

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Continuous pagination/
Pagination continue
- Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

- Title page of issue/
Page de titre de la livraison
- Caption of issue/
Titre de départ de la livraison
- Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
								✓			

The Canadian Patent Office

RECORD




Vol. I.—No. 1.

MARCH, 1873.

Price \$1.50 per An.

CONTENTS.

DESIGNS PATENTED,	25
INVENTIONS PATENTED,	1
INDEX OF INVENTIONS,	21
INDEX OF PATENTEEs,	22

INVENTIONS PATENTED.

No. 1645. WILLIAM S. MEAD, New York, U. S., 17th October, 1872, for 5 years: "A Sewing Machine." (Une Machine à coudre.)

Claim.—1st. The rotary hook Y, and thumb and finger mechanism whereby the loop is elongated and the thread crossed to receive the descending needle in the formation of a chain and a spiral stitch; 2nd. The two eccentrics B, B, on the main shaft A, whereby one raises and the other moves the feed forward; 3rd. Providing the shuttle case F, with a lower bar G, to rest the shuttle; 4th. The employment of a lever H, and springs I, and L, for operating the thumb and finger mechanism; 5th. The oval egg form of sweep given to the hook Y, in elongating, relinquishing and seizing the loop, in making a spiral stitch when the thread is in the shuttle and the chain stitch when the shuttle thread is disconnected; 6th. The formation of a lock stitch when the thread is in the shuttle, by the hook Y, after taking up the loop from the needle, casting it over the under part of the shuttle, and then seizing the succeeding loop from the needle and drawing up the first loop into the cloth; 7th. The adjustment of the thread by passing it backward through the eye d, backward around the disc c, forward through the eye d, and thence to the needle bar e, and needle for securing the "take up," and for tightening the thread when the hook is at the bottom of the shuttle; 8th. The employment of a rotary washer g, as set forth.

No. 1646. CHARLES H. PARSHALL, Detroit, Mich., U. S., 17th October, 1872, for 15 years: "A Lubricator." (Un graisseur.)

A mechanical apparatus for feeding oil for lubricating purposes
Claim.—1st. In an oil Cup, the combination of the concentric tubes K and L, the latter being provided with the openings v, and gaugeable opening; 2nd. In combination with an Oil Cup, in the hot air chamber C, when inclosing the tube D, packed at d, d, and provided with ducts f, f; and 3rd. The combination of the cup B, provided with faucet M, and stem G, provided with ducts J, J, screw valve I, tube I, and wick or without the concentric tube K.

No. 1647. THOS. O. WARD, Kalamazoo, Mich., U. S., 17th October, 1872, for 5 years: "A Railway Brake." (Un frein de chemin de fer.)

Brake worked by compressed air from a reservoir on locomotive connected by pipes and valves with railway cars, which Engineer is enabled to apply or disconnect instantaneously. Also acts automatically when a car becomes detached from train.
Claim.—1st. The valve D, with the chamber F, chamber G, head P, seat F, and ball E, arranged to operate in connection with the air pump A; 2nd. The reservoir I, in connection with pipes Y, and Z, arranged with stop cock in each; 3rd. The automatic closing valve coupling K, spring O, with rubber packing R, acting in combination; 4th. Cylinder U in combination with spiral spring D₁, piston head A₁, with piston rod B₁, stop cock C₁, in pipe T, also pipe d; 5th. The arrangement of the air pump A, cylinder U, spiral spring D₁, pipes Y, T, d, stop cock L, C₁, S₁, C₁ and I, and valves D and H, and piston rod and piston B, B₁, hose M, N.

No. 1648. CYRUS WELLINGTON SALADEE, St. Catharines, Ont., 17th October, 1872, for 5 years: "A Gate." (Une barrière.)

A Gate hinging on portable post, swinging both ways, self-locking, and capable of being adjusted at any height to fit on the ground.

Claim.—1st. The portable post B; 2nd. The adjustable brace H, in combination with the brace lock I, and 3rd. The combination of the portable post B, arms E, lever E, and intermediate post D, in connection with the main body of the Gate.

No. 1649. CYRUS W. SALADEE, St. Catharines, Ont., 17th October, 1872, for 5 years: "A door and gate spring." (Un ressort de porte et de barrière.)

A round rod or spring of steel of appropriate length and thickness is so arranged in combination with a bracket and two arms that the torsional action of same closes door or gate.
Claim.—The combination of the bearing D, arms A₁, and B, Brackets C, and H, with the torsional spring F, as described.

No. 1650. CYRUS W. SALADEE, St. Catharines, Ont., 17th October, 1872, for 5 years: "Springs for Vehicles." (Des ressorts de voitures.)

One or more equalizing shafts are so applied and operated in connection with torsional springs as to compel them to act in unison so as to prevent side motion or undue strain, and to gain a greater degree of central vibratory motion
Claim.—1st. In combination with Torsional Springs in the equalizing shafts B and B, 2nd. Supporting and operating the lever ends of torsional springs in or upon the outer ends of oscillating cranks C, 3rd. The arrangement of torsional springs A in pairs so that their bearings J, shall be or a parallel line with the edges of the bed plate, 4th. Securing the squared ends I of the springs A, in position by means of the screw nuts O, and 5th. Forming the lever arms of torsional springs in the shape of a half circle and securing the outer ends of the same in their bearings by screw-nuts F.

