.)

Claim.—The wheel *F*, with projecting teeth or brads to cut into the ice, in combination with the sleigh on skates.

No. 1916. ROBERT BLAIN, Barrie, Ont., 23rd December, 1872, for 5 years: "A Portable Bench." (Un banc portatif.)

Claim.—1st. The combination of the legs *C*, the cross-girts *F*, *F*, and arms *K*, with the rod *D*, attaching the same to the seat *a*; 2nd. The back *B*, with the cleats *E*, *E*, and braces *J*, *J*, together with the method of attaching the same to the said seat by the hinges *H*, *H*, *H*, and the spring or bottom *G*, on the arm *K*, to keep the said back *B*, in its place when the said seat or bench is set up.

No. 1917. JOSEPH BEAUDRY, Montreal, Que., 23rd December, 1872, for 5 years: "A Tailor's Square." (Une équerre de tailleur.)

Consists of a flexible and graduated steel blade with adjustable scales.

Claim.—1er. Une équerre de tailleur pour prendre la mesure des habits, la combinaison de la lame d'acier flexible et gradué, *a*, avec les échelles *No. 2*, *No. 3*, *No. 4* et *No. 5*, 2me. La combinaison des échelles mouvantes *No. 3*, *No. 4* et *No. 5*, au moyen des boutons *a*, *c*, *e*, et de la vis d'arrêt, 3me. La formation et le calcul du trapèzoïde *P*, *V*, *O*, *W*, pour tailler le haut des manches

No. 1918. GEORGE GOODYEAR, New York, U. S., 23rd December, 1872, for 5 years: "Improvements on Boots and Shoes." (Perfectionnements aux chaussures.)

Claim.—1st. A shank piece for boots and shoes, consisting of two or more leaves from a single piece of wood or similar material formed by slitting from one end toward the other leaving a portion solid at the said other end; 2nd. A shank piece for boots and shoes formed from a single piece of wood slit from each end toward the centre leaving a portion at or near the centre solid and uncut.

No. 1919. GEORGE GWYNN, New York, U. S., 23rd December, 1872, for 5 years: "A Steam-Engine Packing." (Une garniture de chemin de fer.)

Claim.—1st. The composition for the preparation or treatment of packing composed of Paraffin, India Rubber, lead, zinc, graphite or plumbago, wood saw-dust and quick-silver; 2nd. The wrapping *A*, in combination with the fibrous core *B*.

No. 1920. JAMES W. INNES, Newbury, N. Y., U. S., 23rd December, 1872, for 5 years: "A Potato Digger." (Un extracteur de patates.)

Consists of a shovel, plough and rake so arranged as to dig the potatoes from the soil and deposit them upon the surface.

Claim.—1st. The combination with the shovel-plow A, of the separator or inverted rake D, composed of independently flexible hinged tines; 2nd. The combination of the transversely arranged chain *p*, and its attached links *b*, with independently flexible hinged tines *r*, of the inverted rake D; 3rd. The combination with the main braces B, that support the plow of the teeth E, and their attached trails F, arranged for operation in relation with the shovel-plow A, and 4th. The friction-clamps G, in combination with the pivoted teeth E.

No. 1921. SOCRATES SCHOLFIELD, Providence, R. I., U. S., 23rd December, 1872, for 5 years. "A Cigar Machine." (Une machine à cigares.)

For binding, wrapping and forming cigars.

Claim.—1st. The adjustable outside bearings *b, b*, in combination with the stationary cores *c, c*, and the flexible tubular rolls B, B; 2nd. The combination of the brake Q, and friction driving clamp N, with the loose double-pulley M, M, the driving shaft L, the two straight and cross-belts *p, p*, the loose pulleys I, J, and the clutch K; 3rd. The follower H, arranged to rotate in common with the rolls and having a forward longitudinal movement controlled by friction, by means of the right and left hand screws *r, r*, or either; the pinions *k, k*, or either, and means, including a spring and nut or its equivalent for producing an adjustable elastic hold of the pinions *k*, or either of them; 4th. In the rod and slide or connections Q, R, between the sliding or opening and closing head F, and follower H, in combination with the back-stop *r*.

No. 1922. SAMUEL J. SHAW, Marlborough, Mass., U. S., 23rd December, 1872, for 15 years: "Method of Cutting Soles of Boots and Shoes." (Manière de taller les semelles de chaussures.)

Claim.—1st. A new article of manufacture in a boot or shoe sole formed by uniting, by a lap-joint, in the shank, two pieces of leather of different qualities; 2nd. The patterns A, B, of different qualities of leather, to be divided and formed into soles; 3rd. The combination in a sole of a boot or shoe, of two pieces of leather or other suitable material of different qualities.

No. 1923. THOMAS H. DODGE, Worcester, Mass., U. S., Assignee of Jas. H. Bullard, 23rd December, 1872, for 15 years: "Spool and Spool of Thread Machine Wound for Sewing Machine Shuttle." (Bobine avec fil bobiné à la machine pour une navette de machine à coudre.)

Claim.—1st. An improved article of manufacture consisting of a spool or bobbin of thread machine wound for sewing machine shuttles, the bobbin or spool containing the thread being made solid and from wood and having a barrel A, with parallel sides upon the ends of which are heads B, B, with inner thread supporting barrels *b, b*, outer perpendicular ends *d, d*, and pointed or rounded projecting pivots or journals *d, d*; 2nd. A wooden spool for sewing machine shuttles constructed as described.

No. 1924. SAMUEL SLATER, London, Ont., 30th December, 1872, for 5 years: "Cork and Composition Soles of Boots and Shoes." (Semelles de chaussures de liege et mixtes.)

Claim.—The crimped cork or composition sole cover, which encloses the cork without the sewing in of rands as heretofore necessary, as shown in figure A.

No. 1925. THOMAS MADGETT, Indiana, & JOHN HUDSON, North Cayuga, Ont., 30th December, 1872, for 5 years: "Machine for Trimming Trees." (Un sécateur.)

Consists in the working of a knife blade by a hand lever and rod against a guard for the purpose of cutting off the limbs of trees, such lever and rod being attached to a handle.

Claim.—The combination of the knife A, and shield B, worked by the lever G, attached to the handle F.

No. 1926. LOUIS CÔTÉ, St. Hyacinthe, Que., 30th December, 1872, for 5 years: "Sole Ridge Burnisher." (Un brunissoir de cordonnerie.)

Claim.—The separate rasping or burnishing sleeve C, and the clamping guide D, connected to the arbor A, in the adjustable-gauge E, and its operative-screw *l*, and fork *k*, combined with the rasping or burnishing sleeve C, the clamping guide D, and the arbor A; also in the adjustable-gauge E, provided with the recesses *o*, or the equivalent thereof in combination with the rasping or burnishing-sleeve C, the clamping-guide D, arbor A, and clamp-screw.

No. 1927. MILES FISK, Adrian, Mich., U. S., 30th December, 1872, for 5 years: "Improvement in Churns." (Perfectionnement dans les barattes.)

Claim.—The radial-ribs or flanges C, plates D, inclined wedge-shaped blocks E, teeth F, and long teeth H, constructed and arranged in connection with each other.

No. 1928. SAMUEL STEIN, Rochester, N. Y., U. S., 30th December, 1872, for 5 years: "A Coffin." (Un cercueil.)

Consists of a skeleton frame combined with an interior box having a metallic lining and of a packing of peculiar construction for making the casket air-tight.

Claim.—1st. A burial-casket composed of the skeleton frame A, and the interior box B, made separate from each other and united by screws or nails passing from the box into the mouldings of the frame. 2nd. The construction of the body of the casket of the exterior receptacle D, intermediate metal lining E, and interior box B; 3rd. The combination with the parts D, E, B, and the lid or cover *c*, the packing-rings *g, m*.

No. 1929. JOSEPH WALDEN, Newark, N. J., U. S., 30th December, 1872, for 5 years: "Machine for Fitting Elastic Gores of Gaiters." (Machine à faire les tiges élastiques de chaussures.)

Claim.—1st. The platform plate A, or its equivalent when made to facilitate the placing of the lining and the folding of the edges of the gore opening thereon; 2nd. The plate *rm* A, in combination with the clamps *c, c*, or their equivalent made to receive the shoe-lining and hold it in its adjusted position on said platform while the edges are being creased and folded; 3rd. The guide clamp *c*, or its equivalent made and combined with the platform A, to hold the elastic-gore and furnish a guide to set the back and front of the upper against; 4th. The press plates *d, d*, or their equivalent made and combined with the platform A, to press the gore, the lining and the upper or either two of them together.

No. 1930. JOHN & SYDNEY TURNER, Toronto, Ont., 30th December, 1872, for 5 years: "A Biscuit Machine." (Machine à biscuits.)

Relates to a method of cutting biscuits by attaching the cutters to moveable spindles or guides which are operated by levers so arranged that the power is increased as the cutters enter the paste.

Claim.—The cutter-pan J, secured to the moveable spindles *ll*, in combination with the connecting links I, levers G, raking shaft F, lever E, rod D, and wheel C, arranged and operated as specified.

No. 1931. J. K. OTIS, East Cambridge, & F. W. NICHOLS, Lynn, Mass., U. S., 30th December, 1872, for 5 years: "A Folding Desk." (Un pupitre pliant.)

Claim.—1st. One or more self-supporting hinges *c, c*, consisting of the stationary and moveable portions *b, c*, provided with one or more projections *e*, and one or more holes or recesses *d, d*, in combination with the rod or pivot *a*, and spring *h*. 2nd. The application of the described self-supporting hinge to a folding desk; 3rd. The frames *ll, ll*, with their slots *r, r*, for the reception of the ends of the front L, of the book rack.

No. 1932. FREDERICK P. L. JONES, Digby, N. S., 30th December, 1872, for 5 years: "A Kettle." (Une bouilloire.)

Claim.—One or more projections *c*, or a flat or straight surface as at C, on or near the side or circumference of the bottom of pots and kettles and the flattening D, of a portion of the circumference or side of the bottom under the projection B.

No. 1933. ASAHEL ABELL, Hamilton, Ont., 30th December, 1872, for 5 years: "A Stove-Pipe Damper." (Une clef de tuyau.)

Consists in the application of a pinion to a rack fastened on a pipe so as to regulate the damper with more ease and certainty.

Claim.—The application of the pinion C, to the rack *a*, fastened as described.

No. 1934. JAMES MCCALLUM, Nepean, Ont., 30th December, 1872, for 5 years: "A Sash Fastener." (Un arrête-croisée.)

Claim.—1st. An improved sash fastening device formed and constructed of the tapering disc-plate A, having semi-circular or other shaped ends and longitudinal slot B, as an improved article of manufacture; 2nd. The combination of the tapering slotted disc A, and screw D, when applied to a sash or window-frame.

No. 1935. GEORGE YOUNG, Trenton, Ont., 30th December, 1872, for 5 years: "Sewing Machine Friller, etc." (Lames de machine à coudre.)

Claim.—1st. The sewing machine attachment consisting of the bar B, bent as set forth, provided with a slot C, and having holes K, or other means for securing the hemming, frilling or other attaching device H, as an improved article of manufacture; 2nd. The application to the head A, of a sewing machine of a bent-bar B, provided with a slot C; 3rd. The combination with the head A, and bent-bar B, of a device H, for tucking, frilling and other like operations, and guide G.

No. 1936. HORACE H. BIGELOW, Worcester, Mass., U. S., 30th December, 1872, for 15 years: "A Burred Wire for Rivetting the Soles of Boots and Shoes." (Un rivet pour les semelles de chaussures.)

Claim.—The burred wire as an improved article of manufacture, the burrs extending around or partially around the wire in the form of distinct and independent parallel ridges in contradistinction to a continuous spiral ridge.

No. 1937. SIMON VREELAND, Pottstown, Pa. U. S., 30th December, 1872, for 5 years: "Wheels for Vehicles." (Roues de voitures.)

Claim.—1st. A carriage wheel in which a hollow wrought iron or steel felly is connected by steel spokes to a hollow wrought iron or steel cylinder forming part of the hub; 2nd. The felly composed of a bent-plate or plates of wrought iron or steel and a tire having internal grooves adapted to the edges of the said bent plate or plates; 3rd. The nuts *J* adapted to the interior of the felly and to the threaded ends of the spokes; 4th. The enlargement of the spokes at their opposite ends; 5th. The combination of the hollow cylinder *C*, box *B*, washers *G*, and *H*, and nut *I*; and 6th. The combination of the covered ring *K*, adapted to the axle, with the box *B*, and screw-ring *M*.

No. 1938. JOHN C. RIDER, New Market, N. H., U. S., 30th December, 1872, for 5 years: "A Spool or Spooling Machine." (Machine à bobines.)

Claim.—The combination with mechanism for supporting and advancing the stick (viz: the stationary roots *C*, *at*, and the moveable puppet *B*, and its operative mechanism) the circular-saw *M*, the series of rotary receivers *D*, *E*, *F*, *G*, the boring mechanism (viz: the stop-shaft *a*, and the boring-tool *at*, and its operative mechanism) the mechanism for dressing the ends of the blank (viz: the rotary cutter-heads *z*, *z'*, and their operative mechanism) and the mechanism for reducing such blank circumferentially (viz: the arbors *z*, *z'*) and the carrier *T*, provided with a cutter and mechanism as described for operating them as explained, the said saw and rotary receivers being provided with mechanism for operating them. In combination with the mechanism first claimed in one or more retainers *v*, *v'*, *v''*, *v'''*, arranged and applied for the purpose and provided with mechanism for operating it. In combination with the mechanism first claimed the mechanism, or its equivalent, for stamping the ends of the blanks such consisting of the stamping-heads *X*, *Y*, arranged and provided with operative mechanism. In combination with the mechanism first claimed, the series of inclined guides *d*, arranged relatively to the rotary retainers *D*, *E*, *F*, *G*. In combination with the mechanism or spooling machine first claimed and as arranged therewith the machine for rounding the stick preparatory to its introduction into the said spooling machine.

No. 1939. WILLIAM J. KEEP, Troy, N. Y., U. S., 30th December, 1872, for 5 years: "A Furnace for remelting iron and other metals." (Fourneau à refondre le fer et autres métaux.)

Claim.—1st. The method of melting iron; 2nd. A remelting furnace two or more cylinders for containing separately, the metals to be operated upon and the fuel for combustion, when the same are so arranged that the metal and fuel shall descend by the force of gravity as rapidly as the former melts and the latter consumes, so as to keep up a constant supply of said articles at the melting point; 3rd. A remelting furnace in which separate cylinders are employed for containing the metal and fuel, a fuel magazine having its lower end formed of or from grate bars; 4th. The peculiar construction of the bed-plate of the cupola *A*, by means of which a receptacle is formed for the reception of molten metal, and ashes are prevented from falling into the same; 5th. The peculiar construction of the bed-plate of the cupola by means of which the heat from the fuel is concentrated and caused to reach all of the fuel; 6th. A remelting furnace in which the fuel is contained within a magazine separate from the compartment for containing the metal; a cupola having the whole or a part of its interior contracted immediately above the blast openings; 7th. The hot blast oven *P*, in which the compartment *R* and *R'*, and the valves *Y* and *Z*, are arranged; 8th. In the inlet and outlet passages of the hot blast oven *O* and *U*, respectively and controlled by means of the valves *Y* and *Z*; 9th. The air duct *A'*, provided with the openings *a*, arranged within or upon the hot-blast oven and combined with the slide *B*, provided with the series of openings *b*, and *b'*; 10th. In combination with the hot-blast oven and cupola, the valve *N*, pivoted to or within the upper end of said cupola and the valve *C*, pivoted within the exit-flue *U*; and 11th. In a remelting furnace, a cupola provided with a removable portion of its wall.

No. 1940. WILLIAM J. KEEP, Troy, N. Y., U. S., 30th December, 1872, for 5 years: "Cooking Stove and Stove-pipe Damper." (Poêle de cuisine et clef de poêle.)

Claim.—1st. A stove-grate provided upon its upper side with a series of transverse ribs, which is raised above the surface of its longitudinal bars; 2nd. The means employed for preventing the grate from dumping while being shaken, consisting of the shaker *N*, provided with the lug *n*, and connected to or with the outer end of the spindle or pivoted-bearing *M*, in combination with the lug *c*, secured to and projecting horizontally outward from the side-plate *C*, or their equivalents; 3rd. A metal lining for a fuel-chamber so constructed that the expansion caused by a high degree of temperature shall increase its vertical dimensions without changing

its length; 4th. A metal lining for a fuel-chamber consisting of an impervious rear-wall *O*, and a perforated front-wall *Q*, meeting at their upper edges and from thence extending downward and apart so as to form an air-space *o*, having its lower side within the fuel-chamber; 5th. A water-back constructed with a lower-front channel for receiving and containing the water to be heated, and a rear-upper channel for the reception and passage of said water when heated; 6th. The water-back *P*, having its front edge serrated so as to form the projections *p*; 7th. The rearward extended portion *q*, of the rear end-plate or casing *D*, of the centre vertical flue, in combination with the contiguous portion of the reservoir *Q*, and with the heating-chamber *R*, surrounding the lower part of said reservoir and extending below the top oven-flue; 8th. The driving flue *R'*, situated in front of the lower portion of the reservoir *Q*, and between the same and the rear casing *D*, of the vertical flues when its upper end and the lower side of its only opening into such flues are upon such a line as to cause the heated escaping products of combustion to enter said flue at the same point and angle, whether the direct or reversed draught is employed; 9th. A heating chamber for enclosing the lower portion of a water-reservoir situated in rear of the vertical flues and with its bottom below the oven-top, when the passage thereto for the entrance of the heated escaping products of combustion is on a line with said oven-top; 10th. The chamber *R*, provided with the rabbit *r*, formed within its exterior vertical side-walls for containing the upper edge of the warming closet *U*, in combination with said closet; 11th. A register-collar *B*, fitted from within into an opening in a pipe; 12th. A register-collar *B'*, fitted from within into an opening in a pipe and held in position by means of outward pressure; 13th. In combination with a register-collar provided with a central opening *C*, a register *E*, having a central-boss *E'*, which corresponds to and fits into said opening; 14th. A register *E'*, placed upon or against the inner side of the collar *B*, and held in position by the outward pressure of the damper; 15th. The register *E'*, provided with the central opening *f*, in combination with the damper *G*, provided with the axial-bearing *H*; 16th. In combination with the register *E*, and damper *G*, the lugs *e*; 17th. In combination with the register *E'*, and damper *G'*, the crank *L*, connected with and operating both of said parts; 18th. In the device as a whole consisting of the collar *B*, provided with the face or seat *C*, openings *D*, and *c*, and flange *b*, the register *E*, provided with the boss *E'*, central opening *f*, and lugs *e*; the damper *G*, provided with the bearings *g*, and *h*; and the crank *L*, when the several parts are constructed as shown, and combined with each other and with the pipe.

No. 1941. ANDREW HUNTER & EGBERT H. OSBORNE, Quincy, Ill., U. S., 3rd January, 1873, for 5 years: "Machine for Cleaning Grain." (Machine à nettoyer les grains.)

Relates to a frame of perforated plates to which is imparted a quick vibratory horizontal movement susceptible of being suddenly checked at necessary intervals—also to a screened chute with vertical movement and to a hopper provided with a feed slide.

Claim.—1st. The relation and construction of the frame *E*, and chute *F*; 2nd. The combination of the cam-wheels *I*, and levers *l*; 3rd. The combination of the frame *E*, levers *l*, friction rollers *p*, springs *o*, and cam-wheels *I*; 4th. The bumper-screws *q*; 5th. The combination of the levers *l*, springs *o*, and bumper-screws *q*; 6th. The combination of the levers *l*, springs *o*, bumper-screws *q*, and cam-wheels *I*; 7th. The combination of the frame *E*, levers *l*, friction rollers *p*, springs *o*, cam-wheels *I*, and bumper-screws *q*; 8th. The cam-wheel *I*, provided with equidistant and opposite teeth; 9th. The cam-wheels *I*, in combination with the levers *l*; 10th. The levers *l*; 11th. The combination of the cam-wheels *I*, levers *l* and *L*; 12th. The combination of the chute *F*, cam-wheels *I*, and levers *l*; 13th. The combination of the chute *F*, cam-wheels *I*, and levers *L*; 14th. The feed-slide *C*, so arranged that in moving its edges shall be parallel with the edge of the feed-slat *a*; 15th. The hopper *B*, in combination with the feed-slide *C*; 16th. The agitator consisting of the bar *E*, and flexible standards *p*, secured to the chute *F*; 17th. The agitator in combination with the chute *F*; 18th. The combination of the agitator and the frame *E*; 19th. The hopper *B*, provided with the agitator described and feed-slide *C*; 20th. The set screws *S*; 21st. The combination of the frame *E*, levers *l*, springs *o*, cam-wheels *I*, chute *F*, and set-screws *S*; 22nd. The combination of the frame *E*, levers *l*, springs *o*, cam-wheels *I*, chute *F*, levers *L*, and set-screws *S*; and 23rd. The combination of the frame *E*, levers *l*, springs *o*, cam-wheels *I*, and chute *F*.

No. 1942. WENDELL R. KING, Chicago, Ill., U. S., 3rd January, 1873, for 5 years: "A Baling Press." (Une presse d'emballage.)

Claim.—The horizontal levers *A*, *A'*, pivoted at one end with the other ends suspended by a chain and hoisting tackle, in combination with the frame *B*, and support *H*.

No. 1943. JOHN K. COLLETT, Pilton, Wales, U. K., 3rd January, 1873, for 15 years: "Process of Packing and Preserving Meat." (Procédé pour emballer la viande.)

Claim.—The process of packing and preserving hams, bacon and other cured meats in flour or meal.

No. 1944. LORENZO D. BENNER, Boston, Mass., U. S., 3rd January, 1873, for 5 years: "Manufacture of Paper Bags." (Fabrication des sacs de papier.)

Relates to the construction of a paper bag folded in such manner that when opened it assumes a square or rectangular shape in cross section.

Claim.—A paper bag formed with folds *b, c, d, e*, substantially as described.

No. 1945. JOHN FENSOM, Toronto, Ont., 3rd January, 1873, for 5 years: "Machine for Turning." (Mécanisme de tour.)

Claim.—1st. The construction and adaptation of the bed or frame *A*, for the purposes required, namely, for placing the various pieces of mechanism forming this arrangement; 2nd. The communication of motion to the turning mandrel or other shaft *B*, which is done by placing the driven wheel *D*, directly upon said mandrel or other shaft *B*, on which the wheel or pulley is being turned, and the placing of the turning mandrel or other shaft *B*, in journal boxes, instead of between centres as in turning lathes; also, the turning of wheels and pulleys on their own shafts; 3rd. The communication of motion to one or both ends of the slide rest screws *F*, from the turning mandrel or other shaft *B*; 4th. The combination and arrangement of the shafts *m, n*, spur-wheels *K* and *D*, pinions *p, p*, turning mandrel or other shaft *B*, and pulley *L*.

No. 1946. DAVID TURBAYNE & GEORGE M. WYMAN, Boston, Mass., U.S., 3rd January, 1873, for 5 years: "A Horse Shoe Nail Machine." (Machine à clou à cheval.)

Consists in forming the hopper or conductor with the gate to be opened by the outward pressure of the nail-blanks, in combination with the interceptor which being thrown into position by the opening gate, stops the further supply of blanks to the rolls.

Claim.—1st. The plate or conductor *e*, having the gate held by a spring or other device and arranged to be opened by pressure of accumulating blanks. 2nd. The plate *e*, having a passage formed with the flaring sides *o*, for pressing the accumulating blanks against the gate; 3rd. In combination with the gate *i*, the hook or interceptor *r*.

No. 1947. SUMNER BLODGETT, Glover, Vt., U.S., 3rd January, 1873, for 5 years: "A Clothes Wringer." (Machine à tordre le linge.)

Claim.—1st. An improved clothes-wringing machine, constructed with two elastic rollers the lower of which is suspended in vertical or upright irons *K*; 2nd. The combination and arrangement of the tub platform *B*, with the roller-frame *A*, and its rollers *C, D*; 3rd. In suspending the lower roller by means of vertical or upright irons *K*, in combination with springs *b*, the whole being arranged and applied to the said rollers and its frame; 4th. The arrangement of the adjusting screws *I*, and their washers with the springs *b*, as applied to the lower of the rollers; and 5th. The pivoted or reversible inclined plate *H*, in combination with the roller-frame *A*.

No. 1948. WILLIAM R. CLOUGH, Newark, N. J., U. S., 3rd January, 1873, for 5 years: "A Paper Fastener." (Une agrafe à papier.)

Claim.—1st. The blank *A*, for paper fasteners formed with one or more longitudinal central incisions *B*, and with undivided ends; 2nd. A paper-fastener formed by doubling a piece of metal so that the ends come together to form the shanks *c, i*, of the fastener, the other end of this double piece being slitted so as to constitute two or more members which are bent at right angles with the shank so as to form the head of the fastener.

No. 1949. BENJAMIN GOULDTHORPE, Mimico, Ont., 3rd January, 1873, for 5 years: "A Rail Fence." (Une clôture de pieux.)

Claim.—The combination of the posts *A*, strainers *B*, braces *c*, common rails *E*, notched, forming a straight rail-fence.

No. 1950. ROBERT FIELD, Buffalo, N. Y., U. S., 3rd January, 1873, for 5 years: "A Machine Treadle." (Une marche de machine.)

Invention consists in a connecting link or bar by which a double oscillating pulley is attached to any style of sewing machine and the machine prevented from running backwards.

Claim.—The connecting link *b*, or its equivalent, and in combination with the fly-wheel *B*, and the double clutch *C*, and oscillating pulleys *D, D*.

No. 1951. HUGH FAIRGRIEVE, Hamilton, Ont., 9th January, 1873, for 5 years: "A Compound Engine Double Faced Slide Valve." (Tiroir à double plaque frottante de machines combinées.)

Consists in the removal of friction from the valve—thereby causing an economy of steam.

Claim.—1st. The construction of the valve *A*, as shown upon the plan with and without the cut-off valves *b, b*, applied thereto; 2nd. The wedge shape of the working faces of the valve *A*, for working between the angular faces of the two cylinders *C* and *D*; 3rd. The pipe *p, p*, as applied to conduct the ports *x, x*, as shown in figs 6 and 7, with a tap or stop-valve in it to release any undue cushioning in the cylinder *D*, and also to admit live steam from the boiler directly to the large cylinder *C*, while working the engines by hand.

No. 1952. JAMES MALONE, Drummondville, Ont., 9th January, 1873, for 5 years: "Coupling of Bob-Sleighs." (Accouplement de traîneaux à billots.)

Claim.—The swivel king-bolt *F*, the circular end of reach *E*, passing through hole in bolster *B*, and the bounds *D, D*, fastened in lug, bolster.

No. 1953. TERENCE SPARHAM, Brockville, Ont., 9th January, 1873, for 5 years: "Composition for Covering Steam Boilers." (Composition pour couvrir les chaudières à vapeur.)

Claim.—A composition of matter composed as follows: plumbago, soapstone and mica, eight parts, oil, three parts, paint-dryer, one part, all or any two or more of said ingredients mixed together in or near the proportions and for the purposes named.

No. 1954. JOEL LYONS, Chippawa, Ont., 9th January, 1873, for 5 years: "Boot and Shoe Stretcher." (Une forme brisée.)

Claim.—1st. The combination of the lever *D*, and ratchet *H*, working upon the notched-bar *B*; 2nd. The combination last *K, L*, with adjustable toe part *K*, and slotted instep leathers *R*.

No. 1955. JAMES ARMSTRONG, Toledo, Ohio, U. S., 9th January, 1873, for 15 years: "Feed Water Heater and Filter." (Appareil à chauffer et filtrer l'eau d'alimentation des chaudières à vapeur.)

So arrange that all the lime, mud, and other impurities may be abstracted therefrom in their passage through the heater and filter to the boilers.

Claim.—1st. The pans *P, R*. 2nd. In combination with the case *A*, enclosing the pans *P, R*, the filter-box *J*; 3rd. The feed-water heaters the pivot-valve *D*, operated by the lever *E*, rod *P*, and float *G*; 4th. The covers of the case *A*, and filter-box *J*, secured thereto by the set screws *a*.

No. 1956. JAY C. CRAMER, Strathroy, Ont., 9th January, 1873, for 5 years: "Machine for Removing Hay." (Machine à transporter le foin.)

Relates to the combination of a car with four or more wheels adjusted in such a manner by means of a four sided frame-work, as to run on a double sided suspended tramway.

Claim.—The construction of a car *c, d*, with wheels *a, n*, and *j, i*, adjusted in such a way by means of two-four sided frames such as *e, f, g, h*, one on each side of car, that the said wheel may run on a double sided suspended tramway *a, b*, two wheels *a* and *n*, being on the upper-side of tramway and two or more wheels *j* and *i*, running on the lower and opposite side of the tramway, also the adaptation of the tramway *a, b*, for such purpose, in the four-sided frame *e, f, g, h*, one on each side of the car and tramway with angles at *a* and *n*, above the tramway to which the upper wheels are attached and on which they revolve in any other shaped frame on either side of tramway which may project above the same sufficiently to give an upper centre as *a, a* and *n, n*, for two wheels to revolve on; in making the platform of car *c, d*, and the frame-work *e, f, g, h*, in one or more pieces, in the rope-latch *k, k*, passing through the platform of car and adjusted with the longer and heavier end downwards and at such an angle that it will drop on the rope at *l*, and lock it without spring or other apparatus except a knot or catch on the rope.

No. 1957. EDGAR J. JARVIS, Toronto, Ont., 9th January, 1873, for 5 years: "A Cup Chain Water Lifter." (Une chaîne à godets.)

Consists of a series of iron cups or buckets on an endless chain supported by a revolving drum.

Claim.—The cups or buckets *A*, hinged together and forming an endless chain in combination with the drum *B*, spikes *C*, and lips *D*.

No. 1958. PIUS L. SHEPLER, Toledo, & FRANCIS M. HEATH, Whitehouse, Ohio, U. S., 9th January, 1873, for 10 years: "Attachment to Sewing Machines for Tucking and Braiding." (Lames des machines à coudre.)

Relates to the construction of attachments to the presser foot-bar and the cloth plate of the machine—the two operating together.

Claim.—1st. The presser foot *F*, and guide-plate *E*, provided with the needle hole *i*, in combination with the plate *D*, and folder *B*, for tucking and sewing down tucks; 2nd. The presser foot *F*, and guide-plate *E*, when provided with the slot *h*, and needle-hole *i*, in combination with the plate *D*, and folder *B*, for sewing on edgings, insertions, etc.; 3rd. The presser foot *F*, provided with the hook *o*, slot *h*, and needle-hole *i*, for the purpose of sewing on braid.

No. 1959. JOHN H. OSBORN, Guelph, Ont., 9th January, 1873, for 5 years: "A Sewing Machine Shuttle." (Une navette de machine à coudre.)

Claim.—1st. The application of slots or prisms *F* and *D*, to sewing machine shuttles for the purpose of facilitating the adjustment of the thread therein; 2nd. The guard *a*, in combination with the slot or prism *F*.

No. 1950. JOHN BURKE, Sullivan, Ind., U. S., 9th January, 1873, for 10 years: "Process of Manufacturing Soap." (Procédé de fabrication du savon.)

Claim.—The compound composed of the following parts: common hard soap, sal-soda, unslaked lime, water, alum, borax and benzine, substantially, in the proportions and for the purpose set forth.

No. 1961. HUGH FAIRGRIEVE, Hamilton, Ont., 10th January, 1873, for 5 years: "Compound Engine Single Faced Slide Valve." (Tiroir à simple plaque frottante pour les machines combinées.)

Claim.—The valve A, as adapted to its operation within the valve-chest B, also in the sole use of the said valve-chest B, and the adjustable pressure valves V and W, as applied for the purpose of balancing the said valve A, together with the sole application of the invention to either compound or single cylinder engines.

No. 1962. LOFFUS PERKINS, London, Eng., 10th January, 1873, for 5 years: "Improvements on Locomotives and Portable Steam Engines." (Perfectionnements aux locomotives et aux machines à vapeur portatives.)

Claim.—1st. The combined arrangement or construction of portable or locomotive engines; 2nd. The construction of the steam-boilers of locomotive or portable steam-engines; 3rd. The construction of the fire-box of the steam-boiler; 4th. The manner of forming the joints *d*, and other steam-pipe connections; 5th. The employment of a narrow packing ring of copper or other metal, or a narrow projecting surface for forming a tight-joint between the cylinder cover and flanges, and also where flange joints are used in other parts, of locomotive or portable steam engines; 6th. The construction of the condenser of portable and locomotive engines, whereby the steam is retained until condensed, and can yet blow-off should any undue pressure come upon the interior of the condenser.

No. 1963. GEORGE BOLTON, Amprior, Ont., 10th January, 1873, for 5 years: "A Stove-Pipe Elbow." (Un coude de tuyau.)

Claim.—1st. The combination of the raised inner sections "A, A, A," with the outer sections "B, B," the inner sections "A, A, A," having been first beaded and rounded in the centre, the whole joined together as described; 2nd. The rivetting of the sections "A, A, A," and "B, B," on the throat or inner rim.

No. 1964. WILLIAM P. SCOTT, Chatham, Ont., 10th January, 1873, for 5 years: "A Car Coupler and Buffer." (Un attache-char avec tampons.)

Consists in the peculiar construction of the automatic coupler and its working parts and in a buffer sleeved on the draw-bar and draw-head.

Claim.—1st. The draw-head A, At, draw-spring J, link E, pivoted on the pin or bolt L, and provided with the spring E, the guide-tube F, pin D, dog H, and dog-spring G; 2nd. The combination with the guide-tube F, pin D, and dog H, of the slide C, provided with the tongue C', and stud C'; 3rd. The combination with a draw-head A, and draw-spring J, of the buffer B, when the buffer is sleeved on the draw-head and has slots in the sides for the same purpose, as the buffer, and is actuated by the draw-spring.

No. 1965. PETER MUNSINGER, Mitchell, Ont., 10th January, 1873, for 5 years: "A Pump." (Une pompe.)

Relates to a means for operating two pistons in the pump cylinder in connection with a tilting working beam.

Claim.—1st. The combination with the pump-head of the shaft I, working-beam J, connecting rods K, arms H, piston-rods F, G, and pistons D, whereby the piston-rods operate in a direct line with the cylinder B; 2nd. The combination of a hollow piston-rod G, internal piston-rod F, and pistons D, alternately approaching and receding from each other.

No. 1966. HARRY ELLENDER, Hamilton, Ont., 10th January, 1873, for 5 years: "Car-Coupling." (Un attache-char.)

Claim.—The combination and arrangement of the several parts, namely: the pincher joint-d clasp, or holder C, the arrow-headed tongue A, with shank or holder L, the springs D, for closing the jaws of holder, the pivot E, the lever-wedge F, and lever G, and ratchet H, the springs K, for holding shank in centre of hunter in the whole, in connection with the hunters I.

No. 1967. CHARLES P. HOLMES, New York, U. S., 10th January, 1873, for 5 years: "A Horse Breast Collar." (Une bricole de cheval.)

To prevent chafing by friction.

Claim.—1st. A breast-collar formed upon a metal band composed of more or less sectional parts a, b, c, d, e, hinged together, and padded; 2nd. A breast-collar having the front portion furnished with a downward curved part C, to drop and be below the wind-pipe.

No. 1968. RICHARD M. WANZER, Hamilton, Ont., 10th January, 1873, for 5 years: "A Sewing Machine Stand." (Une table de machine à coudre.)

Relates to a device for instantaneously securing a sewing machine to its stand without the use of thumb-screws or similar contrivances, so that a machine can be rapidly changed from foot to hand or "vice-versa."

Claim.—The construction of a sewing machine stand having a recess B, of any size, on the top of the stand, to receive the slab C, or its equivalent as shown in fig. 1.

No. 1969. JOHN VAN B. CARTER & JAMES DWYER, Detroit, Mich., U. S., 10th January, 1873, for 5 years: "A Base Burning Stove." (Un poêle à charbon dont le foyer est à la base.)

Claim.—1st. The reservoir M, provided with the plates L, and the combustion sleeve N, provided with the air-ducts J, arranged within the cylinder of a base-burning stove with relation to a draught register K, or equivalent device; 2nd. The hopper O, provided with the supporting studs I, for supporting it above the magazine M; 3rd. The rotating and tilting grate P, when provided with the jointed arms N', the latter with the cavity in its end; 4th. The spider Q, Q', for supporting the grate; 5th. The plate R, provided with the studs P, P, in combination with the grate-arm and the slot G, of the ash-pit top; 6th. The depression A₁, in the base-plate A, which with the ash-box-bottom forms the base-flue; 7th. The prolongations B₁, B₂, of the side-walls of the ash-box and the flanges d, d, of the section E, and an oven or a plain back-plate, which in combination with the fire-pot, form the back-flue; 8th. The double-walled oven F, provided with the partitions F₁, projecting into and closing the back-flue of a base-heating stove to compel the heated currents to pass around the oven before finding an exit at the smoke-pipe; 9th. The construction and arrangement of the base-plate A, A, ash-box B, fire-pot C, annular sections D, E, G, G', K, cover L, magazine M, combustion sleeve N, plates A, air-ducts J, register K, hopper O, duo H, damper J, and smoke-pipe I; 10th. The combination with the sleeve N, of the adjustable finger-plate N₁, 11th. The sectional ash-drawer front D₁.

No. 1970. HENRY S. WOODRUFF, Janesville, Wis., U. S., 20th January, 1873, for 5 years: "A Buckle." (Une boucle.)

The object of this invention is to relieve the brace-strap or belt from strain at the point where it is perforated for a buckle-tongue.

Claim.—1st. A fixed tongue on the outer-face of the forward-bar E, of frame A, in combination with a loose curved draft-loop; 2nd. The frame A, tongue D, and loose curved draft-loop B, when the whole are not constructed, combined together, and used, as set forth.

No. 1971. ELIJAH MCCOY, Ypsilanti, Mich., U. S., 10th January, 1873, for 5 years: "A Steam Engine Lubricator." (Un graisseur de machine à vapeur.)

An automatic feeder erected on and acting in connection with the valve-chest of the engine.

Claim.—1st. The cap A, stem A₁, and cap A₂, having the tube B, rod C, valve D, piston E, and cock H; 2nd. The combination with the elements named of the spring F; 3rd. The regulator-stem G, in the cap of a lubricator for regulating the lift of its valve.

No. 1972. CHARLES M. NESS, York, Pa., U. S., 14th January, 1873, for 15 years: "Iron and Steel Manufacturing Process." (Procédé de la fabrication du fer et de l'acier.)

Consists in immersing iron, whether wrought or cast, in a bath composed of carbon or silicon steel, (an ore containing silica, metallic iron, alumina, magnesia, and phosphorus) combined with cinder, and in subjecting a charge of this mixed iron and ore to a blast of oxygen or atmospheric air in a reverberatory furnace.

Claim.—1st. The process of manufacturing steel by the immersion of iron, whether wrought or cast, in a bath of melted ore such as specified, used either alone or in connection with other ingredients; 2nd. The manufacture of steel from old horse shoes, or other wrought iron and the ore specified in a crucible; 3rd. The mode of refining or purifying iron in a reverberatory or puddling furnace; 4th. The production of cast-steel in a puddling or reverberatory furnace; 5th. The production of wrought steel in a puddling or reverberating furnace; 6th. The manufacture of cast or pig-iron from mill-cinder in a blast or other suitable furnace; 7th. The employment of the ore specified for separating the metallic part of the mill-cinder from the impurities mixed with the same.

No. 1973. OLIVER BENOIT, Brockville, Ont., 14th January 1873, for 5 years: "Clothes-Line Fastener." (Porte-linge d'étendage.)

Consists of a revolving cylinder with flange having on its periphery horse-shoe or other shaped notches. The cylinder being attached to the wall, the line can be secured without tie or knot and is easily removed.

Claim.—A clothes-line-fastener composed of the fixed axis A, having a bent-end or arm H, and cylinder C, rotating thereon provided with a notched flange D, with or without the washer G.

No. 1974. WILLIAM A. IVES, New Haven, Ct., U. S., 14th January, 1873, for 5 years: "A Bit Brace." (Un vilebrequin.)

In which a pair of jaws is combined with suitable mechanism to grasp the tang of the bit.

Claim.—1st. A bit-brace socket consisting of the stationary head A and its slotted or grooved-barrel B, constructed to receive the follower D, and the jaws E, F, so that by a longitudinal movement of the said follower, in the said slot or groove of the stationary barrel the jaws E, F, are opened or closed according to the movement of the barrel; 2nd. Combination with the subject matter of the first clause of claim in the sleeve T, arranged around the barrel of the socket so as to revolve freely thereon but without longitudinal movement so as to operate the said follower; 3rd. A bit-brace, the two jaws E, F, formed upon or attached to the end of the bit-brace, constructed upon their inner surface, to grasp the tang, and externally at the grasping end, inclined and combined with a sleeve H, working upon the threaded head of the jaws to move over the external surface of the jaws at their grasping-end, so that traversing longitudinally it will close the jaws or reversing allow the jaws to open; 4th. A bit-brace, a pair of jaws E, F, constructed upon their inner surface to grasp the tang of the bit and upon their outer surface, inclined, or of diminishing diameter in the line of expansion and transversely of nearly equal diameter, combined with the sleeve H, working on the said outer surface.

No. 1975. MELVIN JINKS, Wallace, N. Y., U. S., 14th January, 1873, for 15 years: "A Saw." (Une scie.)

Claim.—1st. A saw constructed with teeth A, having points *a*, swaged, forged or filed, gauge-heels *b*, throat *d*, when arranged as described, for rip-saws; 2nd. Combination with said teeth A, having points *a*, gauge heels *b*, and throat *d*, the level-saw teeth B, for the purpose of making a combined rib and cross cut-saw.

No. 1976. HUGH FAIRGRIEVE, Hamilton, Ont., 14th January, 1873, for 5 years: "Compound Engine Cylindrical Balance Valve." (Valve cylindrique d'équilibre pour les machines à vapeur combinées.)

Consists in the removal of all unnecessary pressure from the working surfaces of the valve which is accomplished by the balancing principle obtained in its construction, also in an economy of steam and its non exposure to condensing influences.

Claim.—In constructing the valve A, as shown in fig. 1, for the admission and release of the steam to and from the cylinders W and X; 2nd. The tapering or conical form given to the valve and casing for the purpose of securing efficiency and durability of the working surfaces; 3rd. The pipe *p*, connecting the ports *b*, *c*, with a tap or stop-valve in the same for the purpose of relieving any undue cushioning in the high pressure cylinder W, and also to admit live steam from the boiler directly to the large cylinder *x*, while working the engines by hand; and 4th. In the valve A, with or without the application of a cut-off valve, on the orifice *g*, in head *c*, or otherwise in connection with the same.

No. 1977. LOFTUS PERKINS, London, Eng., 14th January, 1873, for 5 years: "Marine and Stationary Engine." (Machine à vapeur marine et fixe.)

Claim.—1st. The construction of marine and stationary engines as described; 2nd. The construction of marine and stationary engines with the joints of the several parts of the boiler engine and condenser packed with a metallic packing so as to exclude all access of salt or impure water to the interior of the machine and to work with pure fresh water and so maintain the inner metal surfaces always in a clean state and free from corrosion.

No. 1978. GEORGE S. WALKER & FRANK F. ADAMS, Erie, Pa., U. S., 14th January, 1873, for 10 years: "A Clothes Washing Machine." (Machine à laver le linge.)

The combination of a large rotary corrugated or rubbing-roller with a series of small rollers of a particular construction so arranged that when the clothes are pressed between them the operation of cleansing is performed.