No. 1651. CYRUS W. SALADEE, St. Catharines, Ont., 17th October, 1872, for 5 years: "Springs for Vehicles." (Des ressorts de voitures.)

Claim.—1st. Torsional spring A, in the employment of squared rods of steel; 2nd. Supporting and operating the lever ends of squared torsional springs in the loose sleeve bearing B, 3rd. Forming the sleeve B as a part of the crank C, and 4th. The combination of the sleeve B, rod A, and split journal box D, E.

No. 1652. JOHN B. ARMSTRONG, Guelph, Ont., 17th October, 1872, for 5 years: "Improvements in Carriages." (Perfectionnements dans les Voitures.)

Claim.—The making of carriage springs with the solid tits or raised parts A, A, also putting the nut or washer C (shouldered on the end of the king bolt) on the top of the head block plate D and sinking the same into the wood on the under side of the head block E, as specified.

No. 1653. JAMES COLLINS, Guelph, Ont., 17th October, 1872, for 5 years: "Improvements on Harvest Rakes." (Perfectionnements aux râteliers à grains.)

Claim.—1st. The combination of the rake-head F, the upwardly inclined slotted rake-arm F₁, the swivel joint G, the bracket B₁, the continuously revolving arm C₁, and the vertical rod C₂, that pass through the slot J, in the rake-arm F₁, and serves to operate it; 2nd. The combination of the rake-head F, the slotted rake-arm F₁, the bracket B₁, the revolving rod C₂, and the adjustable collar c₁, on the rod C₂ for regulating the height that the rake-head is lifted above the platform; 3rd. The combination of the rake-head F, the rake-arm F₁, the hinge plate G, the bracket plate B₁, provided with means for adjusting the hinge plate G, and rake-arm F₁, relatively to the finger beam, and the revolving crank-arm c₁, for operating the rake; 4th. The combination of the bracket B₁, the inclined rake-arm F₁, pivoted to the bracket B₁, the rake-head F, the friction roller / and the guide plate H.

No. 1654. CYRUS W SALADEE, St. Catharines, Ont., 17th October, 1872, for 5 years: "Springs for Vehicles." (Des ressorts de voitures.)

This invention consists in the arrangement of torsional springs of appropriate length and thickness in proportion to the weight intended to be borne in pairs or sets parallel with the axle of the vehicle or otherwise.

Claim.—1st. The combination of the springs A, cranks B, slides C, guides D, or their equivalents, with or without the rubber springs or bearings I, and 2nd. The combination with torsional springs A, the connecting rods F and FI.

No. 1655. JAMES JAMIESON, Hamilton, Ont., 17th October, 1872, for 5 years: "A Sewing Machine." (Une machine à coudre.)

Claim.—1st. Giving the shuttle of Sewing machines a rotary oscillating movement, produced by an ordinary crank motion, 2nd. The arrangement of the shuttle carrier I, crank J, pin K, sliding in the slot W, in combination with the disk S, shaft R, and shuttle race O, producing a rotating oscillating motion to the shuttle: 3rd. The arrangement of the longitudinal slot D₁ in the pressure foot D, to overcome the variations in the hammers.

No. 1656. ROBERT S. JARVIS, Toronto, Ont., 17th October, 1872, for 5 years: "An adjustable Window Curtain Roller." (Un rouleau mobile pour les rideaux de fenêtres.)

Consists of tubes running within each other so that the roller can be lengthened or shortened, and the roller being made of open tubes the blind can be attached to it by insertion between the joints when adjusted in line, the turning of the tubes closes the opening and fastens the blind.

Claim.—1st. Making the roller of the tubes A, B, and C, as set forth; 2d. Making the tubes A, B, and C with the open joints F, I and G.

No. 1657. PETER K. DEDERICK, Albany, N. Y., U. S., 17th October, 1872, for 5 years: "A Hay Press." (Une presse à foin.)

The press is fitted with a progressive power gear forming and discharging the bale and using the bale so formed as a press head.

Claim.—1st. The combination of the horizontal press-box c and bale chamber i, with the hopper a. 2nd. The hopper a, provided with an adjustable bottom; 3rd. The combination of the plunger b, press-box c, and hopper a; 4th. The combination of the plunger b, press-box c, and bale chamber i; 5th. The shoulders at the junction of the press-box c, and bale chamber i, with or without iron covering and teeth, 6th. The folder or doubler o, in combination with the press-box c; 7th. The bale used as the press head; 8th. The slotted follower l. 9th. The press arranged to discharge the bale by additional charges of hay in forming the next bale; 10th. The spur wheels j and h, arranged as shown for the purpose of producing progressive power; 11th. The concave or bevelled corners of the bale chamber i; and 12th. the plunger b, formed with spring top, and with guards S, S.

No. 1658. DUNCAN E. MCFARLAND, Niagara, Ont., 17th October, 1872, for 5 years: "An Artesian well-pipe driving machine." (Une machine servant à chasser les sondes des puits artésiens.)

Consists in a suitable frame containing an iron block working on guides with appropriate machinery for lifting and dropping same. Can also be applied in like manner for driving fence posts.

Claim.—The combination of the block B, piece of wood K, supporter J, working on the guides C.

No. 1659. JOHN D. ROBERTSON, St. John, N. B., 17th October, 1872, for 5 years: "Art of packing cut tobacco." (Manière d'envelopper le tabac haché.)

Claim.—A package of fine cut tobacco, the packing or envelope of which is leaf tobacco, as a new and improved article of manufacture.

No. 1660. CHAS. D. TISDALE, Boston, Mass., U. S., 17th October, 1872, for 5 years: "Apparatus for changing the trucks of Railway Cars." (Appareil pour changer les trains des chars de chemins de fer.)

Adaptation of rails and appliances for changing the trucks of railway cars and replacing them with others of a different and suitable gauge.

Claim.—1st. The rails b and c, with upper bevel a, incline d, and lower bevel e, in combination with the elevated rails f; 2nd. The rails f, in combination with the wheels g, or friction rollers, and 3rd. The hooks, or chains and hooks i, as specified.

No. 1661. JAMES ENGLAND, Paris, Ont., 17th October, 1872, for 5 years: "A Cradle." (Un Berceau.)

Improvement in the manner of hanging the cradle and balancing it on what is termed a "Knife Edge."

Claim.—The combination of the rods C, C, saddles D, D, supports E, E, fastened and attached to the cradle A, and top piece F.

No. 1662. NATHANIEL JONES, Syracuse, N. Y., U. S., 17th October, 1872, for 15 years: "A truss." (Un bandage.)

It is made of a sheet of metal perforated with holes. The edges of the plate being bent back to protect the skin from injury. The straps are made with hooked ends passing into slots in a portion of the truss behind the surface of the plate avoiding contact with the person. The truss is shaped and adapted to different forms of hernia.

Claim.—1st. The metallic truss plate a perforated with numerous small holes, and having an edge that is bent back; 2nd. The slots i, in the recessed or back portion of the plate a, to receive the enlarged ends of the hooks n, upon the end plates or buckles of the straps p; 3rd. The truss pads e, combined with the perforated truss plate; 4th. The lever attachment for the straps f, f, made by the legs b, upon the buckle or frame g.

No. 1663. OTWAY C. HERBERT, assignee of T. SIMMONS, Halifax, N.S., 17th October 1872, for 5 years: "A Safety Lamp." (Une Lampe de sûreté.)

Consists in combining the oil reservoir with an air cylinder, feed and central tubes, together with a generating burner in such a manner that the fluid ascends by capillary attraction.

Claim.—1st. The combination of the air cylinder tube E, with or without the perforated covering feed pipes C, C, and tube D, arranged as set forth in the reservoir A; 2nd. The burner figure 4, consisting of the tube F, non-conducting jacket and lock nut; 3rd. The combination of the burner figure 4, and tube D, when applied to the oil reservoir A, having tubes F and pipes C, C.

No. 1664. WM. P. SMITH, Erie, Pa., U.S., 17th October, 1872, for 5 years: "A burning Fluid for Lamps." (Un Fluide pour l'éclairage.)

Claim.—The combination of camphor, saloratus, cammon salt, in the benzine or naphtha, in the proportion, each with the other, in the manner described.

No. 1665. HENRY A. TILDEN, New Lebanon, N. Y., U. S., 17th October, 1872, for 5 years: "A compound for Disinfecting." (Une composition Désinfectante.)

Claim.—A disinfectant compound composed of bromure, chlorine and aluminum prepared and employed for the purposes set forth.

No. 1666. THOS. S. SARNEY, Ottawa, Ont., 17th October, 1872, for 5 years: "A Stove and Furnace Pipe." (Un Tuyau de Poêle et de Fourneau.)

Consists in a series of chambers connected by necks telescoping together or otherwise, so that heat and smoke in a ascending will be alternately contracted in space, the chambers diffusing caloric and forming a ventilating current.

Claim.—In a metal smoke-pipe for stoves and furnaces, the combination of the radiating chambers B, and necks C, used connectedly in the manner described.

No. 1667. EDWARD H. BAILEY, Brooklyn, N.Y., U.S., 17th October, 1872, for 15 years: "A Stair Pad." (Un Coussinet d'escalier.)

Claim.—1st. The stair pad impregnated with the essential oils of sandal, or cedar-wood or with the powders of sandal or cedar-wood. 2nd. The outer stair pad covering C, combined with the inner paper-layer or layers A and impregnated as set forth. 3rd. The combination of the cotton batting or wadding B, with the covering C and paper-layer A, as specified.

No. 1668. THOMAS MAXON, Springfield, Ohio, U.S., 17th October, 1872, for 10 years: "A Lifting Jack." (Un Cric.)

Claim.—1st. The pawl E, provided with pins or journals b, and sliding in the slots d of the post A. 2nd. The combination of the eccentric lever D, and the sliding pawl E; 3rd. The combination of the hollow post A, rack bar B with plate C, eccentric lever D, sliding pawl E, and pawl e.

No. 1669. ELIJAH H. PRENTISS, Sarnia, Ont., 17th October, 1872, for 5 years: "An Alcohol Refining Apparatus." (Un Appareil à raffiner les Alcools.)