Claim.—1st. The series of rollers H, H, H, etc., in combination with a large roller B; 2nd. The large propelling roller B, small rollers H, H, H, etc., uprights D, D, and base-board I, in combination with the castings M and N; 3rd. The castings M and N; 4th. The roller B, and H, H, H, etc., in combination with the strip O; 5th. The face plate E, in combination with the upright D, and sliding journal box J; 6th. The button-prop G, in combination with the large roller B, shaft I, and spring K.

No. 1979. SAMUEL BEVEAU & SIMEON E. PERKISS, Hamilton, Ont., 14th January, 1873, for 5 years: "A Washing Machine." (Machine à laver.)

Claim.—1st. A revolving cylinder A, without a vent, constructed with lifters E, on the inside as shown operated by handle D, in combination with the supporting frame B, or the equivalent; 2nd. The opening H, in combination with the cylinder A; 3rd. The arrangement of the door K, with a layer of rubber between the plates, and secured by the revolving clamp *e*, and nut and pin *f*, as specified.

No. 1980. KING M. C. Arnoldi, Ottawa, Ont., 14th January, 1873, for 5 years: "Frost Proof Tubing" (Tube en métal à l'épreuve de la gelée.)

Claim.—The hollowing or corrugating of pipes or vessels A, A, with one or more hollows or corrugations.

No. 1981. WILLIAM C. BAKER, New York, U. S., 14th January, 1873, for 5 years: "Steam Apparatus for Heating Buildings." (Appareil à vapeur pour chauffer les bâtiments.)

Claim.—1st. The circulating coil passing through the fuel space of the furnace and made so that the fuel will come in contact with the same and settle down between and all around the pipes of the coil as consumed; 2nd. The arrangement of the coil *h*, circulating vessels *d* and *e*, and feed-water and circulating pipes *n*, *r*, *o*, *s*, in combination with the boilers or cylinders *a*; 3rd. A radiating-chamber made of sheet metal and provided with a corrugated plate of metal within such chamber to keep the sheet metal sides at the proper distance apart; 4th. The septums *h*, and *h*, introduced between the sheet metal sides *a*, of the radiating chambers and clamped by means of bolts; 5th. The end plates *o*, provided with connections for the steam and water-pipes, in combination with the steam radiating chambers, septums and clamping bolts.

No. 1982. OLIVER W. KETCHUM, Toronto, Ont., 14th January, 1873, for 5 years: "A Smoke and Gas Consuming Furnace and Steam Generator." (Un fourneau fumoire et générateur de vapeur.)

Claim.—1st. A boiler furnace provided with a vertical self-feeding fuel cylinder E, made air-tight connecting with fire-box B, and passing through boiler A; 2nd. The vertical self-feeding cylinder E, made tapering toward the bottom; 3rd. A vertical self-feeding fuel cylinder, a furnace and a boiler combined with pipes connecting with an air-pump, by which a continuous current of air is forced under pressure through the fire; 4th. The doors *b*, *b*, hinged and opening inwards to allow the same to be held closed by air-pressure from within; 5th. The fire-box B, having door *b*, combined with a flame chamber having door *b*, or a cylinder E, having door E, to allow of natural draft in starting fire; 6th. The construction and arrangement of the pipes C, C; 7th. The deflectors *a*, *a*, arranged over the pipes C; 8th. The steam-domo *a*, provided with a series of superposed deflectors J, J.

No. 1983. OLIVER W. KETCHUM, Toronto, Ont., 14th January, 1873, for 5 years: "A Liquid Fuel Furnace and Steam Generator." (Un fourneau à combustible liquide et régénérateur de vapeur.)

Consists in the method of burning liquid fuel such as coal oil or petroleum under a pressure of air from one pipe that supplies the supporter of combustion and under pressure of air from another pipe upon the hydro-carbon which is used as the combustible.

Claim.—The air-tight hydro-carbon chamber C, connected with air-pump by a pipe C¹, and with the flame-chamber C², by a pipe D, having jet-pipes F, F, F².

No. 1984. OLIVER W. KETCHUM, Toronto, Ont., 14th January, 1873, for 5 years: "A Heating Furnace." (Un calorifère.)

Claim.—1st. The flame-chamber constructed and arranged in connection with boiler and furnace; 2nd. The combination with a single furnace connected with an air-forcing apparatus of a boiler, having pipe E, and a hot-air-chamber having pipe E¹; 3rd. A latch J, provided with tapering prongs; 4th. An air-pump and an air-tight furnace combined, with the pipe E¹, having a weighted valve, to enable combustion to take place under any pressure desired and the hot gases therefrom to be kept under pressure until their calorific value is completely or approximately utilized by means of pipes distributed through buildings.

No. 1985. JAMES WEBSTER, Birmingham, Eng., 14th January, 1873, for 15 years: "Process for Manufacturing Iron and Steel." (Procédé de fabrication du fer et de l'acier.)

Relates to a process of carbonizing or steeling wrought iron by passing through it whilst in a heated state carbonated hydrogen or common coal gas in combination with nitrogen or atmospheric air, or a combination of carbonic-oxide, or carbonic-acid gases mixed with nitrogen or vapour of carbon.

Claim.—Carbonizing or steeling wrought iron and recovering the gases resulting therefrom. In the improved nozzle shown in figs. 7 and 8, for admitting, regulating and mixing the gases into the retorts.

No. 1986. JAMES BURNS, London, Ont., 16th January, 1873, for 5 years: "A Tar-Burner." (Appareil à brûler le goudron comme combustible.)

Claim.—1st. The combination of the two tubes A and B; 2nd. The combination of the nozzle M, on end of burner.

No. 1937. GEORGE I. ANDERSON, JEROME V. GUE & SQUIRE UTLEY, North Western, N. Y., U. S., 16th January, 1873, for 15 years: "A Shingle Machine." (Machine à bardeau.)

Relates to a machine on which shingles can be cut from two blocks or bolts held in one reciprocating carriage, each block being inclined in opposite directions whenever a shingle has been cut from it.

Claim.—1st. The eccentrics of shafts S, provide I with the ratchet wheels h, and combined with the bar u, and springs R, to tilt the platforms P, P; 2nd. In the tilting platforms P, pivoted on the frame B, and rested on springs R, and eccentrics S, alternately; 3rd. The bar G, provided with the endless-rack h, and endless groove c, and combined with the pinion a, and pin v; 4th. The carriage D, provided with the fixed-dogs H, and pivoted-dogs I, and with the springs L, and combined with the pins O, on the frame B, for automatically taking hold of and releasing the bolt.

No. 1938. JESSE S. EGGLESTON, Auburn, N. Y., U. S., 16th January, 1873, for 5 years: "Device for Lubricating Car and Carriage-Axles." (Fusées d'essieux disposées pour le lubrifiage.)

Especially adapted to that class of bearings in which the weight is super-imposed, the shaft or axle revolving and the box or bearing fixed.

Claim.—1st. The plate D, provided with one or more openings f, f, and one or more wick-tubes d, d, in combination with the oil-chamber h, in the box B, with or without the secondary chamber E; 2nd. The box B, having oil-chamber h, grooves a, and guide slots, in combination with the plate D, having one or more openings f, f, and one or more wick-tubes d, the plate D, and box B, being arranged in respect to the axle, so as to form a secondary oil chamber E; 3rd. The box B, provided with a reservoir and wick-tubes, in combination with spring I, and a handle T, or its equivalent, so that the box can be canted for withdrawal; 4th. The journal of a carriage-axle provided with an oil-chamber at or about its centre, in combination with a plate D, supporting one or more wick-tubes d, d, with or without the secondary chamber E, whereby the lubricating material is conveyed to the journal and the axle-box.

No. 1989. ROBERT LOUGH, Quio, Que., 16th January, 1873, for 5 years: "A Stove-Drum." (Un poêle-sourd.)

Claim.—The cylinder E, arranged and applied centrally and internally, in combination with the suspended cylinder B, and exterior drum A, whereby an intermediate air-chamber is formed into which cold air is admitted by the pipe C, and ejected through the pipe D.

No. 1990. EUGÈNE F. BENEDICT, Berea, Ohio, U. S., 16th January, 1873, for 5 years: "An Animal Poke." (Un carcan pour les animaux.)

Claim.—1st. The application to the upper-side of the stave A, of a flat cast steel spring B, and spurs C; 2nd. The combination with such stave and spring of a bow F, pivoted on an axle E, passing through the stave, and provided with a bar G.

No. 1991. WILLIAM W. WHITCOMB, Boston, Mass., U. S., 16th January, 1873, for 15 years: "Improvements on Boots." (Perfectionnements aux bottes.)

Claim.—1st. The strap C, of a boot formed from an extension of the covering strap or brace B, on the side of the boot-leg; 2nd. Combination with the strap C, of a boot the notch or opening made, in the boot-leg A, within the loop of the strap C.

No. 1992. LOFTUS PERKINS, London, Eng., 20th January, 1873, for 5 years: "A Locomotive Engine." (Une machine locomotive.)

Claim.—1st. The construction of traction or locomotive engines with the boiler-steam engine, and driving gear all mounted on a circular frame supported on a wheel or wheels and which can be revolved within a horizontal ring; 2nd. The construction of traction or locomotive engines as shown in fig. 1; 3rd. The construction of traction or locomotive engines as shown in figs. 2, 3 and 4.

No. 1993. GEORGE W. MILTMORE & OLIVE DOTY, Executrix of the late Ellis Doty, both of Janesville, Wis., U. S., 22nd January, 1873, for 5 years: "Car-Axles and Wheels." (Essieux et roues de wagons.)

Consist in a hollow-axle revolving upon a fixed axle, upon which are loosely mounted the wheels supporting the car.

Claim.—1st. The combination of the fixed axle A, the hollow and revolving axle B, and wheels E, loosely mounted thereon; 2nd. The combination of the fixed axle A, the hollow axle B, chamber D, communicating with the fixed-axle A, wheels E, and chambers F, communicating with the bearings of axle B.

No. 1994. EDWARD L. GOULD & JAMES W. CUTHBERTSON, both of Brantford, Ont., 22nd January, 1873, for 5 years: "Machine for Catching and Destroying Flies." (Appareil pour détruire les mouches.)

Claim.—1st. The application of the mirror "G," to the inside of the lid or cover "A"; 2nd. The application of the springs "S," to fasten the body "B," to bottom "E."

No. 1995. EMILE R. WESTON, Bangor, Me., U. S., 22nd January, 1873, for 5 years: "Machine for Burnishing Photographic Card-Board, etc." (Un brunissoir pour les cartes photographiques et autres.)

Consists of a stationary burnishing tool of hard polished metal over which the article to be burnished is fed by a friction cylindrical feed roll.

Claim.—1st. A burnishing machine by which a surface is given to the article to be burnished by attrition under pressure over a stationary burnishing tool E; 2nd. The combination of a stationary burnishing tool E, and friction feed-roll c; 3rd. The combination of the feed-roll c, and burnishing tool e, with the pressure screw h.

No. 1996. CHAUNCEY BUCKLEY & LODOWICK L. SAWYER, Meriden, Ct., U. S., 22nd January, 1873, for 15 years: "A Curtain Fixture." (Ajustage des rouleaux de rideaux.)

The object of this invention is the construction of a fixture in which the curtain will be held at any point by the friction upon the roll, the friction removed or not acting when the roll is turned to draw up the curtain.

Claim.—1st. The bracket A, constructed with an elongated bearing a, and projection n, combined with the toothed wheel b, attached to the roll; 2nd. A pulley for curtain fixtures formed from two discs H, H, with a central depression k, and the two discs united; 3rd. In a pulley for curtain fixtures, consisting of two plates B, C, arranged upon the barrel E, and secured in position by the screw or spindle F, passing through the said barrel, into the roll, and the head bearing direct ly or indirectly upon the outer plate; 4th. Combination with the roll, A, and pulley fixed to the end of the roll, the friction plate or disc H, outside the said pulley, and the friction made adjustable by the screw F, whether the said friction-plate be separate from or a part of the ratchet.

No. 1997. GEORGE RAMSDELL, Assignee of Aretus A. Wilder, Detroit, Mich., U. S., 22nd January, 1873, for 5 years: "Process of Manufacturing Illuminating Gas." (Procédé de fabrication du gaz d'éclairage.)

Claim.—1st. A carburated hydrogen gas for illuminating purposes when it is made by passing hydrogen gas through hydro-carbon floated on water in the gas-holder; 2nd. A hydrogen gas purified by being passed through water contained in the gas-holder, and carburated by being passed through hydro-carbon, containing the same gas-holder; 3rd. The process described for manufacturing an illuminating gas, by passing hydrogen gas through water and hydro-carbon in a gas-holder or tank.

No. 1998. PRESBURG WEST, Worcester, Mass., U. S., 22nd January, 1873, for 15 years: "Improvement on Boots." (Perfectionnement des bottes.)

Claim.—An improved article of manufacture, in a high-legged boot, the front and back parts of which are cut in the usual manner, having the side seams C, closed upon the outside, and extending from the boot sole (with or without welts) to the top of the boot-leg and covered throughout their entire lengths with outside braces D.

No. 1999. MILTON B. FRASER, Rome, N. Y., U. S., 22nd January, 1873, for 5 years: "A Cheese Hoop." (Un fromager.)

For pressing and moulding a cheese in a bandage, producing perfect shape and rind.

Claim.—1st. The bottom B, and follower F, of a cheese-hoop grooved and perforated as shown; 2nd. The combination of sections A and G, and rim E; 3rd. The combination with sections A and G, and rim E, of the bottom B, and follower F; 4th. The combination with sections A and G, and rim E, of the bottom B, and follower F, of the hoop D.

No. 2000. WILLIAM H. DANIELS, Bryan, Ohio, U. S., 22nd January, 1873, for 5 years: "Rifle for Sharpening Harvesting Cutters." (Fusil pour affiler les couteaux de moissonneuses.)

Claim.—A new article of manufacture, in the rifle for grinding the knives of harvester outer bars, its two grinding surfaces being obtuse angles of different degrees composed respectively of sides A, A, and sides of B and B.

No. 2001. WILLIAM H. DANIELS, Bryan, Ohio, U. S., 22nd January, 1873, for 5 years: "A Holder for Harvester Cutters while being Sharpened." (*Porte-couteaux de moissonneuses pour les affiler.*)

Claim.—1st. The combination of the fixed and inflexible anglo-irons D, and wedges E, the top rail A, having a longitudinal groove in its upper side beneath the over-hanging ends of the angle-irons and the triangular fixed-brackets C; 2nd. In combination with a reaper-knife holder the foot-rail F.

No. 2002. JOHN C. SHAY, Petroleum Centre, Pa., U. S., 22nd January, 1873, for 5 years: "Pipe-Coupling." (*Joints de tuyaux.*)

A coupling for metal pipes so constructed as to form a stronger joint than ordinary, being peculiarly adapted to well-tubing, etc.

Claim.—The coupling A, having the projecting thread B, and collars C.

No. 2003. PATRICK DUNN & THOMAS HARRIS, Côte St. Paul, Que., 22nd January, 1873, for 5 years: "Horse-Shoe Nail Machines." (*Machines à clou à cheval.*)

Relates to improvements in the roll-stock of that class of machine in which the nail is pressed by the roll upon a fixed anvil to draw it to the desired thickness.

Claim.—1st. The wedge-keys E, F, in combination with the nut I, for adjusting the roll-stock G. 2nd. The steel pins K, for maintaining the roll-pin L, in position and to receive the lateral friction of the roll J.

No. 2004. JOSEPH B. STEARNS, Boston, Mass., U. S., 25th January, 1873, for 5 years: "Duplex Telegraph." (*Télégraphe à double courant.*)

Claim.—1st. The combination of an electro-magnet coil constructed of two opposing or neutralizing conductors with a key or circuit breaker, so arranged as to close one circuit before it opens the other; 2nd. A neutralizing relay composed of two spools upon each core and cross connected as illustrated by figure 7, of the drawings; 3rd. A neutralizing relay having one or more coils around the armature, and illustrated in figure 10, of the drawings; 4th. A neutralizing relay with helices composed of two concentric shells and cross-connected and illustrated by figure 15, of the drawings; 5th. The combination with a neutralizing relay of the construction shown in either figures 7, 15, or 8, of an adjusting magnet, and illustrated by figure 8, of the drawings; 6th. The combination of a condenser with the branch or compensating circuit whereby the effect of static induction upon the receiving relay or instrument is counteracted; 7th. The combination of the induction coils or apparatus with the branch or compensating circuit whereby the effect of static induction upon the receiving relay or instrument is counteracted; 8th. The combination of a relay or receiving magnet with a bridge-wire when arranged in the circuit of said bridge-wire so that said relay will be operated by received currents and not by transmitted currents; 9th. The combination with the polarized magnet or magnets of a bridge-wire when arranged in the circuit of said bridge-wire so that said polarized magnet will be operated by received currents and not by transmitted currents; 10th. The combination with a chemical recording apparatus of a bridge-wire when arranged in the circuit of said bridge-wire so that said chemical recording apparatus will be operated by received currents and not by transmitted currents; 11th. The combination of the resistance coils V, Y, the resistance coils Z, Z, the relay M, the movable arm W, and key K; 12th. A repeating apparatus constructed and having a mode of operation shown in figure 3, of the drawings; 13th. The combination of the keys F, F, and F, with the electro-magnets S, S, and S, circuit breaking lever K, and local battery L, whereby the sending local circuit is extended from the main to one or more branch offices; 14th. The combination of the relay M, local battery L, receiving sounders R, R, and R, whereby the receiving local circuit is extended from the main to one or more branch offices; 15th. The combination of magnets, keys or circuit breakers and conductors for enabling way stations to communicate with terminal stations as illustrated by figure 13, of the drawings; 16th. The arrangement of circuits as illustrated by figure 12 of the drawings.

No. 2005. THOMAS McCABE, Ottawa, Ont., 25th January, 1873, for 5 years: "A Shingle Machine." (*Machine à bardeau.*)

Claim.—1st. A shingle machine the combination of the inner-rail C, and outer-rail D, with iron rail i; 2nd. The hole-holder K, comprising dog L, springs m and n, rods n, i and n, lifter Z, hammer head v, wedge w, and pin p; 3rd. The combination of short-grooved slides j, and racks x, with iron-rail i and pinions c, to run the hole-holders K, and bevel-slides j, parallel with the saws; 4th. The combination of the upright posts L, and inclined planes v, with the pin p, of the hole-holders; 5th. The combination of the four saws M, with the wheel axle and the adjustable bearings c, to obviate the necessity of setting the bolt or saw to alternate the thick and thin ends of the shingles; 6th. The combination of the endless screw H, with diagonal toothed spur-wheels T, provided with the friction-springs CI, to regulate the pressure on the saws M, and with the pinions c; 7th. The combination of the different parts and the machine as a whole substantially as described.

No. 2006. WILLIAM MURPHY, Sackville, N. B., Assignee of Charles H. Straffin, Boston, Mass., U. S., 25th January, 1873, for 5 years: "A Clothes Line Reel." (*Un rouet de ligne d'étendage.*)

Consists in combining with a reel and frame a friction-plate to arrest the motion of the reel, so that when the line is being drawn out sufficient resistance occurs to prevent it from dragging on the ground.

Claim.—The clothes line reel consisting of the frame B, provided with the dove-tail D, and friction-plate N, and holding the bobbin A, as described.

No. 2007. EDWARD DUFFEE, Haverhill, Mass., U. S., & ANDREW J. TILTON, Boston, Mass., U. S., 25th January, 1873, for 5 years: "Gas Purifier Screen." (*Crible pour l'épuration du gaz.*)

Consists of a series of independent cylindrical or other proper shaped detachable bars or rods extending across the frame either longitudinally or transversely.

Claim.—1st. The improved gas purifying screen described, consisting of the frame A, B, C, D, and the series of detachable bars b, b, etc., constructed, arranged and combined together as set forth; 2nd. A gas screen of the kind described having its frame bevelled, grooved or rabbeted, in manner and for the purpose set forth.

No. 2008. EDWARD DUFFEE, Haverhill, Mass., U. S., & ANDREW J. TILTON, Boston, Mass., U. S., 25th January, 1873, for 5 years: "Gas Purifier Screen." (*Crible pour l'épuration du gaz.*)

Claim.—A screen for dry coal-gas purifiers, composed of crossed or interlaced thin strips of wood received through and supported by a wooden frame-forming the bars A and C, with projecting abutments, and the bars B, D, with extensions, or the equivalents thereof.

No. 2009. JOHN S. PATRICK, Rochester, N. Y., U. S., 25th January, 1873, for 5 years: "Laminated Pipe Machinery." (*Appareil à tuyaux laminés.*)

Claim.—1st. The process of forming pipe, by a continuous winding of wooden splints upon a forming mandrel or core, when such splints pass from a tank of suitable cement with which they are more or less thoroughly saturated and coated; 2nd. An apparatus for winding, wood-n, splints in the production of pipe, a core provided with an alternate reciprocating movement, in combination with the fixed position of the splint, or vice-versa, for the purpose of compensating for the gain or "lead" of said winding; 3rd. Combination with the car G, the self-adjusting or swing-pulleys P and P, belts R, and hangers or pivoted arm J and J; 4th. The arrangement for constructing pipe formed of wooden splints spirally-wound after passing through either asphaltum or other cement upon a core or mandrel consisting either of the diagonally divided cylindrical staves b and c, as shown in fig. 6, for very small pipe; or the crescent-shaped staves b, wedge staves b, and axial wedges n and n, shown in fig. 7 for medium sized pipe; 5th. An apparatus for forming pipe from wooden splints wound spirally, the forming mandrel or core composed of staves b and b, and heads H, combined and arranged as shown in fig. 4, or composed of the staves b and b, hoops h, and half-heads H and H, combined as shown in fig. 3, for the construction of the larger sizes of pipe; 6th. Combination with the staves, and heads constituting the forming cylinder or core for making spirally wound-pipe, the toggle jointed bars F, and rod n, or equivalent devices; 7th. In an apparatus for making pipe formed by winding several layers of wooden splints spirally, either in the same or opposite directions, and with or without cement, a forming mandrel or core so constructed as to retain, rigidly its cylindrical form during the winding process and capable of being collapsed for removal.