Claim.—1st. The concave diaphragm H, arranged below the false bottom i, for conducting into the chamber K, and separating the fusil oil and other impurities from the vapors, and its combination with his rectifying apparatus. 2nd. The pipes O filled with pumice stone or its equivalent to atomize the vapors, in combination with the pipes P, and the chambers B and i, at top and bottom of the condenser; 3rd. The trap-pipe z, in combination with the diaphragm H, and the bottom chamber K, for conveying the impurities into boiler No. 1, and 4th. The whole condenser No. 3, in combination with his said rectifying and refining apparatus.

No. 1670. EDWIN C. SEELY, Port Medway, N. S., 18th October, 1872, for 5 years: "A Mast Ball." (Une Pomme de Mat.)

A case of glass covering mast rendering it non-electric and blown or cast with a hollow space or groove for working ordinary signals
Claim.—1st The ball *a*, hollow space *b* and recess *c*. 2nd The ball *a*, hollow space *b*, recess *c*, groove *d*, passages *e*

No. 1671. CHESTER H. POND, Kenosha, Wis., U. S., 18th October, 1872, for 5 years: "A Telegraph Insulator." (Un Isoloir de Télégraphie.)

Protected by metal cap, &c., attached to stem and coated with a non-conducting compound of equal parts of distilled coal-tar and shale, or charcoal amalgamated by heat and mechanical force.
Claim.—1st. The form for a telegraph insulator consisting of the head *A*, caps *C*, stem *B*, collar *E*, chamber *J*, *J*, with or without centre pin or rod *F* and shield *G*; 2nd. The non-conducting coating for the insulator, consisting of the ingredients mentioned, in the proportions set forth.

No. 1672. HUNTER BRADFORD, Assignee of A. CHASE, New York, U. S., 18th October, 1872, for 5 years: "Art of Stereotyping." (Art de Stéréotyper.)

Claim.—1st. A plastic coating on the face of a papier-mâché or similar stereotype matrix composed of dextrine, whiting and water, or their equivalents, in the proportions set forth, 2nd. Drying a papier-mâché, or similar stereotype matrix apart from the form of type under a super-imposed weight or mass of sand, or its equivalent.

No. 1673. FREDERICK H. STEIGMEYER and ADAM REICHERT, Attica, O., U. S., 18th October, 1872, for 15 years: "Seats for Waggon, Cars, &c." (Sièges de Voitures, Chars, &c.)

Spring seats constructed with iron rods and compensating links at inner ends thereof attached under centre of seat
Claim.—1st. The rods *A*, and the links *B*, connected and operated as set forth. 2nd. The combination of the rods *A*, the links *B*, and spiral springs *C*, with a seat of any form.

No. 1674. JOSHUA L. ABELL, Northampton, Mass., U. S., assignee of Owen Bryant, West Chesterfield, Mass., 18th October, 1872, for 5 years: "Improvement on Water Wheels." (Perfectionnement des roues hydrauliques.)

Relates to the mode of discharging water to the wheel and controlling its flow, and consists in a series of movable chutes operating in connection with stationary chutes and the mechanism by which the discharge apertures are regulated.
Claim.—The spider *H*, with the rim *K*, chutes *E* and *L* combined and arranged to operate in connection with a water-wheel.

No. 1675. HORACE H. BIGELOW, Worcester, Mass., U. S., 18th October, 1872, for 15 years: "Machine for heeling boots and shoes." (Machine à talons de chaussures.)

Claim.—1st. A spring holding die, for retaining the heel in proper position while it is being secured to the boot or shoe; 2nd. The combination with the holding die *G*, of the driving stud *I*, provided with a head plate *c*; 3rd. The combination with the holding die *G*, and driving stud *I*, of the spring *d*; 4th. The combination with the holding die *G*, and driving stud *I*, of the relieving spring device *M*, *M*, *M*, and adjusting screws *N*, and *o*; 5th. The combination with the driving stud *I*, and disc *F*, of the adjusting screw *o*; 6th. The combination with a series of holding dies *G*, and driving studs *I*, of the rotating plate or disc *F*; 7th. The combination with the spring die *G*, of the depressing lever *Q*, rod *S*, and treadle *P*; 8th. The combination with the holding die *G*, driver stud *I*, and operating plunger *E*, of the spring jack spindle *L*; 9th. The combination with jack spindle *L*, of the hand lever *L*, and handle *L*; 10th. The combination with the operating plunger *E*, and power dog *H*, of the bell-crank shipping lever *H*, connecting rod *O*, and treadle *P*; and 11th. A machine for heeling boots and shoes, the parts of which are constructed and combined together.

No. 1676. PIERRE E. JAY, St. Jean-Baptiste, Que., 18th October, 1872, for 5 years: "Process of making wrought iron from cast iron." (Procédé pour faire du fer forgé avec la fonte.)

Claim.—The process of purifying cast iron by placing it in a liquid heated state, in contact with a mixture of bioxyde of manganese nitrate of soda, and oxyde of iron, in the detailed proportions, so as to cleanse the metal of its extraneous substances, making it equal in quality, to the best of wrought iron used for horse shoe nails.

No. 1677. THOMAS ROUTLEDGE, Ford Works, New Sunderland, Eng., 18th October, 1872, for 5 years: "Art of treating fibrous substances for

textile purposes and paper stock." (Manière de traiter les substances fibreuses pour les matières textiles et la pâte à papier.)