No. 2010. JAMES A. HOUSE, Bridgeport, Conn., U. S., 25th January, 1873, for 15 years: "Improvements on Sewing Machines." (*Perfectionnements aux machines à coudre.*)

Claim.—1st. The projections p, q, and r, making part of the hook K, with the gap between them the former preventing the lifting up of the bobbin while the cast off loop is being drawn up through the gap, said projections being constructed and operating as specified; 2nd. The reversed hook or guards overlapping the seizing hook; 3rd. A differential disk B, in combination with two pins e, and f, taking into grooves therein, one pin being secured to a driving and the other to a driven shaft and the whole being and acting as set forth to cause one shaft to be moved by another with a differential velocity; 4th. A differential disk B, mounted in a pillow block f, capable of lateral adjustment in combination with two shafts and a pin on each of them entering slots in the differential disk B, whereby one shaft can be caused to revolve at a differential velocity by motion derived from another shaft, and the difference of velocity can be augmented or diminished by adjustment of the disk; 5th. Combination with a hook K, revolving with a differential velocity upon an axis lying in a horizontal plane and a needle acting in a

vertical plane in a take-up apparatus, preferably consisting of lever C, rod C₁, and roller C₂, the combination being such as described; 6th. Combination with a hook K, provided with projections p, q, and r, to prevent the lifting up of a bobbin and revolved by means of apparatus which gives it a differential motion in a needle operating with a pause in its motions, the combination being as set forth; 7th. Combination with a needle actuated by mechanism which causes it to pause after it has risen a short distance, in a hook rotating in a vertical plane by means of mechanism which imparts to it a differential velocity and a take-up apparatus; 8th. A revolving hook K, made with projections p, q, and r to prevent the lifting of the bobbin p, and a guard s, overlapping the seizing hook m, in a rotating hook for operating upon the needle-thread of a sewing machine constructed in all respects as described.

No. 2011. ENOCH B. WOOD, Toronto, Ont., 25th January, 1873, for 5 years: "Double Frame V Spring Bed." (Lit à ressort en V à double cadre.)

Claim.—The application of the V spring F, to the spring bed-frames A, and B, for the purpose of preventing lateral motion.

No. 2012. THOMAS S. SARNEY, & FREDERICK EVANS, Ottawa, Ont., 25th January, 1873, for 5 years: "A Spring Bed Bottom." (Un fond de lit à ressorts.)

Claim.—1st. A bed-bottom formed and constructed of a series of flat steel elastic curvilinear springs B, combined with elliptical or other shaped truss springs C, having a suitable number of bearing slats D; 2nd. Combining with the curvilinear springs B, tie-springs E, to form an elastic raised pillow-rest or bolster.

No. 2013. WILLIAM MORLOCK, South Easthorpe, & JULIUS MORLOCK, Crediton, Ont., 25th January, 1873, for 5 years: "A Fall-Wheat Drilling Machine." (Machine à sillons pour le blé d'automne.)

Claim.—The combination of the grooves and bevelled flanges of the roller D, both in their shape and adaptation to the purposes described.

No. 2014. LYMAN R. BLAKE, Brooklyn, N. Y., U. S., 29th January, 1873, for 5 years: "A Boot and Shoe Sole Pegging Machine." (Machine à cheviller les semelles de chaussures.)

Claim.—1st. In combination with shoe supporting and nail driving mechanism the contrivances by which the nails are automatically cut from a wire with such points as will ensure their entrance into the sole in inclined directions in the line of the seam; 2nd. In combination with a shoe supporting and nail-driving mechanism the contrivances by which successive nails are cut with oppositely inclined or bevelled point, to ensure the entrance of adjacent nails into the sole at opposite inclinations in the line of the fastenings; 3rd. The cutters *o*, *p*, formed with two pairs of cutting edges for alternately severing the wire and forming nail-points with opposite inclinations; 4th. The nail-cutter blades having an intermittent forward and back movement for alternately bringing the two pairs of blades into position to sever the wire; 5th. The toggle mechanism for imparting the inward or nail severing movement to the cutters; 6th. The nail-tube and presser-foot or rod made as one piece or to be in the same vertical line; 7th. The nail-tube foot placed between the presser-foot checks *t*, and swinging on the pin *s*; 8th. The relative arrangement and combination of the nail-tube, the swinging nail-tube-foot, the presser-foot and their actuating mechanism; 9th. The specific construction and combination of the mechanism for variably cutting and feeding the wire variably moving the presser-foot and variably moving the nail-driver all by and in accordance with the varying thickness of the parts to be united; 10th. The nail tube-foot formed of the two grooved plates; 11th. The nail forming wire made lenticular in section and with the projecting spurs; 12th. The nail-driver formed from round steel wire having the nail driving shank drawn to shape by rolling; 13th. Cutting the soles and ramps of boots and shoes by nails pointed upon one side, so that the nails assume an inclined position as they are driven; 14th. In uniting the soles and ramps of boots and shoes by nails pointed alternately at opposite sides so that alternately driven nails assume opposite inclinations as they enter the sole.

No. 2015. EDWARD J. CHAPMAN, Toronto, Ont., 29th January, 1873, for 5 years: "Art of Producing Paint during the Treatment of Auriferous Mispickel for the Extraction of its Gold." (Art de produire de la peinture durant le traitement du mispickel aurifère pour en extraire l'or.)

Claim.—The direct production of soluble arsenical matters from auriferous mispickel or arsenical pyrites, during their preparation for the extraction of the gold they contain: these soluble matters being subsequently convertible into green or yellow paint materials as set forth.

No. 2016. JOSEPH C. TILTON, Pittsburg, Pa., U. S., 29th January, 1873, for 5 years: "A Washing Boiler." (Une chaudière de buanderie.)

Relates to the arrangement and shape of the passages leading from the under side of the false bottom to the top of the boiler
Claim.—1st. The movable perforated bottom H, in combination with the false-bottom B; 2nd. The perforated false-bottom B, having ribs C, C, G, and I, guards F, and movable bottom H, together with the passages L, L, in combination with wash-boiler A.

No. 2017. JAMES TELFER, Blenheim, Ont., 29th January, 1873, for 5 years: "Oiler for the Shafts of Loose Pulleys and other Bearings." (Graisseur des fusées de poulies folles et autres axes.)

Claim.—1st. The hollow-sleeve A, A, to be made of metal or other suitable material and the collar, oil-channel K, and oil-holes H, B, of any number and size; 2nd. The combination of oil-sleeve with the shaft B, B, and the pulleys C, or other suitable bearings.

No. 2018. ALVEN K. GILMORE, Bath, Me., U. S., 29th January, 1873, for 5 years: "Machine for preparing Wood for Paper Pulp." (Machine à traiter le bois pour la pâte à papier.)

Claim.—1st. The conical grinder and grinder-stone supporter or wheel as made or provided with the flange *h*, and with the stone or stones arranged with such wheel and the flange *h*; 2nd. The grinder as provided with the drip-flange or lip *i*; 3rd. The wood-holder as made of the inner and outer tubular rims, the oblique partitions and the scrapers arranged as specified; 4th. The pressure mechanism composed of the plates *q*, *h*, the *s*-rattened standard *e*, the screw *d*, the rest *e*, arm *d*, pawl *n*, screw *g*, screw-sleeve *h*, shaft *l*, pull *y*, *h*, rope *m*, and its weight *n*, arranged, combined and supported as explained; 5th. In combination with said pressure mechanism, the mechanism for effecting the winding of the weight-rope on the drum *h*, same consisting of the wheels *o*, *p*, and the lever *q*, or mechanism for moving the shaft *h*, so as to carry the said wheels either into or out of contact; 6th. The brake mechanism or its equivalent, in combination with the pressure mechanism and the mechanism as explained for effecting the winding of the weight-rope on its drum; 7th. The wood-holder as provided with the recesses *r*, *r*, arranged in its outer rim, in manner and with respect to the wood receptacles, and for the purpose set forth; 8th. The combination and arrangement of the connection-arch *t*, with the wood-holder and grinder and its shaft A.

No. 2019. JAMES WHITE, Fredericton, N. B., 29th January 1873, for 5 years: "A Spring Bed." (Un lit à ressorts.)

Claim.—1st. The arrangement and combination of the elastic eyed staples or band supporters F, F, with the cross bands D, D, the conico-helical springs A, their support bars B, and slats E; 2nd. The elastic staples to prevent lateral sway of the slats when a person is reclining thereon and to prevent the springs from being thrown out of place together with the leather fastening of the springs to the slats.

No. 2020. BENJAMIN C. TILGHMAN, Philadelphia, Pa., 29th January, 1873, for 5 years: "Method of Cutting Hard Substances." (Méthode de tailler les corps durs.)

Claim.—1st. The cutting, sawing, boring and grinding of stone, glass, pottery, metal and similar hard substances by grains or globules of iron or steel or other tough and hard metal forcibly rubbed against them under pressure; 2nd. A new article of manufacture, in a cutting, grinding or abrading material for stone, glass, pottery, metal and similar hard substances, consisting of grains or globules of iron or steel or other tough and hard metal.

No. 2021. OLIVER S. GARRETSON, Buffalo, N. Y., U. S., 29th January, 1873, for 5 years: "A Blind Hinge." (Une penture de persienne.)

Claim.—1st. A blind hinge in which the two leaves or wings are coupled together one above the other, the arrangement of the locking flanges *a*², *a*³, formed respectively at the adjacent ends of the two wings so as to engage with each other and lock the blind when in an open position. 2nd. A blind hinge when one of the parts thereof is provided with a spur or marker so arranged that when said part is fastened in place to the blind or window casing it will serve to mark or indicate the proper position for setting the other half of the hinge.

No. 2022. GEORGE O. FREEMAN, Chatham, Ont., 1st February, 1873, (Extension of Patent No. 1537.) for 5 years: "A Tent Spring." (Un ressort pour les tentes.)

Claim.—The cylinder "A," with the slot "B, B," the spring D, and the combination of said cylinder, slot and spring with the bent pole "C," as specified.

No. 2023. JAMES E. EMERSON, Beaver Falls, Pa., U. S., CHARLES H. WATEROUS & GEO. H. WILKES, both of Brantford, Ont., 3rd February, 1873, for 5 years: "A Removable Saw Set Socket." (Une douille de rainette mobile.)

Relates to the construction of a thumb-cam, nut or bolt which as it is partially turned forces the end of the saw blade hard against its end bearings, and at the same time clamps the wings of the socket hard against the sides of the saw-blade.

Claim.—1st. The thumb-bolt D, constructed as described in combination with the wings B₁, of socket B, and saw-blade A; 2nd. The removable socket A, and handle A₁, of a cross-cut saw in combination with the saw-set composed of the slot a, in socket A, anvil-block b, having arm B₂, and gauge-screw c, when attached and constructed to operate with the handle in the manner described.

No. 2024. SEBRUS C. MAINE, Boston, Mass., U. S., 3rd February, 1873, for 5 years: "A Portable Ventilator." (Un ventilateur portatif.)

Claim.—1st. A ventilator of the character described by means of which currents of air will be deflected from a direct course on entering the apartment to be ventilated; 2nd. The combination in a ventilator of a deflector for changing the direction of the currents of air on entering the apartment to be ventilated, and a damper for regulating the supply of air to be admitted; 3rd. The combination in a railway-car ventilator of a deflector for changing the direction of the currents of air as they enter the car, and an automatic valve operating as described for directing the external air into the ventilator in whichever direction the car may be moving; 4th. The combination in a railway-car ventilator of a deflector for changing the direction of the currents of air as they enter the car and a screen arranged and operating as described for excluding dust, cinders, etc., from the air admitted to the car; 5th. The combination in a railway-car ventilator of a deflector for changing the direction of the currents of air as they enter the car and a sliding valve as shown in figures 2, and 4, for automatically directing the external air into the ventilator in whatever direction the car may be moving.

No. 2025. JAMES H. BUTLER, Hampton, Me., U. S., & HIRAM DUCLOS, Jr., Montreal, Que., 3rd February, 1873, for 15 years: "Machine for Cutting Laths." (Machine à scier la latte.)

Consists in the manner of running a series of gang-saws on an inclined arbor by a belt from a horizontal drum and shaft, said saws being secured by conical collars so arranged on a line parallel with the plane of the feed table that the saw blades shall have an even support on each side.

Claim.—A lath cutting machine, the combination of the gang-saws C, inclined arbor D, conical collars C₁, driving inclined-belt d, horizontal shaft E₂, and feed-rollers G and G₁, the whole constructed and arranged for the purpose of cutting laths with bevel-edges.

No. 2026. EDWARD J. CHAPMAN, Toronto, Ont., 3rd February, 1873, for 5 years: "Art of Treating Auriferous Mispickel for the Extraction of Gold." (Art de traiter le mispikel aurifère pour en extraire l'or.)

Claim.—The ignition or gentle deflagration of auriferous mispickel or arsenical pyrites with a sufficient quantity of nitrate of soda or nitrate of potash, or both, and the dissolving out the resulting soluble matters thus leaving a residuum which is more easily treated for the extraction of the gold therein contained either by amalgamation or the so called chlorine process.

No. 2027. SILAS DODSON, Jersey City, N. J., U. S., 3rd February, 1873, for 5 years: "A Grain Scourer." (Un nettoyeur des grains.)

Consists of a stone casing constructed in sections or blocks, combined with an interior cylinder armed with beaters which scour the grain by projecting it against the casing.

Claim.—1st. A case B, composed wholly or in part of stone and used in connection with interior beaters; 2nd. The combination of the revolving cylinder a, armed with a series of beaters J, J, or their equivalents, with a stone-case B, B; 3rd. The combination of the bevel-edges b, b, and the square bearing-edges d, d, so arranged as to compensate for the wear of the interior of the case by a redressing of said square-edges; 4th. The mode of scouring grain, the same consisting in projecting the grain upon the inner periphery of a stone-case by means of interior beaters or wings.

No. 2028. WILLIAM J. KEEP, Troy, N. Y., U. S., 3rd February, 1873, for 5 years: "A Side Base Burning Stove." (Un poêle à charbon à foyer de base et de côté.)

Claim.—1st. A stove having the upper or supply end of its magazine separated from the air of the apartment by means of two covers, between which is a chamber for the escape of gas, when

said covers are so combined that the inner cover must be opened by an independent motion before the outer cover can be removed; 2nd. An exterior cover for the upper-end of a stove casing which can only be removed after an exterior cover is raised and which, when thus removed, carries with it said interior cover; 3rd. An exterior and an interior cover, so combined and arranged that when the former is moved horizontally, the latter is carried in the same direction; 4th. The covers O₁ and S₁, when combined and arranged with relation to the upper end of the casing that when said covers are opened, the inner cover is prevented from dropping downward; 5th. An exterior and an interior cover for the upper end of the casing, and for the magazine when so constructed and combined that the closing of the former will permit the latter to close; 6th. The square or rectangular rod R, when combined with the cover Q₁; 7th. A magazine provided with a vertically removable cover, when the opening thus closed is principally in rear of the transverse centre of said magazine; 8th. The latch U₁, constructed and combined with the cover S₁, and with the upper end of the casing; 9th. In the latch U₁, and lower cover Q₁, when so arranged that the raising of the latter shall release the former; 10th. The urn T₁, constructed and combined with the covers Q₁ and S₁, and with the lifting rod R₁; 11th. A chamber situated between the cover of the upper end of the magazine and the cover of the stove-casing and connected with the exit flue when the chamber is not connected with the combustion-chamber; 12th. A chamber so arranged above the magazine of a reversible-flue stove that the exit flue shall produce a constant suction so as to remove therefrom all escaping gases or entering air; 13th. The constructed opening O₁ and P₁, above and below the exhaust-chamber H₁; 14th. The funnel N₁, provided with the opening O₁, and so combined with the upper open end P₁, of the magazine and with the cover Q₁ as to cause said cover when being raised to close for an instant said opening O₁; 15th. The cross-pipe L₁, and exhaust flue K₁; 16th. The damper M₁, corresponding to and combined, with the cross-pipe L₁; 17th. A damper for closing the direct draught of a stove when provided with two handles which extend outward from opposite sides of the same; 18th. A magazine having its rear-wall curved inward so as to increase the space horizontally between the same and the contiguous portion of the casing; 19th. The flue strips D₂, situated at the upper end of the diving-flue B₁, and combined with the same, the magazine and the casing of the stove; 20th. The flue-strips D₂, when constructed with A shaped upper sides; 21st. The division plate M₂, constructed and combined with the base of the stove; 22nd. The removable plate O₂, constructed and combined with the casing of the stove; 23rd. An oven applied to and combined with the rear-side of the stove, and connected directly with the diving-flue so as to cause the heated escaping gases to pass into and through the flue surrounding said oven, instead of entering the base of the stove; 24th. An oven combined with and arranged upon the rear-side of a stove, when said oven is so constructed that by turning a damper, the heated escaping products of combustion may be caused to pass from the diving-flue directly into and around said oven or may be caused to enter the base of said stove and then pass into and around said oven; 25th. The extra-plate P₃, attached to and forming a part of the oven L₃, and inclosing the open rear-side of the diving-flue; 26th. The lining Q, for the upper edge of the fuel-chamber when combined and arranged with relation to the moveable bars N; 27th. The lining Q, constructed in sections and provided with tenons q, and mortises q₁; 28th. Combination with the lining Q, provided with the recess q₂, the lugs R, secured to and extending inward from the casing and containing the pin r; 29th. The bearing-ring L, provided with the sockets M, and bearing m, in combination with the moveable bars N; 30th. The bearing-ring L, constructed as described and provided with the opening m₁, within the sockets M; 31st. A moveable bar forming a part of the said lining of a fuel-chamber, when its upper end is provided with a journal having such a relative angle to said bar as to cause it to have a rotary motion, within its bearing, when the lower end of said bar is caused to vibrate around the circle of the slag-pit; 32nd. A moveable bar forming a part of the side of a fuel-chamber, when the axial bearing for its upper end is so arranged as to permit each side of said bar to be alternately thrown forward and back, horizontally as well as radially when its lower end is vibrated around the circle of the slag-pit; 33rd. The head or collar n₁, secured upon the outer end of the journal n, in combination with the same, the bar N, and the ring L; 34th. The bars N, provided with the bearings O, and lateral flanges o, in combination with the ring G, provided with the opening g; 35th. The bars N, constructed and combined with the ring G, so as to permit of their longitudinal expansion without displacement of parts; 36th. The rear moveable bar N, provided with the lateral wing n₂; 37th. A fuel chamber capable of a horizontally rotary motion in combination with an imperforate horizontally stationary bed-plate; 38th. The lining C₁, of the diving-flue B₁, when constructed and combined therewith; 39th. The means employed for attaching the lining C₁, to or upon the flue B₁, consisting of the lug c₁, secured to or upon the rear-side of said lining and provided with the pin C₂, and projecting through a corresponding opening within the front-wall of said flue; 40th. The brick or extra-lining D₁, constructed and combined with a metal lining C₁ or flue B₁; 41st. The brick or extra-lining D, constructed as shown and combined with the metal-lining C₁, by means of the downward projecting end of the magazine and the flanges d, or the ledge d₂; 42nd. In the nose X₁, constructed open at the rear, and combined with the magazine B₁; 43rd. A fuel-chamber capable of a horizontally rotary motion and resting upon and wholly or in part supported by balls; 44th. The lower cup-bearings l, constructed as shown and provided within their sockets i, with the openings i₁; 45th. The upper recessed bearings H, provided with the overlapping wings h; 46th. The slag-pit cylinder G, so constructed as to extend below the bed-plate s; 47th. The axial bearings T and A₁, of the bed-plate s, when constructed as shown and resting within the bearings t and w; 48th. The combined plate X, and bar Y, constructed as shown and combined with the bed-plate s, and slag-pit cylinder G; 49th. The washer z, provided with the radial-arm A₁, and combined with the bed-plate s, and the arms T and U; 50th. The frame-bar W, constructed as shown and combined with the bed-plate s; 51st. The combination with the horizontally

pivoted bed-plate *s*, and frame-bar *W*, the stud *w*; 52nd. The imperforate bed-plate *a*, having its rear-side extended so as to close the space between the same, and the inner-side of the slag-pit *G*; 53rd. A horizontally stationary bed-plate provided with a serrated edge, in combination with a fuel-chamber, capable of a horizontally-rotary motion and provided upon its portions contiguous to the edge of said bed-plate with corresponding serrations; 54th. The projecting ledge *K*₃ upon the sides of the ash-pit *V*; 55th. The doors *R*₂ provided with the lugs *S*₂ and ears *V*₂, which together form the lingo or pivotal bearings for said doors; 56th. The hollow-lug *W*₂ of the door-frame secured upon and extending outward from the side of the casing of the stove; 57th. A mica frame, having its lower bar bevelled inward and downward; 58th. A mica section of dropping doors situated opposite a basket-grate when the latter is placed above a ring or slag-pit, and all the parts are constructed and combined as specified; 59th. The turn-button *Y*₂ and *Z*₂ having its outer portion flush with the surface of the door; 60th. A stove shaker provided upon one end with a key for unlocking the turn-button. 61st. Combination with the arm *Y*₄ of the turn-button, the lugs *D*₃ and *E*₃ secured upon and projecting inward from the door *R*₂; 62nd. Combination with the turn-button *Y*₂ and *Z*₂ pivoted to or within the door *R*₂, the lug *F*₃ secured to and extending inward from the frame *V*₂.

No. 2029. WILLIAM C. NUNN, Belleville Ont.,
3rd February, 1873, for 5 years: "A Carbureting Machine." (Machine à carburer.)

Consists in providing the end of the pumping cylinder with a perforated trap to feed the cylinder with water when required and to admit atmospheric air to the pump, also in constructing the carburettor of a rectangular form divided by semi-partitions and suspending, within the divisions, cloth to absorb the hydro-carbon by capillary attraction thus increasing the carbureting surface.

Claim—1st. Providing the cylinder *A*, at one end with a feed aperture having a funnel-top and perforated lugged cover *E*; 2nd. A carbureting tank *G*, subdivided by partitions *T*, and connected by inverted pipes *u*; 3rd. A carbureting tank *G*, subdivided by partitions *T*; 4th. In the application and employment in a carbureting tank *G*, of capillary sheets *J*, suspended therein as and for the purpose set forth.

No. 2030. GEORGE A. RICHARDSON, Reading, Mass., U. S., 3rd February, 1873, for 5 years: "An Improved Shoe." (Une soulier perfectionné.)

Claim—1st. The improvement in uniting soles and uppers of shoes without lasting and without inner soles by using a connected vamp and quarter; 2nd. Uniting the soles and uppers of shoes by stitching the vamp to the end of the quarter as described; 3rd. The rotatively reciprocating thread-guide sleeve *l*, comprising the presser-foot bar or needle bar and having an eye *m*, in combination with the needle and work-plate, 4th. The presser-foot *g*, formed with the recess *i*, in combination with the needle and thread-guide.

No. 2031. ROBERT C. BECKETT, Newboro, Ont.,
3rd February, 1873, for 5 years: "Twin Bob-Sleighs." (Traîneaux-Jumeaux, pour les billots.)

Claim—1st. The construction of bob-sleighs, the combination of the knees *B*, brace-rods *E*, and caves *D*, for supporting the beam *C*, from the runners *A*; 2nd. The connection of the reach *G*, with the sleighs by the pivoted front bolster *F*, sleeve *H*, connecting rods *J*, and hinged rear bolsters *T*, whereby the reach can be adjusted to any desired length and fixed by the sleeve pin; 3rd. In the adaptation of a bolster plate *L*, having thereon a raised hollow collar and king-bolt passing through the same to the beam, to form a ball and socket connection with the bolster *F*.

No. 2032. EVERETT P. RICHARDSON, Lawrence, Mass., U. S., 3rd February, 1873, for 5 years: "A Shoe Sewing Machine" (Machine à coudre les chaussures.)

Relates to mechanism for sewing what are known as "turned shoes," in the manufacture of which each shoe is made without an inner sole.

Claim—1st. The combination and arrangement of mechanism for imparting reciprocating movements to the needle bar. 2nd. The mechanism for imparting the movements to the cast-off, relatively to the movements of the needle; 3rd. The arrangement of mechanism for throwing the needle-bar out of connection with its actuating mechanism; 4th. The construction and arrangement of the intervening mechanism by which from the main driving shaft, the respective vertical movements of the thr at piece *V*₂, needle-bar *S*, bender *Y*₂, hook *X* and channel foot *Z*₂, are effected; 5th. The construction and arrangement of the rocker-sleeve *m*, and its arms, the bender-bar *d*₁, and spring *o*₁, for reciprocating the bender; 6th. The arrangement of mechanism for actuating the thread-guide *p*₂, and theawl bar *l*; 7th. The arrangement of mechanism for adjusting the position of the hook *z*; 8th. The general cooperative arrangement of all of the details of the mechanism as described.

No. 2033. BENJAMIN HUOT, Levis, Que., 3rd February, 1873, for 5 years: "A Hot Air Tubular Furnace." (Une fournaise à tubes à air chaud.)

Claim—Elle consiste à utiliser le calorique de l'intérieur du foyer *c*, au moyen de tubes *r*, qui le traversent, en y faisant passer l'air froid; et ensuite à utiliser le calorique contenu dans la fumée au moyen d'une boîte *e*, et de tuyaux *f*, *h*, *i*, *j*, *k*, et *m*, disposés à cet effet et tel que décrit.

No. 2034. HORACE C. BRADFORD, Providence, R. I., U. S., 4th February, 1873, for 15 years: "Machine for Setting Buttons or Lacing Hooks." (Machine à ajuster les boutons ou les crochets.)

This machine is more particularly adapted for setting automatically the "Shurtloff" lacing or button-hooks in leather, cloth or other fabric in connection with which they are to be used.

Claim—1st. The top plate *E*, partially vertical and partially horizontal, with the intervening section twisted or curved, in combination with the turning-plate *F*; 2nd. The combination of the chute, with the holding and releasing fingers, whether the latter be arranged to operate by independent vibration, or by intermittent rotation whereby the line of hooks in the chute, may be kept from descending and the lower one at the proper moment be delivered to the nippers; 3rd. The combination of the chute the transfer-finger and the transfer-bar; 4th. The automatic holding and forcing nippers, in combination with the transfer or holding bar; 5th. The clenching block, in combination with the turning-fingers and the clincher; 6th. The machine for automatically setting lacing hooks, composed of the several mechanical devices organized and combined as described for separating the needle hooks from a mass of hooks for presenting them in a proper position for seizing each hook adjacent to its lacing space, as presented and forcing its prongs through the fabric in which it is to be set, and for turning and clinching the prongs.

No. 2035. WILLIAM C. NUNN, Belleville, Ont.,
Assignee of Thos. M. Farrand, Boston, Mass., U. S., 4th February, 1873, for 5 years: "Tuck Folders of Sewing Machines." (Lames à plisser des machines à coudre.)

Claim—1st. Combination with the sliding folder-guide, the gauge-hip *m*, at the end of the shank *n*, said shank being formed as a spring, the pressure of which is adjusted by a screw *r*, which presses the shank down upon or toward an incline *q*; 2nd. The clamp-plate *a*, formed with an incline *q*, for enabling the pressure upon the shank of the tuck-gauge or upon the hammer shank to be adjustably regulated by the screw *r*.

No. 2036. JAMES B. WATT, Coaticook, Que.,
4th February, 1873, for 5 years: "A Spring Bed Bottom." (Un fond de lit à ressorts.)

Claim—1st. The combination of the metal chains *B*, and spiral-springs *C*, when applied to the side-rails *A*, of a bedstead for supporting the bed bottom; 2nd. The combination of the standards *G*, and spiral-springs *H*, for supporting the slats *F*, from the slats *D*; 3rd. The application and arrangement of the central-bar *E*, for connecting the slats *D*; 4th. The straps *T*, when applied and used in the manner set forth.

No. 2037. JAMES F. KELLOGG, Oshawa, Ont.,
4th February, 1873, for 5 years: "Tuck Marker of Sewing Machines." (Marque-pli de machine à coudre.)

Claim—1st. The bed-plate *A*, formed of two upward bent arms *a*, the latter provided with a bevelled slotted groove *E*, for attachment of the outer gauge *B*, and the former carrying the inside tuck-gauge *C*; 2nd. The application to the arm *a*, of the plate *A*, of a spring wing-bar *D*, for smoothing and pinching the cloth; 3rd. The sliding gauge *B*, when provided with a race block engaging in the slot *E*, in the plate *A*, and adjustably fixed by the thumbscrew *F*; 4th. The application to a tucking attachment of a spring-arm *H*, provided with an elastic-pad *J*, and operated by the needle-bar on a raised-edge *K*, for creasing or marking one or more thicknesses of cloth; 5th. The application to the arm *a*, of the plate *A*, of a gauge *C*, provided with a bent end or other contrivance to slide inside the tuck for the holding of the work to the gauge *B*, and prevent it from drawing off, as set forth.

No. 2038. SAMUEL STALFORD, St. Andrews, Co. of Argenteuil, Que., 4th February, 1873, for 5 years: "A Churn." (Une baratte.)

Claim—1st. A rotary rectangular churn the broadest sides being hung vertically to a horizontal shaft *C*. 2nd. Providing a rectangular cream chamber of a churn with balance weights *D*, applied horizontally to two or more opposite exterior angles to render the rotation of the churn uniform.

No. 2039. GEORGE LITTLE, Rutherford Park, N. J., U. S., 9th February, 1873, for 5 years: "Electric Telegraph Apparatus and Circuit." (Appareil et circuit de télégraphe électrique.)

Relates to improvements in telegraphic appliances especially available with automatic telegraphs where perforated paper is employed to transmit the message by pulsations through the perforations.

Claim—1st. The circuit closer *lv*, and lever *cl*, in combination with the roller *e*, drum *cl*, and connections for closing and breaking a circuit to the main line by the perforated paper; 2nd. The grooved drum *cl*, stationary lifting blade *v*, and delivery slide *es*; 3rd. An oscillating armature *f*, and two helices *f₁*, *f₂*, connected to the main line, in combination with a constant circuit connected with one of the helices; 4th. An oscillating armature *f*, upon a fulcrum connected with the cores of two electro magnets *f₁*, *f₂*, in combination with two electric circuits connected with the helices of such magnets; 5th. Two electro magnets and a vibrating armature, in combination with a constant circuit connected with one of the electro-magnets and a switch for directing the main line current either through one electro-magnet or through both of the electro-magnets; 6th. Two transmitting rollers or disks *c*, arranged upon separate springs, arms or levers so as to act in connection with a strip of paper having perforations in two lines; 7th. An electro-magnet introduced within a rheostat, 8th. In a rheostat made in two parts united at one end and provided with two adjusters; 9th. An armature made of thin sheet metal and vibrated to form a receiving sound instrument, 10th. A metallic connection between one pole and the other at the operative end of an electro-magnet to more rapidly disperse or neutralize the residual or induced magnetism; 11th. A metallic connection between the two operative poles of a magnet made adjustable for regulating the action of such connection in neutralizing the residual or induced magnetism; 12th. The connections arranged as shown in fig. 15, for the main line and constant circuits between the rheostats, the electro-magnets and the switch in combination with the vibrating armature; 13th. The battery *z*, and the receiving instrument figs. 15, and 26, connected to the binding screws of the instrument in combination with the vibrating armature, and connections to said binding screws; 14th. A telegraphic communication received upon chemical paper in lines running back and forth or zig-zag and connected at alternate ends; 15th. The conducting-plate *ol*, and slotted plate *or*, between which the chemical paper is retained in combination with the stylus *s*, and flexible conductor connected therewith; 16th. The galvanometer indicating needle, in combination with an adjustable helix that can be moved with the helix *r₁*, and slides *r₂*, *r₃*, upon which the helix is movable; 17th. The base for the galvanometer made with the central projecting bearing and adjusting screws in combination with the movable helix *r₁*, slides *r₂*, *r₃*, and indicating needle; 18th. A needle suspended by a thread in liquid within a glass tube and contiguous to a helix; 19th. The glass tube made adjustable vertically and secured by clamps and containing a suspended indicating needle in combination with a helix; 20th. The solutions prepared of the materials and in about the proportions specified for saturating paper for chemical telegraphs; 21st. The mode specified of recovering and utilizing the chemical substances employed in telegraphic paper; 22nd. A fountain and pen constructed and set forth and vibrated upon centres by means of electric pulsations to mark telegraphic characters upon paper; 23rd. The automatic telegraph apparatus and circuits in combination with a condenser and operating by rise and fall of tension; 24th. The automatic telegraph apparatus in which a condenser or coil is applied with the helix in the main line; 25th. The mechanism shown in fig. 30, for employing the power of an electro-magnet in punching the paper.

No. 2040. THOMAS F. HENLEY, London, Eng., 12th February, 1873, for 5 years: "Process for the Preservation of Meat and Fish." (Procédé de conservation de la viande et du poisson.)

Claim—1st. The preservation of animal food from decay by expressing therefrom the juices which by their presence induce decomposition whether the pressure be applied with or without the aid of heat; 2nd. Applying the antiseptic properties of extract of meat, concentrated meat essence or concentrated beet-ten, and of dry gelatine to the preservation of the juices discharged from raw-meat; 3rd. In utilizing the juices discharged from meat by hot pressure in the manner described.

No. 2041. AUGUSTIN J AMBLER, Washington, D. C., U. S., 12th February, 1873, for 15 years: "A Gas Generator." (Un générateur à gaz.)

For generating gas from petroleum and other hydro-carbon oils by the introduction of steam.

Claim—1st. A gas generator combining in its construction an oil and gas-chamber A, a steam-chamber B, or a surrounding gas-chamber D; 2nd. The combination of the vessel A, flues or tubes U, C, vessel B and E, steam-pipe I, and suitable valves I₁, I₂ and I₃; 3rd. The combination of the oil-vessel A, and the indicator composed of the parts K, K and K'; 4th. The combination of the pump H, pipes H₂ and H₃, and vessel A; 5th. The combination in a gas generator of a gas receiving-chamber D, connecting pipe M, receiving-chamber 3, in a separate vessel, and a suitable pipe; 6th. For conducting the gas to the point where it is to be consumed.

No. 2042. JOHN W. BURTON, Leeds, England, 12th February, 1873, for 5 years: "Treatment of Oils and Fats for Lubricating and other purposes." (Traitement des corps gras pour le lubrifiage et autres fins.)

The invention consists in the manufacture of a new material called "Almond Oil," by subjecting petroleum or mineral oil to the action of the oil of mirbane, and in mixing the same with oils and fatty substances.

Claim—1st. In the manufacture of the almond oil, in the manner described. 2nd. In the treating or refining of oils and fats by the almond oil.

No. 2043. WILLIAM HAMILTON, Peterborough, Ont., & JOHN LUDGATE, Ashburnham, Ont., 12th February, 1873, for 5 years: "Machine for Raising Saw Logs on to the Mill Floor." (Machine à monter le bois de sciage sur le pavé des moulins.)

Claim—The endless chain D, arranged and operated by means of cogs or projections from the driving-wheel and the trucks E, attached to such chain for the carriage of the logs, etc., the running-gear of the same being the wheels attached to such trucks and the upper and lower trucks for the same and the toothed wheels a, a, a and a, together with the chain-wheel H, and the combination of the same.

No. 2044. BRIDGET FRENCH, wife of John French, Rochester, N. Y., U. S., 12th February, 1873, for 5 years: "A Lubricating Compound." (Une composition lubrifiante.)

Claim—1st. The combination of bees wax (either with or without alkali and tallow) with petroleum or other oil and plumbago, for holding the plumbago in suspension; 2nd. The combination with an oil having plumbago in solution, of alkali and unctuous oil or tallow (or soap) for the purpose of saponifying and solidifying the mass as described.

No. 2045. WILLIAM MURPHY, Sackville, N. B., Assignee of Charles H. Straffin, Boston, Mass., U. S., 12th February, 1873, for 5 years: "Improvements in Bracket Sheaves." (Perfectionnements aux poulies à consoles.)

Relates to the method of combining with an open sheave-block, a plate at right angles to the plane of the pulley, said plate being provided with screw or nail-holes by means of which the sheave may be fastened to the post or support.

Claim—The cast metallic sheave, as an article of manufacture, consisting of the parts A, B, E, as described.

No. 2046. SARAH MAHAN, Cleveland, Ohio, U. S., 12th February, 1873, for 5 years: "A Lap Board." (Table à ouvrage reposant en partie sur les genoux.)

Claim—1st. In the legs B, G, and spring-hook brace D, in combination with the board A. 2nd. The spring-hook brace D, constructed as described, with an angle C, in combination with the legs B, G; 3rd. The spring-hook brace D, constructed as described.

No. 2047. JOHN PARTINGTON, & ROBERT BLOOMFIELD, Montreal, Que., 12th February, 1873, for 5 years: "Steam Engine Packing." (Garniture de machine à vapeur.)

Relates to an improvement on the method now in vogue, of packing the glands of steam-engines with hemp and other fibrous substances, and provides a metal packing of a more durable character. Another feature of the invention is the reduction of friction on the working parts.

Claim—1st. The packing composed of a ring or rings *d*, with spring or springs *f*; 2nd. In the rings *d*, and ring or rings *f*, externally acted upon by steam etc., to give the necessary pressure on the rod *b*; and 3rd. The combination of the gland *a*, and cover *c*, ring or bush *p*, or *k*, angular-chamber *pl*, steam way *h*, ring *d*, and springs *f*, with or without ring *i*, and supplementary packing *d'*, with springs *f₁*, in combination with rod *b*.

No. 2048. JOSEPH WOOD, Red Bank, N.J., U.S., 12th February, 1873, for 5 years: "A Railway Frog." (Raccordement des rails de chemins de fer.)

The object of this invention is to relieve or prevent the lateral drag of the wheels in passing through the frog and also to give the frog proper stability and elasticity on the road-bed.

Claim.—1st. A railway frog having wooden middle pieces D, D, placed between the rails F, F, thereof and secured thereto in the manner described; 2nd. A railway frog with a tongue B, elevated above the side rails F, F; 3rd. The safety bars K, K, in combination with the side rails F, F.

No. 2049. SAMUEL CHURCHMAN, Wilmington, Del., Assignee of Gore Mitchell, Philadelphia, Pa., U.S., 12th February, 1873, for 5 years: "Mill for Grinding Hard Substances." (Moulin à triturer les corps durs.)

Relates to the mechanism for grinding quartz, guano, phosphates and other hard substances in such a manner that they shall first be reduced to a powdered state and then discharged by a blast of air.

Claim.—1st. In the combination of the grinding or pounding wheel *a*, adjustable hammers *h*, recesses *n*, fanning flanges *p*, inclosing casing *c*, segmental serrated or corrugated linings *d*, and the adjustable blast director *s*; 2nd. Combination with the pounding or grinding wheel *a*, recesses *n*, and the adjustable hammers *h*; 3rd. The grinding or pounding wheel *a*, constructed with the recesses *n*, and fanning flanges *p*; 4th. The combination of the grinding or pounding wheel *a*, removable segmental serrated or corrugated linings *d*, of the casing *c*, and the securing flanges *p*; 5th. The square or recessed hub or projecting *g*, in combination with the ring *g*, and recessed plates *q*, and forming the skeleton of a grinding or pounding wheel; 6th. The reversible hammers *h*, with their tongues *h'*, and the L shaped keys *g*, in combination with the plates *q*, employed to prevent lateral motion of the hammers *h*, and the flanged knees *g'*, employed as supports and packing for the hammers *h*; 7th. The combination of the grinding or pounding wheel *a*, reversible hammers *h*, with their keys *g*, fanning flanges *p*, enclosing casing *c*, serrated or corrugated linings *d*, and removable blast director *s*.

No. 2050. ANSELME H. LAROCHELLE, St. Anselme, Que., 12th February, 1873, for 5 years: "Machine for Making Bale Hoops." (Machine à faire les attaches d'emballage.)

The hoops or bands are made of iron perforated at one end and supplied with a hook at the other, the two ends meeting and fastening by compression.

Claim.—1er. L'instrument à faire le crochet, planches I, IV, V, c'est-à-dire les deux chassis H, H, B, B, les deux coussinets F, F, K, K, avec leurs rainures et saillies i, i, i, le couteau C, C, le distributeur D, D; 2nd. L'instrument à faire les ceillots, planches II, VI, c'est-à-dire la manivelle à tordre h, h, la mâchoire f, f, destinée à tenir la broche durant l'opération du tordage; 3me. L'instrument à terminer l'attache, planche III et VI, c'est-à-dire le traîneau b, b, les machines à ressort E, E la détente e, e, servant à faire agir le traîneau b, b, les couteaux d, d, la combinaison avec les roues p, p, la chaîne s, s, et le traîneau b, b, et finalement dans la fabrication des attaches 2, 1, 2, et 1, 3, 3, planches IV.

No. 2051. WILLIAM C. NUNN, Belleville, Ont., 12th February, 1873, for 5 years: "Sewing Machine Tucker, etc." (Lames à plisser, etc., de machine à coudre.)

Claim.—In combination with the adjustable gauge *f*, of the adjustable set-plate *n*.

No. 2052. MARTIN P. HAYES, Seaforth, Ont., 12th February, 1873, for 5 years: "Furnace for Heating Liquids in the Process of Evaporation." (Fourneau à chauffer les liquides pour l'évaporation.)

The furnace is of sheet metal having hollow sides and bottom or end, or either, to receive and heat the liquid before being passed to the evaporating pans; also, in combination with a furnace constructed of bricks or other materials, an internal hollow lining of sheet metal to contain the liquid and heat the same previous to its entering the evaporating pans.

Claim.—1st. The application to a furnace A, of the metal feed water-tank or heater K, surrounding the sides, end and bottom of the same, and arranged within the furnace walls, for heating the liquid or brine before entering the evaporating pans; 2nd. A furnace A', constructed of water tight hollow walls of sheet metal forming the combustion chamber to receive and heat the liquid while passing to the evaporating pans.

No. 2053. CHARLES H. KERMOY, Barrie, Ont., 12th February, 1873, for 5 years: "Composition of Matter for Dyspepsia." (Composition médicinale pour la dyspepsie.)

Claim.—A compound of cubebs, gentian and pepsine, mixed in the proportions and for the purpose set forth.

No. 2054. JOSEPH WILLIAMS, Hemmingford, Que., 12th February, 1873, for 10 years: "An Excavating Machine." (Machine à excavation.)

Claim.—1st. In excavating machines, the endless apron, composed of a series of close jointed horizontal leaves E, hinged together by pintles F, and provided with end lapping pieces J, K, and scoops D; 2nd. The polygon drum G, for operating the apron by the shaft B; 3rd. The arrangement and combination with the said apron and frame A, of an endless track H, and wheels G, journalled on the pintles F.

No. 2055. GEORGE N. GEDDES, Glen Morris, Ont., 12th February, 1873, for 5 years: "A Railway Frog (Rail Junction) Protector." (Un protecteur de raccordement de rails de chemin de fer.)

Claim.—The steel spring C, bolted to the lower flange of the rails *a, a*, in combination with open and close railway frogs as shown in figs. 1, 2, 3 and 4.

No. 2056. THOMAS W. BAXTER, Chicago, U.S., 12th February, 1873, for 5 years: "A Stone Dressing Machine." (Machine à tailler la pierre.)