Claim.—1st. Preliminary preparation of raw vegetable, fibrous substances, in order to reduce them into a fibrous condition, suitable for textile purposes, and for paper stock, by steeping the same in an alkaline bath, and subsequently subjecting them to fermentative steeping. 2nd. The continuous system of boiling in a series of vessels connected together; 3rd. The continuous system of bleaching vegetable fibrous substances; 4th. The peculiar construction and arrangement of apparatus for steeping, boiling, bleaching and washing vegetable fibrous substances; and 5th. The utilization of the by or secondary products, resulting from vegetable fibrous substances when treated in the manner described.

No. 1678. GEORGE H. PENCOCK, Webster, N. Y., 18th October, 1872, for 5 years: "A Keyless Lock" (Une serrure sans clef.)

Consists in connecting the bolt, lever and finger bars in such a manner as to allow the bolt to be shot back by a proper manipulation of the finger bars.

Claim.—1st. The bolt *A*, having the incline *X*, and the lever consisting of the cross plate *C* and arms *D*, in combination with the finger bars *E*, *E*, and *E*; 2nd. The bolt *A*, having the incline *X*, spring *B*, cross plate *C*, arms *D*, and guards *F*, in combination with the finger bars *E*, *E*, and *E*, provided with slots *G*, *G*, shoulders *H*, *H*, and indenture *K*.

No. 1679. ALBERT H. HILL, St. Johnsbury, Vt., U. S., 18th October, 1872, for 5 years: "A clothes drier." (Un séchoir à linge.)

Claim.—The bracket *a*, the rods *o*, the adjustable staple *j*, the rigid pin *h*, with the socket *e*, and the hole *i*, each as described.

No. 1680. WILLIAM SMITH, ALEXANDER REEKIE AND CHARLES HUGH JAY, all of Beaverton, Ont., 18th October, 1872, for 5 years: "Improvement on the 'Sprague Mower.'" (Perfectionnement à la faucheuse dite 'de Sprague'.)

Consists in imparting, by the raising or lowering of the main lever, a rolling or tilting motion to the cutter bar, which in the original machine is kept in a rigid position by a solid bar.

Claim.—1st. The main lever *a*, *p*, so connected to the casting *c*, *c*, to which the cutter bar is hinged, that by raising or lowering the said lever, a rolling or tilting motion is given to the cutter bar of this particular mower "The Sprague," as shown by the dotted lines 1 and 2, in the drawings; 2nd. The ratchet casting *f*, *f*, against which the main lever moves; 3rd. The spring lever *h*, *h*, which holds the main lever in position by means of the notches in casting *f*, *f*, and small spring *k*; 4th. The small spring *k*, connected to the handle of main lever and acting against the handle of the spring lever, to force it into position and hold it there when released by the hand of the operator; and 5th. The casting *i*, on back of main lever by which said lever is held close to and connected to the casting *f*, *f*, and longitudinal motion in the main lever overcome.

No. 1681. DAVID Mc. C. SMYTH, Orange, New Jersey, U. S., 19th October, 1872, for 5 years: "Improvements in Sewing Machines." (Perfectionnements aux machines à coudre.)

Claim.—A pattern cam *E*, moved progressively by the ratchet and pawl *K*, and link *L* (or the pinion) in combination with the feed bar, and pin *g*, for communicating a lateral movement to the feeding device of a sewing machine in addition to the ordinary progressive movement.

No. 1682. PIERRE E. JAY, St. Jean-Baptiste, Que., 19th October, 1872, for 5 years: "Process for making cast iron from ore and machine for same." (Procédé pour faire la fonte et machine pour cet objet.)

Claim.—1st. Using slag being the residue of the burning of cast iron with bioxyde of manganese, nitrate of soda and oxyde of iron in the proportions of three pounds of a mixture of ten parts of bioxyde of manganese, ten parts of nitrate of soda and six parts of oxyde of iron, to one hundred pounds of cast iron for melting iron ore arranged in layers in combination with the addition of cast iron. 2nd. Using the blast pipe *d*, for the purpose set forth.

No. 1683. ELWIN G. WILLEY, Hoosack Falls, N. Y., U. S., 19th October, 1872, for 5 years: "Machine for transmitting power." (Mécanisme de transmission de la puissance.)

Consists in transmitting power from the motive force or any pulley rotated by such force to the main or fly wheel of any machinery.

Claim.—1st. The combination of the pulley *i*, friction wheel *h*, shafts *a*, and plates *C* and *d*, in combination with shaft *b*, and fly wheel *a*; 2nd. The combination of shafts *a*, toothed wheels *h*, circular rack *i* and pinion on shaft *b*, in combination with shaft *b*, and wheel *a*.

No. 1684. HUBERT R. IVES, Montreal, Que., 19th October, 1872, for 5 years: "Combined Household tools." (Un nécessaire d'outils de maison.)

Claim.—The combined tool consisting of shears *c*, *c*, jaws *e*, *e*, hammer *f*, all arranged together and working in combination with levers *a*, *a*.

No. 1685. JAMES YEMEN, Stratford, Ont., 19th October, 1872, for 5 years: "A dental plate." (Une plaque dentaire.)

Consists in a circular valve of pliable substance attached to ordinary artificial plate by a rivet penetrating both valve and plate.
Claim.—The valve *B* and the mode in which it is attached to the plate, to wit, by means of the rivet *A*.