Claim.—1st. The method of embedding and holding the diamond boast or carbon point or tool, in the metallic holder; 2nd. The combination of the diamond boast or equivalent cutter, the holder and the stock so that the diamond being mounted or bedded centrally in the end of a cylindrical holder, shall be capable of being turned about its axis without otherwise changing its position for the purpose of bringing either side or face of the point of the diamond, in the proper position to act as the cutting point, face or edge; 3rd. In combination with the holder in one end of which the diamond is embedded and held and the plate of the stock in which the holder is inserted the nuts *o* and *p*, by means of which the holder may be adjusted to gradually to vary the depth to which the diamond is to cut, with relation to other diamonds in the same stock; 4th. In combination with the holder in which the diamond or equivalent cutter is embedded and held, and the stock in which two or more such holders are inserted, the eccentric *l*, whereby the lateral position of the diamond with relation to other diamonds in the same stock may be adjusted without otherwise changing the position of the cutting point; 5th. The arrangement of two or more diamonds or carbon points, embedded and held in holders and furnished with means of adjustment as described or their equivalents, in a head or stock, so that the cut of one diamond shall adjoin or overlap the cut of the next adjacent diamond; whereby a cut of any desired width or profile may be produced; 6th. In combination with a diamond or diamonds embedded and held in holders which are mounted in a rotating stock and provided with the adjustments described, the slide and guides and the devices for imparting motion to the said slides or their equivalents, whereby the stone and the diamond cutters are brought in contact, so as to reduce the stone to the shape and size required; 7th. The clamp or chuck consisting of the plate H, heat-blocks I and J, wedges *g*, *h*, *i*, and set screws *m*, *o*, *p*, or their equivalents, the whole being constructed and arranged as set forth; 8th. A machine for dressing or working stone, the combination with a rotating stock armed with diamonds, of the chuck or clamp, for holding and adjusting the stone; 9th. A machine for dressing stone, the combination of a table or carriage D, for holding or carrying the stone, and a rotating stock armed with diamonds, so that the feed motion by which the cutters are brought to operate on the stone is derived from the spindle on which the said stock is mounted.

No. 2057. JAMES R. SPENCER, Richmond, Ont., 12th February, 1873, for 5 years: "A Counterpoise Farm Gate." (Une barrière à contre-poids.)

Claim.—The counterpoise C, in the form of a box, and being loaded at the bottom; the pivot E, and socket F, upon which the gate turns; and also, the guards H, H, which pass on either side of pivot-post D, and are attached to the bottom of gate A, and counterpoise C.

No. 2058. EDWARD B. JACKSON, Orillia, Ont., 12th February, 1873, for 5 years: "A Washing Board." (Une planche à laver.)

Claim.—The application of the rubber face or sheet D, to a corrugated washing-board A, held thereon by the combination of the wires E, and copper-wire threads F.

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" extracting gold from misplekel.....	2026	Moustinger, P., pump.....	1965
Churehman, S., (assignee), mill for grinding hard substances.....	2019	Murphy, W., (assignee), clothes line reel.....	2006
Clough, Wm. R., paper fastener.....	1918	" " bracket sheaves.....	2015
Collett, J. R., preserving meat, fish, etc.....	1913	Murphy, A. A., stools.....	1906
Coté, L., sole-edge burnisher.....	1926	Nash, R. G., paper pulp.....	1909
Cramer, J. C., machine for removing hay.....	1936	Ness, C. M., iron process.....	1972
Cuthbertson, J. W. & E. L. Gould, fly-catcher.....	1994	Nevers, W., sleigh propeller.....	1915
Daniels, W. H., sharpening barvester cutters.....	2000	Nichols, F. W., desk.....	1931
" holder for " ".....	2001	Nunn, W. C., carburetting machine.....	2029
Day, E. A., hose valve.....	1903	" Sewing machine tucker.....	2051
" railway track cleaner.....	1911	" (assignee), sewing machine tuck folder.....	2035
Dean, J., slip keels.....	1910	Osborne, J. H., sewing machine shuttle.....	1959
DeVeau, S., & S. E. Perkins, washing machine.....	1979	" E. H., & A. Hunter, grain cleaner.....	1941
Dobson, S., grain scower.....	2027	Otto, J. R., desk.....	1931
Dodge, T. H., (assignee), sewing machine shuttle.....	1923	Partington, J., & R. Bloomfield, steam engine packing.....	2047
Doty, O., & W. G. Milthmore, car axles and wheels.....	1993	Patric, J. S., laminated pipe machinery.....	2009
Duclou, H., & J. H. Butler, lath cutting machine.....	2025	Perkins, L., steam and portable engines.....	1962
Duffee, E., & A. J. Tilton, gas purifier.....	2007	" marine and stationary engines.....	1977
" " ".....	2008	" locomotive.....	1992
Dunn, P., & T. Harris, nail machine.....	2003	Perkiss, S. E., & S. DeVeau, washing machine.....	1979
Dwyer, J., & J. V. B. Carter, base burning stove.....	1969	Ramsdell, G., (assignee), manufacture of gas.....	1997
Eggleston, J. S., lubricating device.....	1988	Richardson, G. A., shoes.....	2030
Ellender, H., car coupler.....	1966	" E. P., shoe sewing machine.....	2032
Emerson, J. E., C. H. Waterous & C. H. Wilkes, removable saw-set socket.....	2028	Rider, J. F. C., spooling machine.....	1938
Fatrgrieve, H., engine slide valve.....	1951	Sarney, T. S., bed bottom.....	2012
" " cylindrical balance valve.....	1961	Sawyer, L. L. & C. Buckley, curtain-fixtures.....	1996
" " ".....	1976	Shaw, S. J., cutting boot soles.....	1922
Farrand, T. M., sewing machine tuck-folder.....	2035	Shay, J. C., pipe coupling.....	2002
Fenson, J., turning machine.....	1945	Schatz, G., & J. Zimmerman, washing machine.....	1914
Field, R., machine treadle.....	1950	Schofield, S., cigar making.....	1921
Fisk, M., churn.....	1927	Scott, W. P., car-coupler and buffer.....	1964
Fraser, B. M., cheese hoop.....	1999	Shepler, P. L., & F. M. Heath, sewing machine attachment.....	1958
Freeman, G. O., (extension), tent spring.....	2022	Slater, S., soles of boots.....	1924
French, B., lubricating compound.....	2014	Smith, I., paper pulp.....	1902
Garretson, O. S., blind-hinge.....	2021	Sparham, T., composition for covering boilers.....	1953
Geddes, Geo. N., railway frog protector.....	2055	Spencer, J. R., counterpoise for gate.....	2057
Gillmore, A. K., paper pulp.....	2018	Spooner, D. B., water meters.....	1913
Goodrich, N. W., nail machine.....	1904	Stalford, S., churn.....	2038
Goodyear, G., boots and shoes.....	1918	Stearns, J. B., telegraph.....	2004
Gould, E. L. & J. W. Cuthbertson, fly-catcher.....	1994	Stein, S., coffin.....	1928
Gouldthorpe, B., rail fence.....	1919	Straffin, C. H., clothes line reel.....	2006
Gue, J. V., S. Utley & G. I. Anderson, shingle machine.....	1987	" " bracket sheaves.....	2015
Gwynn, G., steam engine packing.....	1919	Telfer, J., lubricator.....	2017
Hamilton, W., & J. Ludgate, raising saw logs.....	2043	Tilghman, B. C., cutting hard substances.....	2020
Harris, T., & P. Dunn, nail machine.....	2003	Tilton, A. J., & E. Duffee, gas purifier screen.....	2008
Harrison, R., (assignee), paper pulp.....	1909	" " ".....	2007
Hayes, M. P., furnace for heating liquids in process of evaporation.....	2052	Tilton, J. C., washing boiler.....	2016
Heath, F. M., & P. L. Shepler, sewing machine attachment.....	1958	Turbayne, D., & G. M. Wyman, nail machine.....	1916
Henley, T. F., preserving meat and fish.....	2010	Turner, J. & S., biscuit machine.....	1930
Holmes, C. P., horse collar.....	1967	Utley, S., G. I. Anderson & J. V. Gue, shingle machine.....	1987
House, J. A., sewing machine.....	2010	Vreeland, S., carriage wheels.....	1937
Hudson, J., (assignee), tree trimmer.....	1925	Walden, J., elastic gores for boots.....	1929
Hunter, A., & E. H. Osborne, grain cleaner.....	1911	Walker, G. S., & F. F. Adams, washing machine.....	1978
Huot, B., hot air tubular furnace.....	2033	Wanzer, R. M., sewing machine stand.....	1968
Innis, J. W., potato digger.....	1920	Waterous, C. H., G. H. Wilkes & J. E. Emerson, removable saw-set socket.....	2023
Ives, W. A., bit brace.....	1974	Watt, J. B., bed bottom.....	2036
Jackson, E. B., wash-board.....	2058	Webster, J., iron and steel process.....	1985
Jarvis, E. J., cup chain water lifter.....	1957	West P., boots.....	1998
Jinks, M., saw.....	1975	Weston, E. R., photograph.....	1995
Jones, F. P. L., kettle.....	1932	Whitcomb, W. W., boots.....	1991
Keep, W. J., base burning stove.....	2028	White, J., spring-bed.....	2019
" re-melting furnace.....	1939	Wilder, A. A., manufacture of gas.....	1997
" cooking stove.....	1940	Wilkes, G. H., C. H. Waterous & J. E. Emerson, removable saw set socket.....	2023
Kellogg, J. F., sewing machine tuck marker.....	2037	Willett, G. W., washing machine.....	1908
Kermott, Chs. A., compound for dyspepsia.....	2053	Williams, Joseph, an excavating machine.....	2054
Ketchum, O. W., steam generator and gas consumer.....	1982	Wood, E. B., spring bed.....	2011
" " and liquid fuel furnace.....	1983	" " J., railway frog.....	2048
" heating furnace.....	1981	Woodruff, H. S., buckle.....	1970
King, W. R., balling press.....	1942	Wyman, G. M., & D. Turbayne, nail machine.....	1946
Larochelle, A. H., bale hoops.....	2050	Young, G., sewing machine tucker, friller, etc.....	1935
Levey, C., steam engine.....	1901	Zimmerman, J., & G. Schatz, washing machine.....	1914

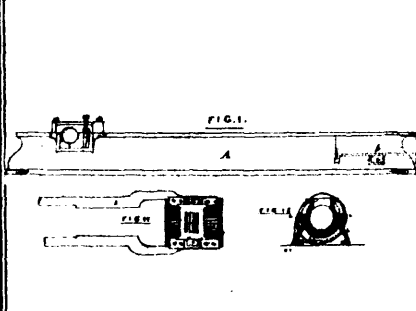
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

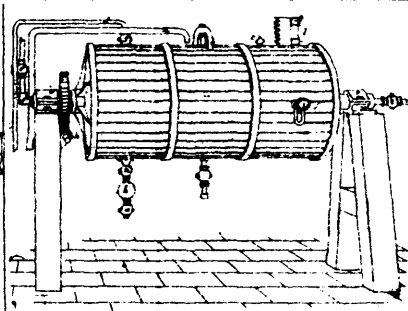
Vol. I.

MAY, 1873.

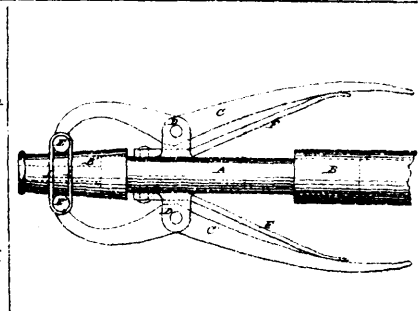
No. 2.



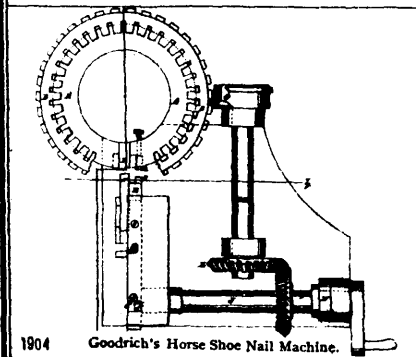
1901 Levey's Improvement in Steam Engines.



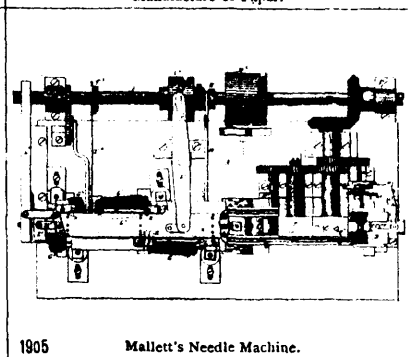
1902 Smith's Process of treating Wood for the Manufacture of Paper.



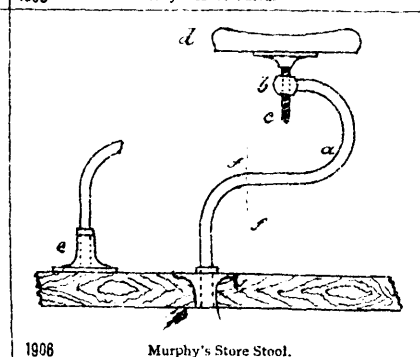
1903 Day's Hose Valve.



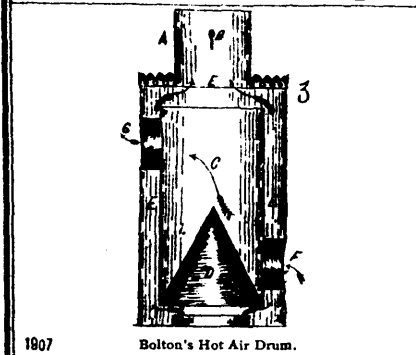
1904 Goodrich's Horse Shoe Nail Machine.



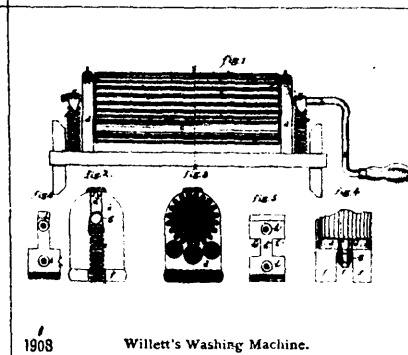
1905 Mallet's Needle Machine.



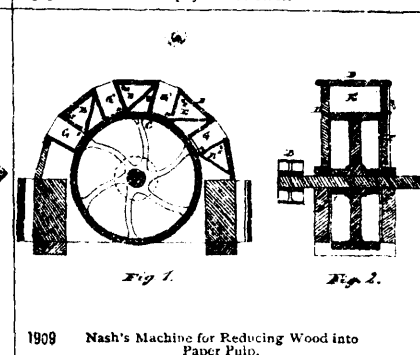
1906 Murphy's Store Stool.



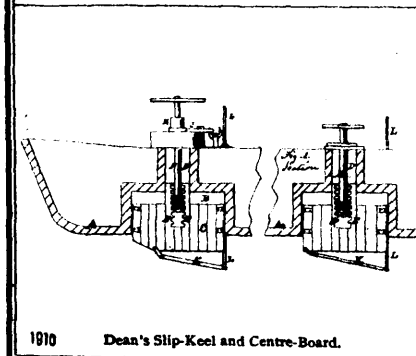
1907 Bolton's Hot Air Drum.



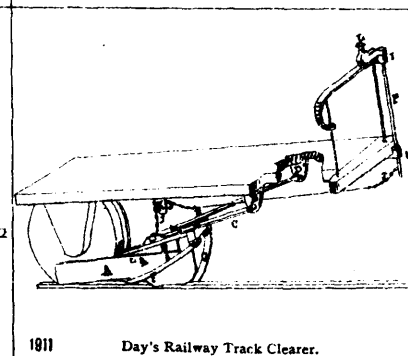
1908 Willett's Washing Machine.



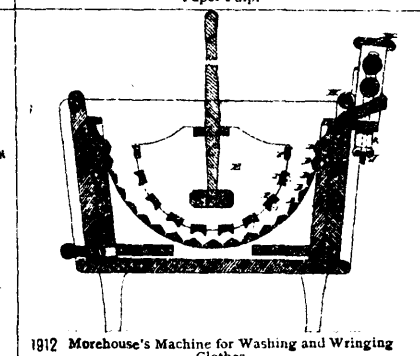
1909 Nash's Machine for Reducing Wood into Paper Pulp.



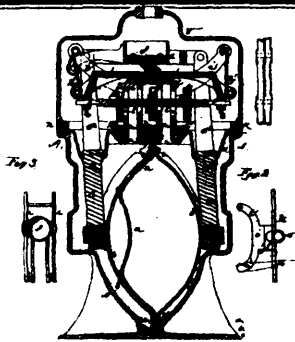
1910 Dean's Slip-Keel and Centre-Board.



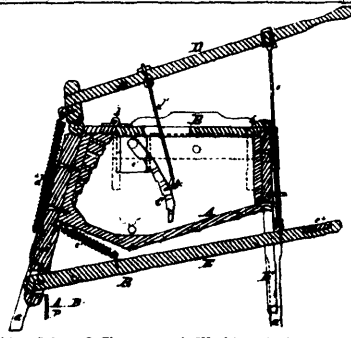
1911 Day's Railway Track Clearer.



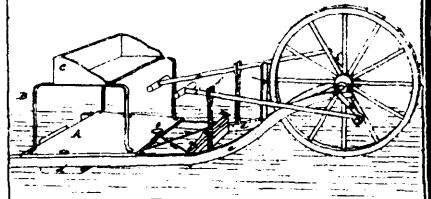
1912 Morehouse's Machine for Washing and Wringing Clothes.



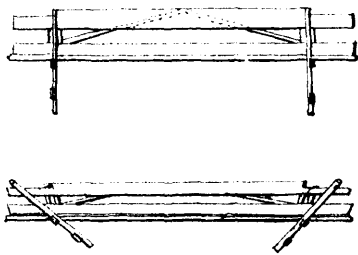
1813 Spooner's Water Meter.



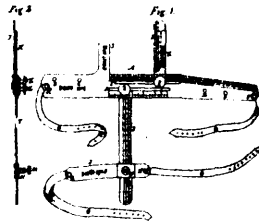
1814 Schatz & Zimmerman's Washing Machine.



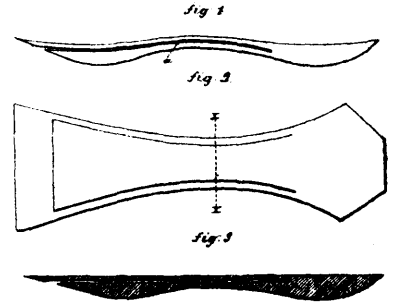
1815 Nevers's Machine for Propelling a Sleigh on Ice.



1816 Blain's Portable Bench.



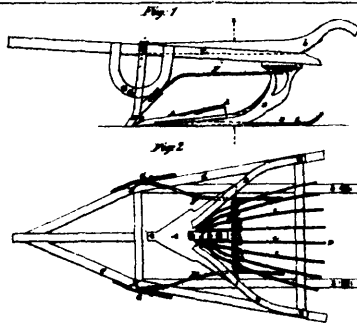
1817 Beaudry's Tailor's Square.



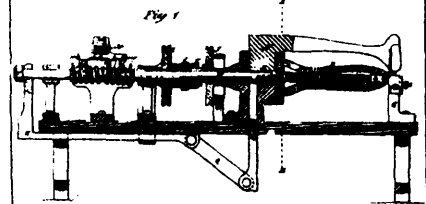
1818 Goodyear's Improvements on Boots and Shoes.



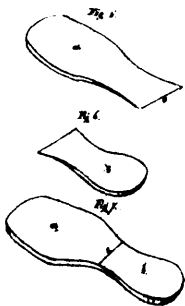
1819 Gwynn's Steam-Engine Packing.



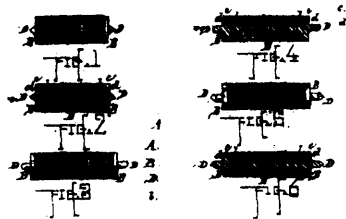
1820 Innes's Potatoe Digger.



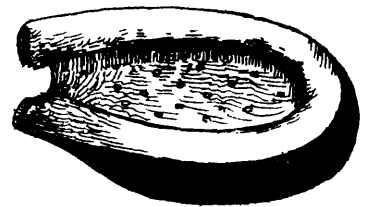
1821 Scholfield's Cigar Machine.



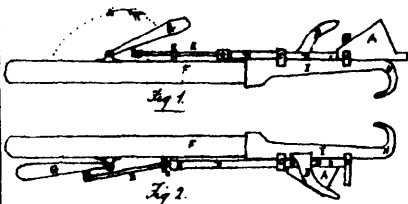
1822 Shaw's Method of Cutting Soles of Boots and Shoes.



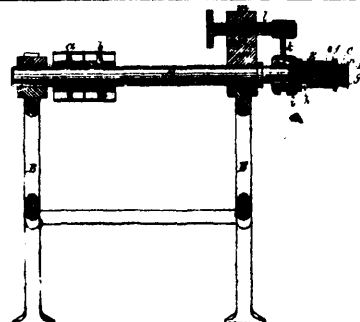
1823 Bullard's Spool and Spool of Thread Machine Wound for Sewing Machine Shuttle.



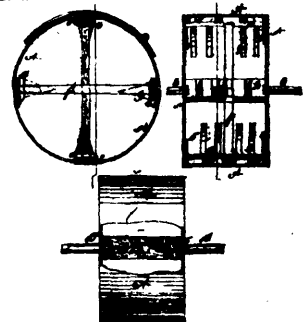
1824 Slater's Cork and Composition Soles of Boots and Shoes.



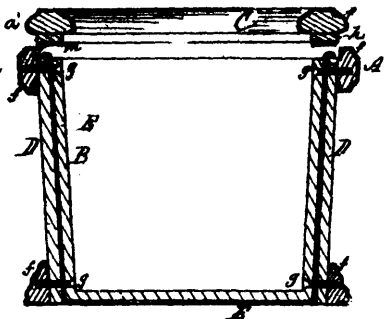
1825 Madgett & Hudson's Machine for Trimming Trees.



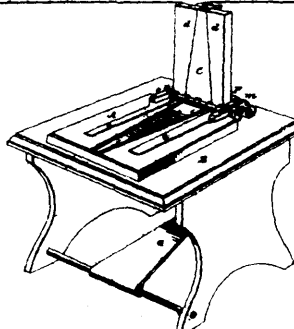
1826 Cote's Sole Edge Burnisher.



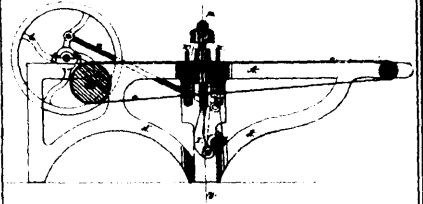
1827 Fisk's Improvement in Churns.



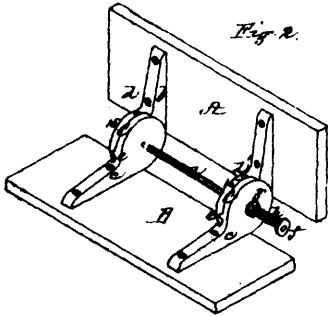
1928 Stein's Coffin.



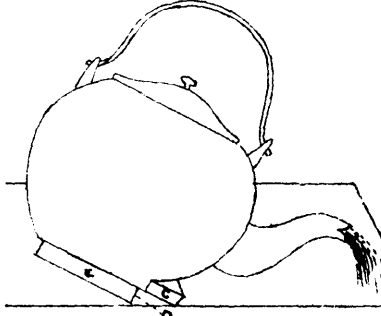
1929 Walden's Machine for Fitting Elastic Gores of Gaiters.



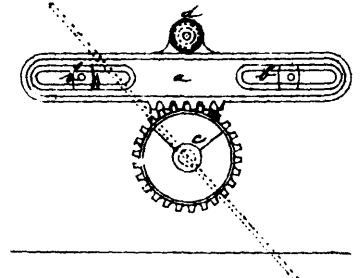
1930 Turner's Biscuit Machine.



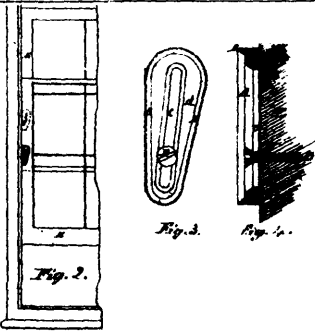
1931 Otis's Folding Desk.



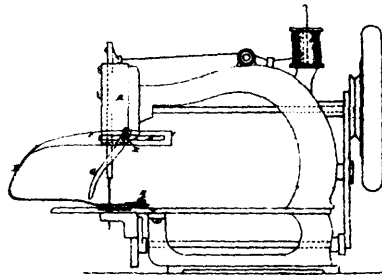
1932 Jones's Kettle.



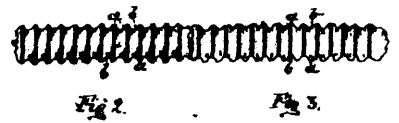
1933 Abell's Stove Pipe Damper.



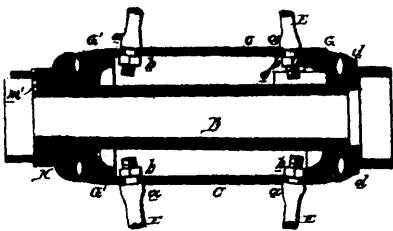
1934 McCallum's Sash Fastener.



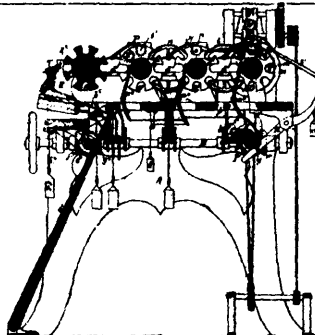
1935 Young's Sewing Machine Filler.



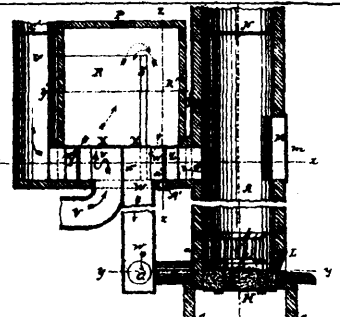
1936 Bigelow's Burred Wire for Rivetting the Soles of Boots and Shoes.



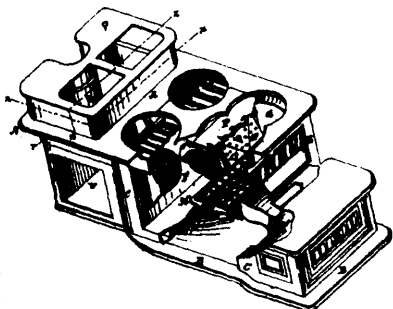
1937 Vreeland's Wheels for Vehicles.



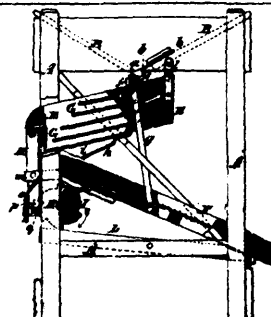
1938 Rider's Spool or Spooling Machine.



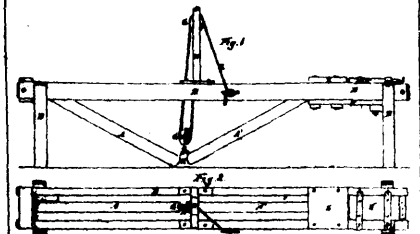
1939 Keep's Furnace for remelting iron and other metals.



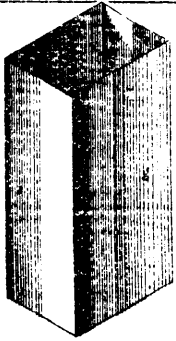
1940 Keep's Cooking Stove and Stove-pipe Damper.



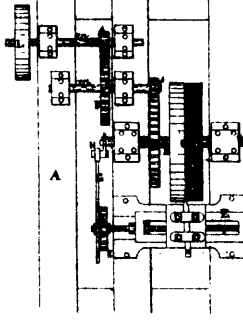
1941 Hunter & Osborne's Machine for Cleaning Grains.



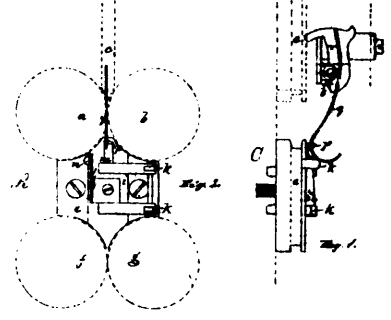
1942 King's Baling Press.



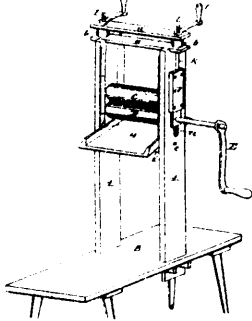
1944 Benner's Manufacture of Paper Bags.



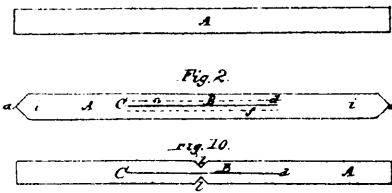
1945 Fensom's Machine for Turning.



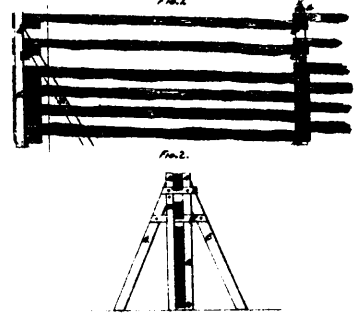
1946 Turbayne & Wyman's Horse Shoe Nail Machine.



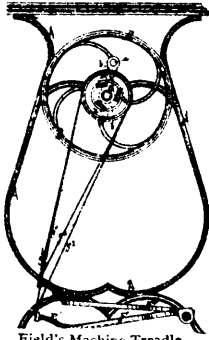
1947 Blodgett's Clothes Wringer.



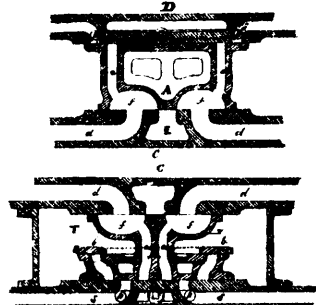
1948 Clough's Paper Fastener.



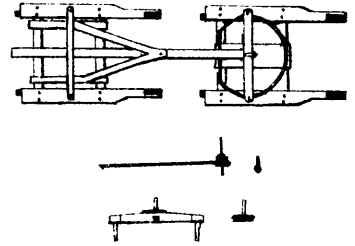
1949 Gouldthorpe's Rail Fence.



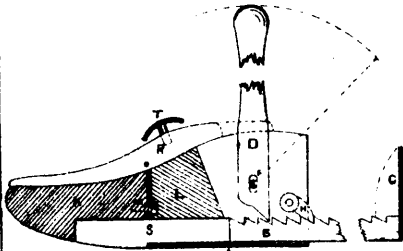
1950 Field's Machine Treadle.



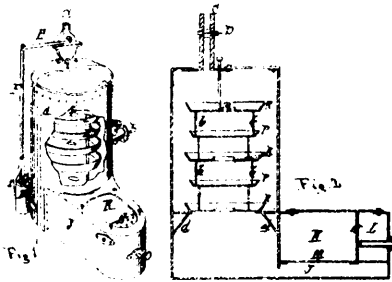
1951 Fairgrieve's Compound Engine Double Faced Slide Valve.



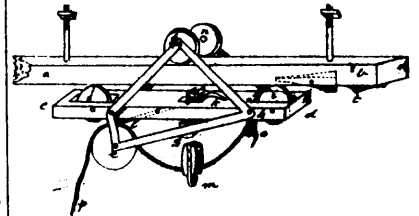
1952 Malone's Coupling of Bob-Sleighs.



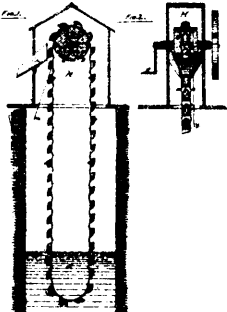
1954 Lyons's Boot and Shoe Stretcher.



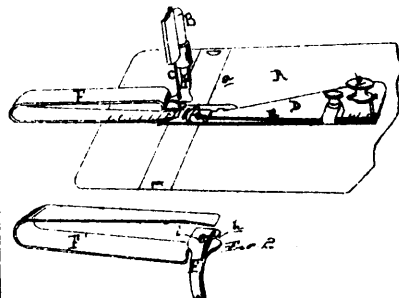
1955 Armstrong's Feed Water Heater and Filter.



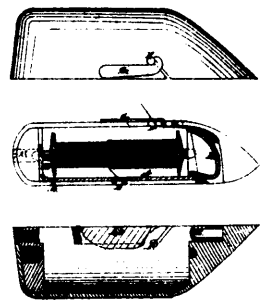
1956 Cramer's Machine for Removing Hay.



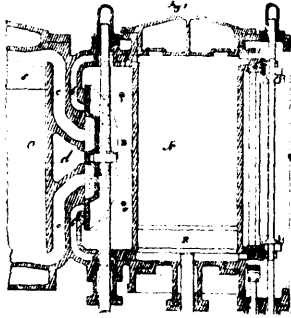
1957 Jarvis's Cup Chain Water Lifter.



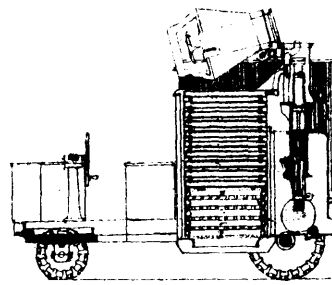
1958 Shepler & Heath's Attachment to Sewing Machines for Tucking and Braiding.



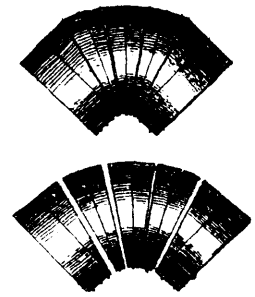
1959 Osborn's Sewing Machine Shuttle.



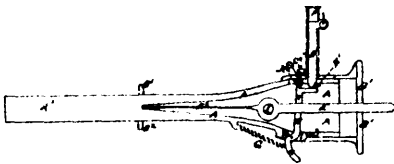
1961 Fairgrieve's Compound Engine Single Faced Slide Valve.



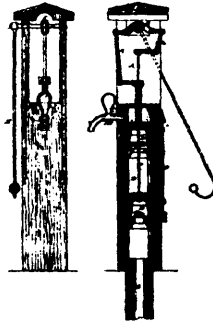
1962 Perkins's Improvements on Locomotives and Portable Steam Engines.



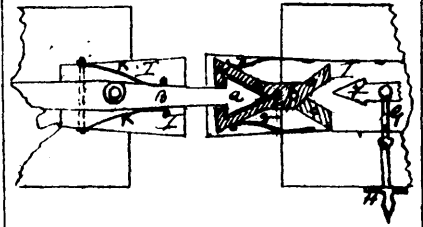
1963 Dolton's Stove-Pipe Elbow.



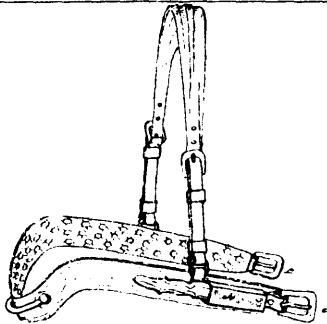
1364 Scott's Car Coupler and Buffer.



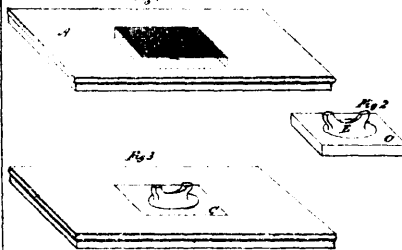
1365 Munsinger's Pump.



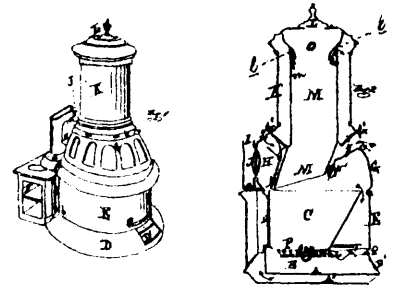
1966 Ellender's Car-Coupling.



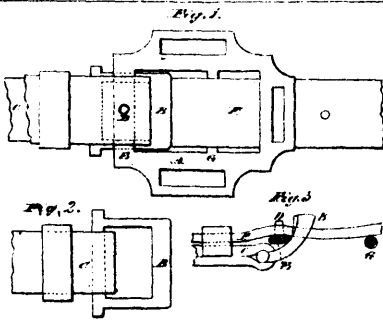
1967 Holmes's Horse Breast Collar.



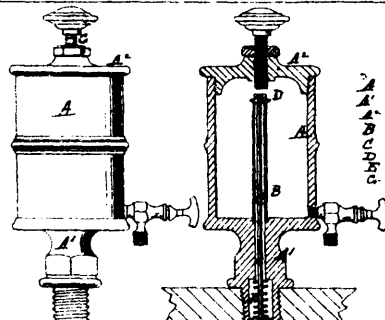
1968 Wanzer's Sewing Machine Stand.



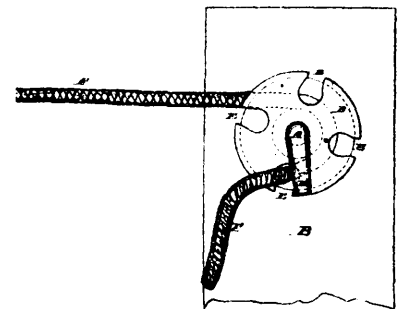
1969 Carter & Dwyer's Base Burning Stove.



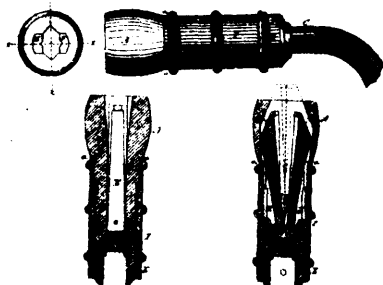
1970 Woodruff's Buckle.



1371 McCoy's Steam Engine Lubricator.



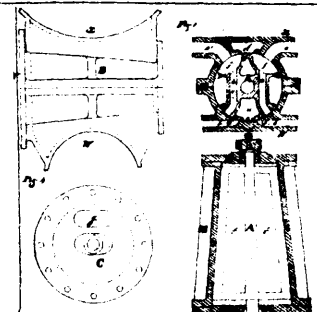
1973 Benoit's Clothes-Line Fastener.



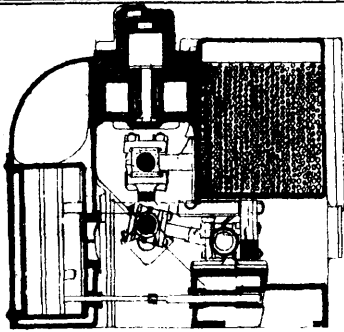
1974 Ives's Bit Brace.



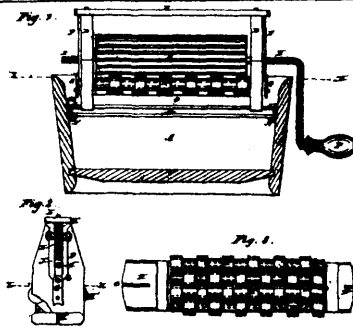
1975 Jinks's Saw.



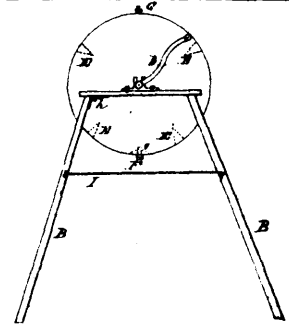
1976 Fairgrieve's Compound Engine Cylindrical Balance Valve.



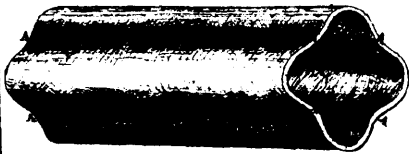
1977 Perkins's Marine and Stationary Engine.



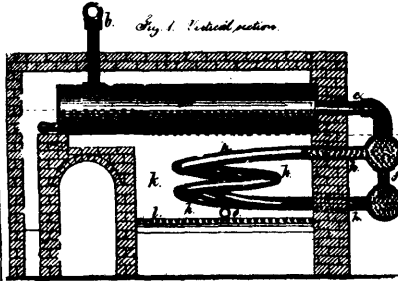
1978 Walker & Adams's Clothes Washing Machine.



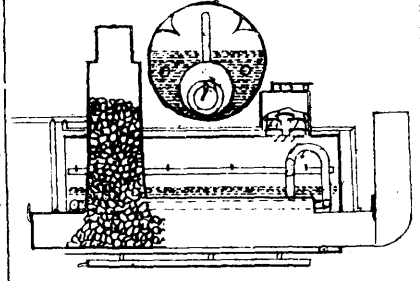
1979 DeVeau & Perkiss's Washing Machine.



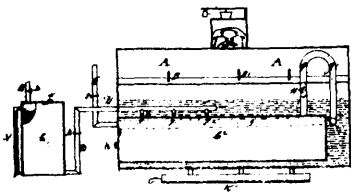
1980 Arnoldi's Frost Proof Tubing.



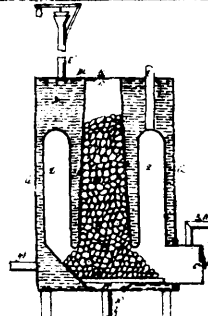
1981 Baker's Steam Apparatus for Heating Buildings.



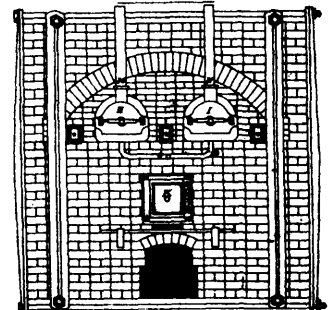
1982 Ketchum's Smoke and Gas Consuming Furnace and Steam Generator.



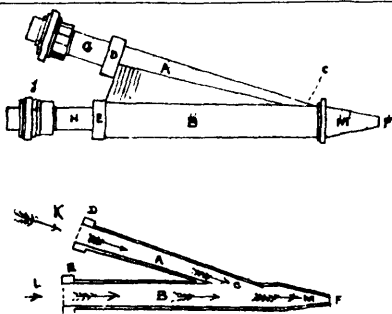
1983 Ketchum's Liquid Fuel Furnace and Steam Generator.



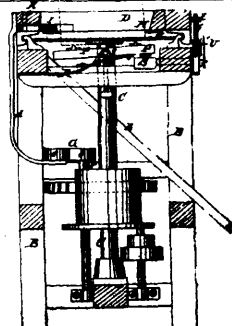
1984 Ketchum's Heating Furnace.



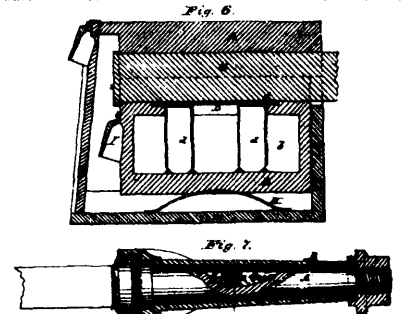
1985 Webster's Process for Manufacturing Iron and Steel.



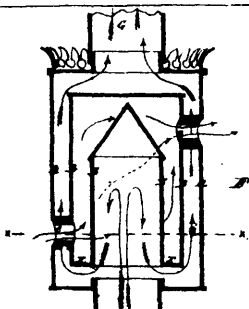
1986 Burns's Tar-Burner.



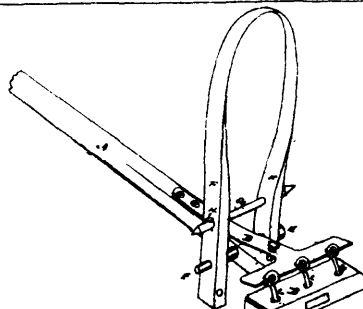
1987 Anderson, Gue & Utley's Shingle Machine.



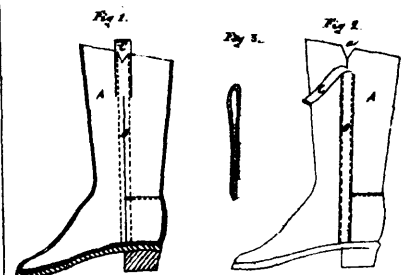
1988 Eggleston's Device for Lubricating Car and Carriage-Axes.