No. 1686. GEORGE SWEET, Dansville, N. Y., U. S., 19th October, 1872, for 5 years: "A horse hay rake." (Un râtelier à cheval.)

Claim.—1st. The combination in a horse hay rake having wheels *B*, *B* and axle *A*, of a series of rake teeth *D*, attached to a cross bar *c*, rigidly connected parallel with and in rear of the axle shaft *J*, with cranks *e* and lever *L*, rods *f*, guide standards *M*, *M*, and brake blocks *K* acting on the periphery of the driving wheel for unloading the rake; 2nd. The lock lever composed of the three parts *I*¹ and *I*²; and 3rd. The combination of the lever *L* with the cam *i*, and pivot bar *a*, for breaking the joint of the lock lever.

No. 1687. WILLIAM WESTLAKE, Chicago, Ill., U. S., 19th October, 1872, for 10 years: "A stove platform." (Une plateforme de poêle.)

Claim.—1st. The zinc board for stoves, consisting of the zinc cover *A* spun over the flange *a* and under the edge *c*, whereby the parts are firmly united and held in place without the use of nails or screws, and the sheet provided with a solid bearing around its edge. 2nd. The platform for stoves consisting of the parts *j*, *h*, with an interior support of wood or other suitable material, the part *j*, and the interior support being held together and in place by the flanges *i*, *g*, of the part *h*, substantially as set forth.

No. 1688. DANIEL E. TEAL, New Lisbon, N. Y., U. S., 19th October, 1872, for 15 years: "A Road Scraper." (Une machine à nettoyer les chemins.)

Consists in elevating the scraper by mechanical power and locking the pivoted scraper frame in a vertical position.
Claim.—1st. The means provided for elevating the scraper, consisting of the pivoted frame *H* and *I*, the hollow and solid poles *F* and *F*, the cord *g*, and the pulley *K*. 2nd. In combination with the above named elements, the lever bar *U*, pivoted to or upon the pivoted scraper frames; 3rd. In combination with the pivoted scraper frame *H* and *I*, the locking bar *O* provided with the notches *O* pivoted to or upon the rod *P*, and engaging with said cross bar *I*; 4th. In combination with the pivoted scraper *K*, connected with and suspended from the bars *H*, the bars *M*, pivoted to or upon the rod *I* connected together by means of the cross-bar *M*, and angle iron *n* and engaging with the rear side of said scraper; 5th. The device as a whole, when its parts are constructed and combined as specified.

No. 1689. JOSEPH LODGE, Whitecroft, near Sydney, Eng., 19th October, 1872, for 5 years: "Manufacture of Artificial fuel." (Fabrication de combustible artificiel.)

Claim.—The combining together and moulding into blocks small coal, coke, or peat and vegetable or mineral tar and mucilage or paste made of, or farina or other such like substance, with or without the addition of pitch in a powdered or dry state and subsequently exposing such blocks to heat.

No. 1690. RICHARD G. WELFORD, Freedom, Ohio, U. S., 19th October, 1872, for 5 years: "A Miter Box." (Une boîte à onglet.)

Claim.—1st. The supplementary bar *M*, and supports *B*, adjustable to and in combination with the frame *A*; 2nd. The plate *C*, and semi-circular disc *E*, provided with thumbscrew *G*, in combination with the adjustable supports *B* and frame *A*; 3rd. The hinged saw guide *J*, arm *I*, and slotted standard *H*, provided with thumbscrew *K*, in combination with the semi-circular disc *E*, and plate *C*; and 4th. The combination of the hinged saw guide *J*, swivel disc *E*, plate *C*, supports *B*, moveable bars *M*, and frame *A*.

No. 1691. CHARLES & HENRY S. HOELLER, Cincinnati, O., U. S., 19th October, 1872, for 10 years: "A Stove-pipe Elbow." (Un coude de tuyau.)

Claim.—1st. An elbow made of sheet metal having the surplus of metal thrown into exterior crimps *A*. 2nd. A round or circular elbow made of one piece of sheet metal when the curvature of the same is produced by forcing the surplus metal outwardly on the inner arc of the elbow.

No. 1692. WILLIAM H. TURNER, Indianapolis, Ind., U. S., 19th October, 1872, for 5 years: "Warm Air furnaces." (Calorifères à air chaud.)

Improvement in the concentration of heat and in the escape of obnoxious gases.

Claim.—1st. The combination of the stove *A*, the drum *H*, the base *B*, the cylinders *E*, connected by the rings *C* and the register *F* provided with the bars *S*. 2nd. Combination with the furnace, the register *E*, having the stationary bars *e* arranged to cover and obstruct the view through the openings between the revolving bars *s*; and 3rd. The combination of the funnel *w*, escape pipe *v* and smoke pipe *W*.

No. 1693. JAMES W. HARRIS, Toronto, Ont., 22nd October, 1872, for 5 years: "A Window Frame." (Un cadre de fenêtre.)

Improvement in manner of hanging sashes in window frame—attaching upper and lower sashes by cords passing over pulleys within the frame and which connect the two sashes so that in lifting the bottom the upper sash lowers a corresponding distance.

Claim.—The combination of the cord or chain *D*, pulleys *E*, twin pulleys *F*, sashes *B*, and *C*, connected together and fitting into the window frame *A*.