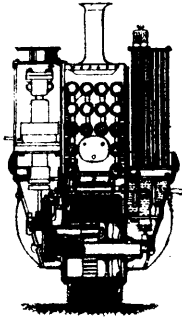
1989 Lough's Stove-Drum.



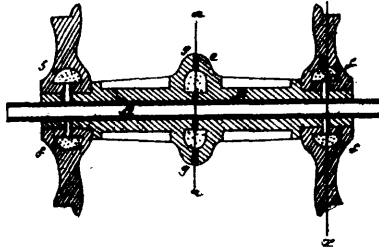
1990 Benedict's Animal Poke.



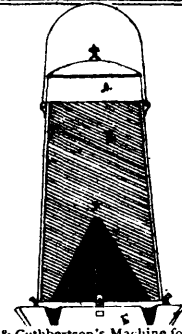
1991 Whitcomb's Improvements on Boots.



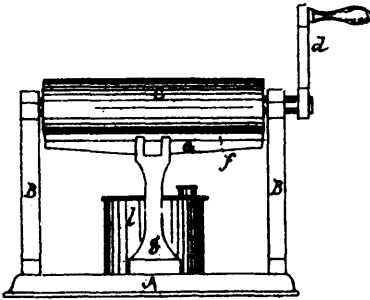
1992 Perkins's Locomotive Engine.



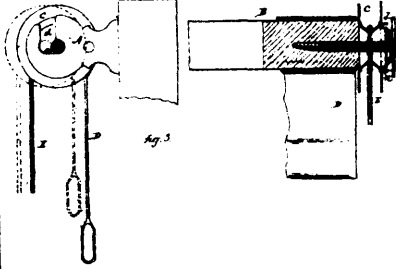
1993 Miltimore & Doty's Car-Axles and Wheels.



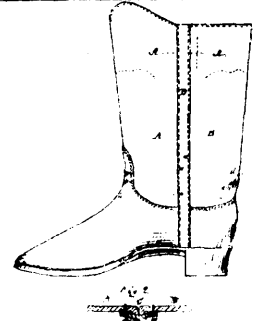
1994 Goold & Cuthbertson's Machine for Catching and Destroying Flies.



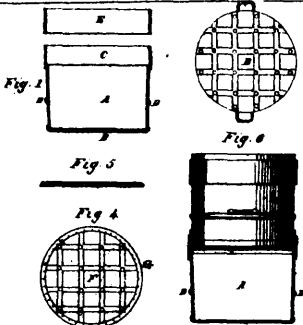
1995 Weston's Machine for Burnishing Photographic Card-Board, etc.



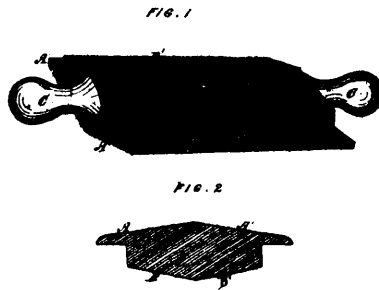
1996 Buckley & Sawyer's Curtain Fixture.



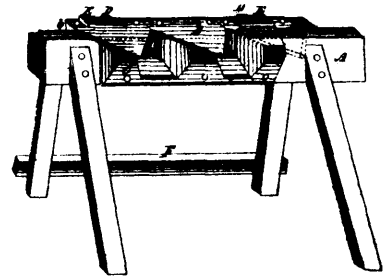
1998 West's Improvement on Boots.



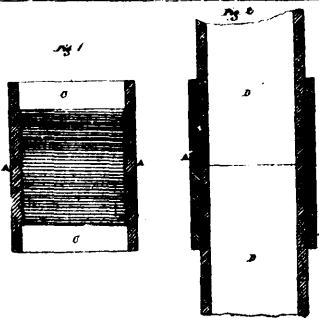
1999 Fraser's Cheese Hoop.



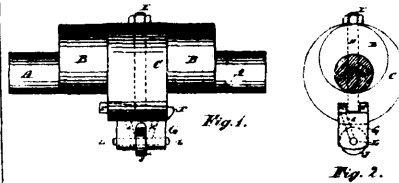
2000 Daniels's Rife for Sharpening Harvesting Cutters.



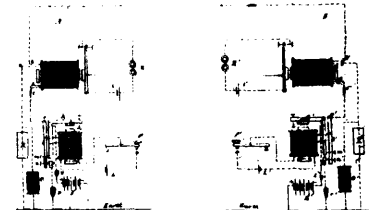
2001 Daniels's Holder for Harvester Cutters while being Sharpened.



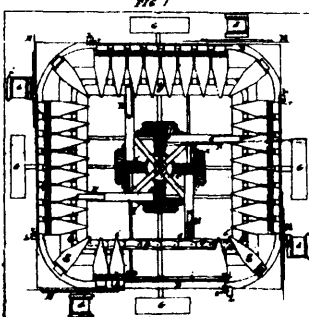
2002 Shay's Pipe-Coupling.



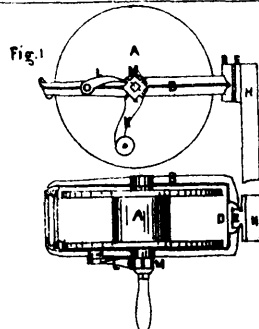
2003 Dunn & Harris's Horse-Shoe Nail Machines.



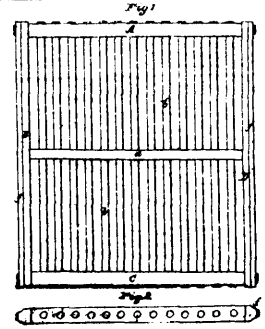
2004 Stearns's Duplex Telegraph.



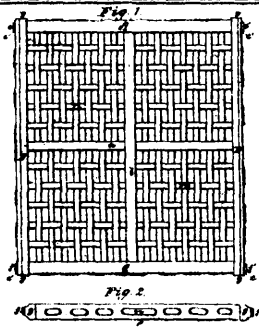
2005 McLabe's Shingle Machine.



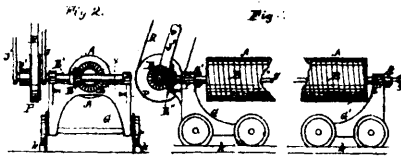
2006 Murphy's Clothes Line Reel.



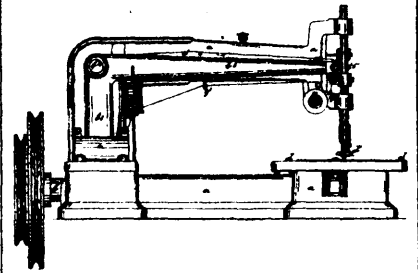
2007 Duffe & Tilton's Gas Purifier Screen.



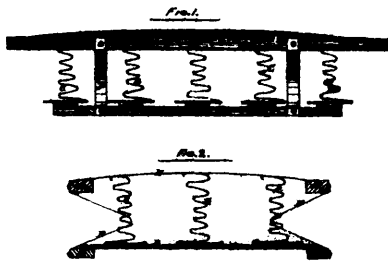
2008 Duffee & Tilton's Gas Purifier Screen.



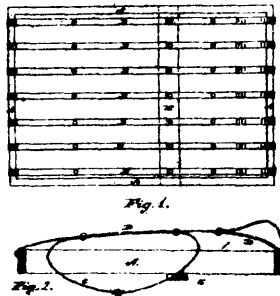
2009 Patric's Laminated Pipe Machinery.



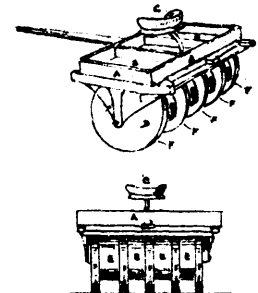
2010 House's Improvements on Sewing Machines.



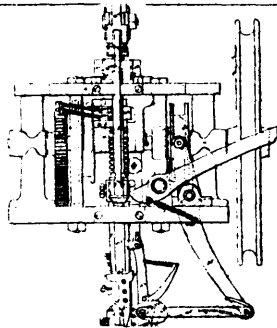
2011 Wood's Double Frame V Spring Bed.



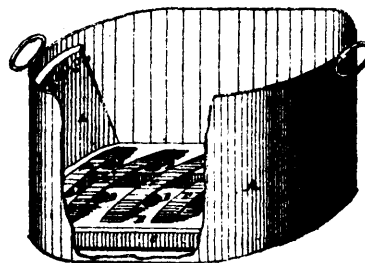
2012 Sarney & Evans's Spring Bed Bottom.



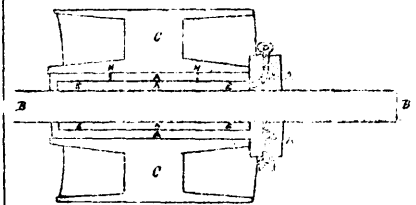
2013 Morlock's Fall-Wheat Drilling Machine.



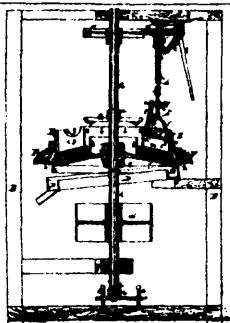
2014 Blake's Boot and Shoe Sole Pegging Machine.



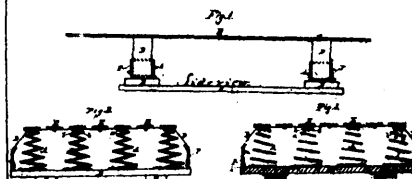
2016 Tilton's Washing Boiler.



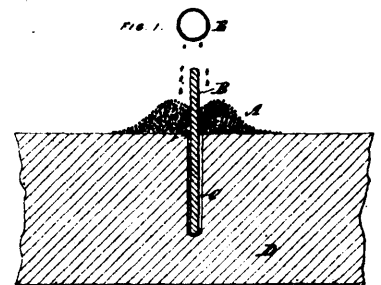
2017 Telfer's Oiler for the Shafts of Louse Pulleys and other Bearings.



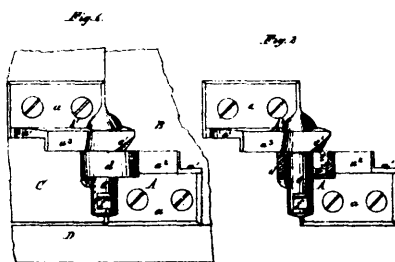
2018 Gilmore's Machine for preparing Wood for Paper Pulp.



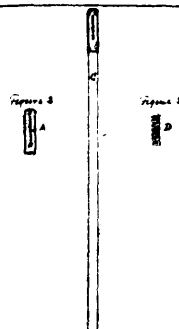
2019 White's Spring Bed.



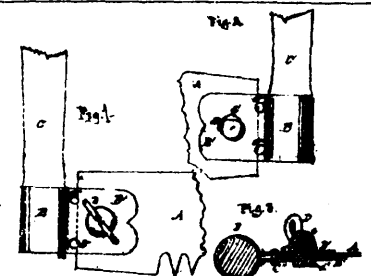
2020 Tilghman's Method of Cutting-Hard Substances.



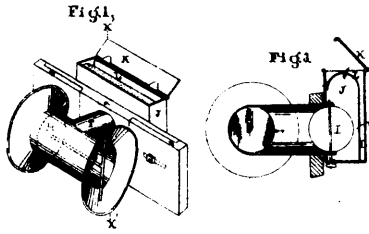
2021 Garretson's Blind Hinge.



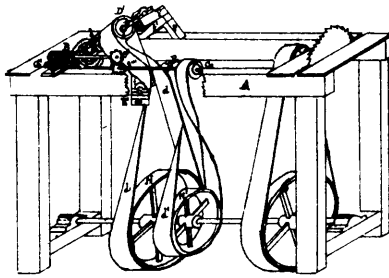
2022 Freeman's Tent Spring.



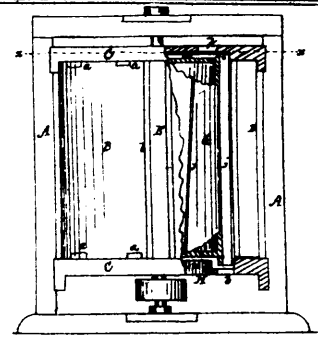
2023 Emerson, Waterous & Wilkes's Removable Saw Set Socket.



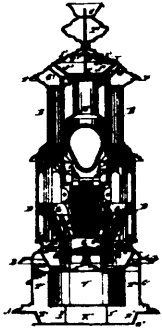
2024 Maine's Portable Ventilator.



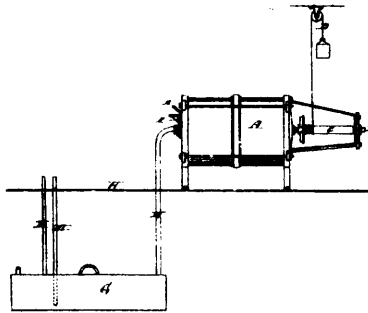
2025 Butler & Duclos's Machine for Cutting Laths.



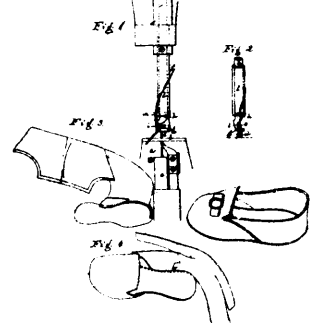
2027 Dodson's Grain Scourer.



2028 Keep's Side Base Burning Stove.



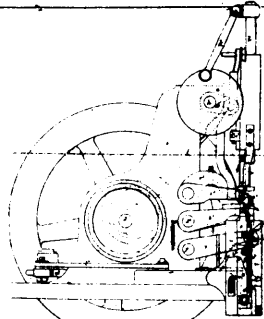
2029 Nunn's Carburetting Machine.



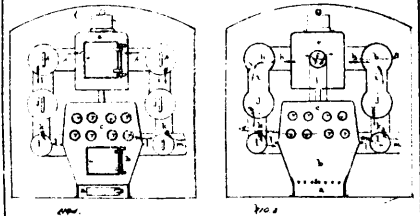
2030 Richardson's Improved Shoe.



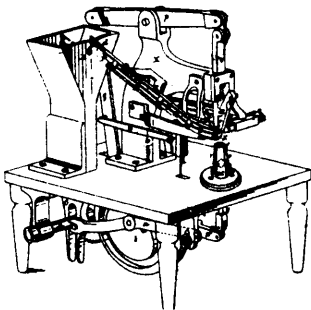
2031 Beckett's Twin Bob-Sleighs.



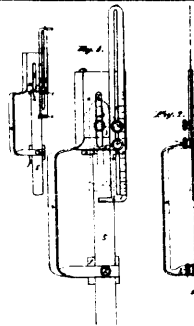
2032 Richardson's Shoe Sewing Machine.



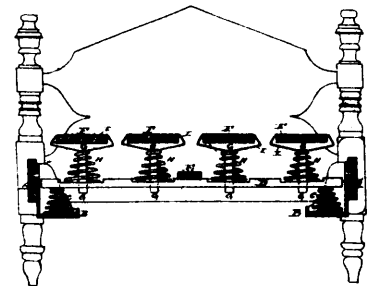
2033 Muot's Hot Air Tubular Furnace.



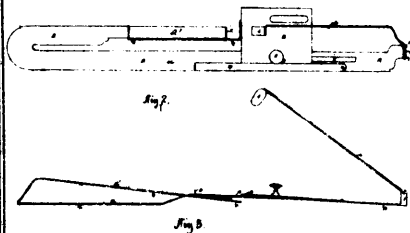
2034 Bradford's Machine for Setting Buttons or Lacing-Hooks.



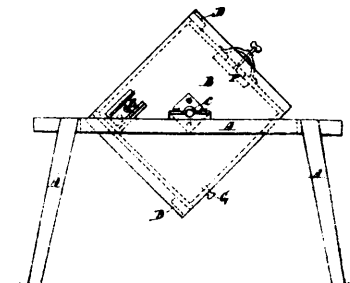
2035 Farrand's Tuck Folders of Sewing Machines.



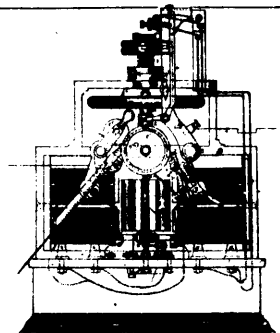
2036 Watt's Spring Bed Bottom.



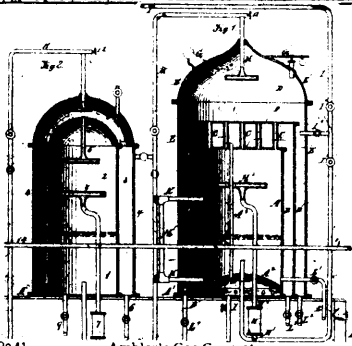
2037 Kellogg's Tuck Marker of Sewing Machines.



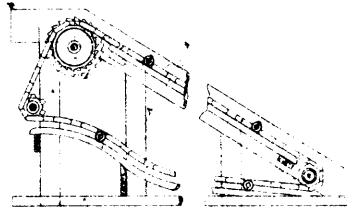
2038 Stalford's Churn.



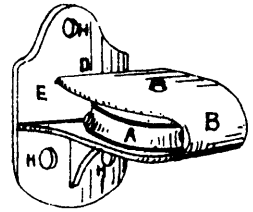
2039 Little's Electric Telegraph Apparatus and Circuit.



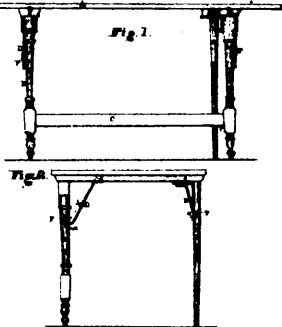
2041 Aubler's Gas Generator.



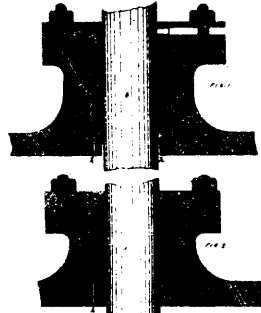
2043 Hamilton & Ludgate's Machine for Raising Saw Logs on to the Mill floor.



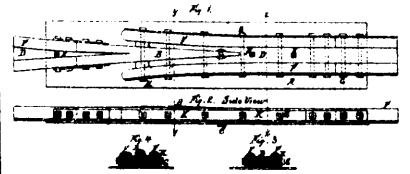
2045 Straffin's Improvements in Bracket Sheaves.



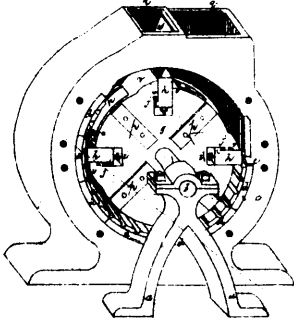
2046 Mahan's Lap Board.



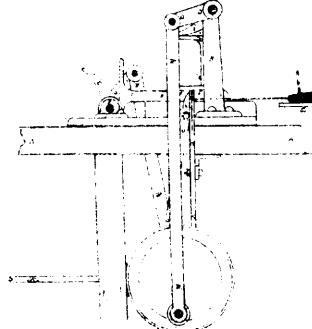
2047 Partington & Bloomfield's Steam Engine Packing.



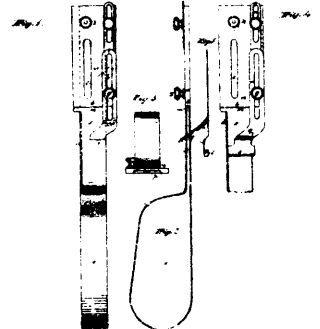
2048 Wood's Railway Frog.



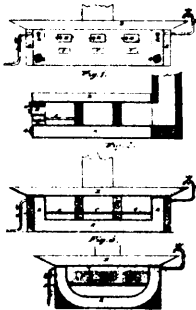
2049 Mitchell's Mill for Grinding Hard Substances.



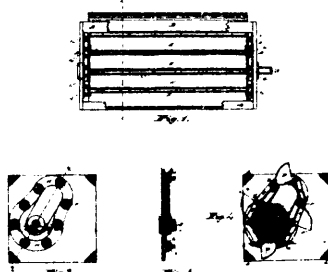
2050 Larochelle's Machine for Making Bale Hoops.



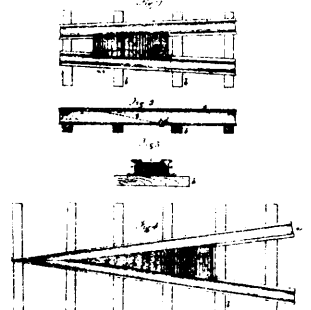
2051 Nunn's Sewing Machine Tuckor.



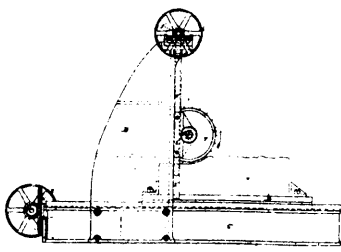
2052 Hayes' Furnace for Heating Liquids in the Process of Evaporation.



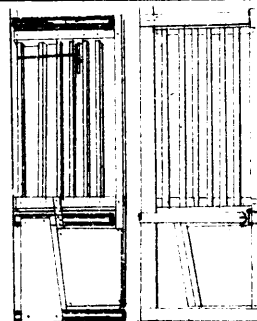
2054 Williams' Excavating Machine.



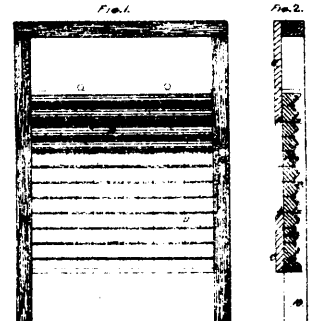
2055 Gerdes' Railway Frog (Rail Junction) Protector.



2056 Baxter's Stone Dressing Machine.



2057 Spencer's Counterpoise Farm Gate.



2058 Jackson's Washing Board.