No. 1694. ALFRED M. FARLEY, Quebec, 22nd October, 1872, for 5 years: "A Shoe clasp." (Une agrafe de soulier.)

Claim.—1st. The novel combination of the flaps *c* and *b*, as shown, with the ankle part *a*; 2nd. The hook *d*, plate *c*, eyes *f*, in combination with flaps *B* and *C*.

No. 1695. DAVID JONES, Alleghany, Pa., U. S., 22nd October, 1872, for 5 years: "A Saw Set." (Une Rainette.)

Consists in the arrangement of a series of levers, gauge screws and springs so constructed as to work in combination.

Claim.—The arrangements of the lever *A*, *B*, *f*, *h*, *P*, adjusting screws *o*, *n*, and spring *x*, constructed, arranged and operating as described.

No. 1696. JAMES H. THORP, New York, U. S., 22nd October, 1872, for 5 years: "Coal Oil Stove." (Poêle à pétrole.)

Claim.—1st. The application of the cylindrical rim *F*, to the plate *C*, to form an extension of the chimneys; 2nd. The auxiliary lamp *I* with one of the sides of the oil receptacle curved inward and being provided with metallic hooks *K*, to support it on the rim of the water vessel of the stove; 3rd. Providing the chimneys *D*, with mica slide lights *d*; and 4th. The perforated base *E* when applied and used as set forth.

No. 1697. JOHN ALLAN, East Whitby, Ont., 22nd October, 1872, for 5 years: "A carriage Propeller." (Un propulseur de voiture.)

A substitute for horse power.

Claim.—The arrangement of the machinery whereby by means of levers *B*, cog wheels *D* and *E*, with the arms *F* and *G*, on shaft *H*, secured to a propelling force in the log *C* and shoe *R*, which will enable to propel a sleigh or buggy on an ordinary road.

No. 1698. GEORGE MOLLOY, Southwold, Ont., 22nd October, 1872, for 5 years: "Machine for filing and setting saws." (Machine à limer et donner la voie aux scies.)

Claim.—The arrangement of the circular file *G*, and the saw blocks *b*, and the combination of them for the purpose of filing saws; 2nd. The circular set and set anvil (*R* & *S*); 3rd. The upright set (*M*).

No. 1699. ISAAC FENNO & PATRICK HOWE, Boston, Mass., U. S., 22nd October, 1872, for 5 years: "A cloth cutting Machine." (Machine à tailler le drap.)

Consists in the employment of a rotary cutting disc attached to a shaft made to revolve in a sleeve hinged to jointed arms.

Claim.—1st. A rotary cutter *W*, arranged and operated upon the end of a series of swinging arms; 2nd. The construction and arrangement of the jointed sleeve *S* made to swing around the sleeve *n*, and the jointed arms *l*, *s*, one or more; 3rd. The driving mechanism as shown consisting of the bevel-gears *e*, *f*, or their equivalents, shaft *d*, with its pulley *X* attached, loose pulleys *Y*, *Z*, belts or cords *l*, the pulley *z* attached to the shaft *o*, bevel gears *g*, *r* or their equivalents, and the cutting shaft *p*; 4th. In combination with the rotary cutting disk *W*, in the adjustable foot plate *l*, *5*, adjusted by means of the set screw *7* and slot hole *6*, or their equivalents, and 5th. In combination with the jointed arms *l*, and sleeve *S*, in the stationary standard *a* provided with the circular hub *c*, around which the moveable arms *l*, *s*, are made to swing.

No. 1700. WILLIAM A. KIRBY, Auburn, N. Y., U. S., 23rd October, 1872, for 5 years: "A Harvesting Machine." (Une Moissonneuse.)

For cutting, gathering and delivering grain in gavels upon the ground.

Claim.—1st. The combination of the block R and washer E₁, for the purpose of supporting and adjusting the driver's seat upon the point of the axle of the main driving wheel; 2nd. The combination of the lever seat Q, with a raising, lowering and holding lever T, rod P₁₁, and outside supporting wheel Y, whereby the driver in his seat, may simultaneously, and by one and the same operation, raise, lower or hold, the cutting apparatus, grain tube, rake, and beaters, and their several appliances; 3rd. The combination of the moveable and immovable gears L, K, and the irregular teeth or cogs C, O₁, on said gears, for moving the rake horizontally across the platform; 4th. The combination of the rake moved by the two gears K, L, and in an irregular path or circuit, and the spring latch I for locking said rake to its shoe, and for unlatching it when the rake is to rise to cross the platform without clearing it; 5th. The combination of the pivot, and latched or unlatched rake M, with the pivoted cam-way O, whereby said cam-way, when thrown up, shall first unlatch the rake, and then admit of its being again latched; 6th. The combination of the moveable and immovable gears K, L, the foot-lever P, pivoted cam-way O, link m and trigger or dog K, for raising and holding up the cam-way when the rake is not to clear the platform; 7th. The combination of the gears K, L and the trigger or dog K, for catching and holding up the foot-lever and cam-way projection G, on the gear wheel for tripping said trigger and allowing said lever and cam-way to drop, and thus set the rake for sweeping the platform on its next round; and 8th. The combination of a series of beaters for drawing in the grain to the cutters and a rake for delivering the cut grain in a gavel upon the ground, when said beater and rake revolve around a common shaft f, the former in a circular and the latter in an irregular path.

No. 1701. SIMON WILKS & JOHN E. DOW, Boston, Mass., U. S., 23rd October, 1872, for 5 years: "A Reversible Hat." (Un chapeau reversible.)

The addition of a number of half-brims and crowns renders the hat multiple.

Claim.—The improved reversible hat made by combining one or more additional half-brims and crowns with the body of the hat.

No. 1702. VICTOR DUGAS, Quebec, 22nd October, 1872, for 5 years: "Improvements on Washing Machines." (Perfectionnements aux machines à laver.)

Securing better means of attaching and adjusting the machine to any ordinary sized tub

Claim.—The combination in any washing machine of the board a, with points f, slide b, slotted at b', and with points f, guide d, and set screw e, all arranged and working in combination with any tub.

No. 1703. JONATHAN R. RYERSON, St. Albans, Me., U. S., 22nd October, 1872, for 5 years: "A Metallic Boot and Shoe Heel." (Un talon de chaussure métallique.)

Claim.—1st. The heel a, formed with the bottom b, and flanges c, d, in one piece; 2nd. The projection e, on the inside of the heel, at the back in combination with a heel adapted to be driven to place; 3rd. A detachable heel adapted to be driven to place and secured by means of the flange d, at the top and a screw and nails passing through holes in the bottom plate near the front into the sole; and 4th. The heel a, b, c, cast with the flange d, and projection e, and adapted to be secured by means of a screw and nails.

No. 1704. CHARLES P. HOLMES, New York, U. S., 22nd October, 1872, for 5 years: "A Churn." (Une Baratte.)

Claim.—1st. The dashers B, when constructed of three concave angular sides and arranged spirally on the shaft A, and angularly; 2nd. The exterior application of the revolving fan, arranged at the side of the cream chambers; 3rd. In the employment of a shield K, applied to the internal mouth of the fan aperture; 4th. Constructing the cream chamber formed of three octagonal sides, and united by a tongue and groove connection with each other, and with the vertical side walls as set forth.

No. 1705. WILLIAM S. MEAD, New York, U. S., 22nd October, 1872, for 5 years: "A Hydrocarbon Vapor Lamp." (Une lampe Modérateur.)

Claim.—1st. Constructing the receptacle or bellows C, to receive the fluid of a series of flat, uncorrugated metal rings soldered together at the inner and outer edges; 2nd. The lever D, for expanding the bellows to receive the supply of fluid; 3rd. The disc B, provided with slots notched to receive the lever D, when the bellows are being filled; 4th. The employment of a spiral spring G, below the bellows to raise the bottom of the fluid consumer; 5th. The stem E, attached to the top of the bellows and connecting with the upright shaft of the lamp, for suspending the bellows in the outer shell; 6th. Providing the plug J, with an eccentric pin J, for raising and lowering the wick rod S, by engagement with the slot therein; and 7th. Connecting the chimney O, with the central aperture of the generator L, by a screw P, in the manner set forth.

No. 1706. HIRAM J. WAPPLES, Rockford, Ill., U. S., 22nd October, 1872, for 5 years: "A Machine for polishing knives and paring apples." (Machine à polir les couteaux et peler les pommes.)

Claim.—1st. The combination of the polishing disk D, D, and spiral spring E, mounted upon the same shaft, one of said disks being rigidly connected with the shaft, and the other keyed to the shaft so as to revolve with it but allowed to slide on the shaft; 2nd. The combination of the grindstone G, polishing disks D, spiral spring E, gear wheel C₁, mounted upon one shaft, and in combination with the uprights A', A₂; 3rd. The combination with the grinder and polisher of a removeable fork or apple parer, and 4th. The combination of the frame A, clamp A, gear wheels C, C₁, disks D, D₁, spiral spring E, grind stone G, and fork H.

No. 1707. PHILO LULL, Norwich, N. Y., U. S., 22nd October, 1872, for 5 years: "An improved pin for tanners rinsing wheels." (Une cheville d'appareil purgeur de tannerie.)

Claim.—The combination of stone or earthenware plates b, with the wooden pins A, of a tanner's wheel.

No. 1708. FRANCIS B. SCOTT, Lancaster, N. Y., U. S., 22nd October, 1872, for 5 years: "A Curtain fixture." (Un rouleau de rideaux.)

Applies more particularly to heavy shades and consists in the means employed for checking the momentum and supporting the shade—also of a cord pulley of peculiar construction.

Claim.—1st. The combination with a curtain roller and supporting bracket of the gravity pawl e, and stop d, when arranged so that the pawl will be actuated by centrifugal force in engaging with the stop and be released by gravity and caused to pass by the stop without engaging therewith when the centrifugal force is reduced; 2nd. The combination with the curtain roller A, and end plate K, provided with central openings K₁, of the journal plate L, L' cast with the cord pulley M, M', having notches G, and axial spur N.

No. 1709. THOS. H. DODGE, Worcester, Mass., U. S., 22nd October, 1872, for 15 years: "Improvements on Boots and Shoes." (Perfectionnements dans les Chaussures.)

Claim.—1st. The means for fastening together the soles and uppers of boots and shoes, consisting of metal pegs or rivets cut from ribbed or burred wire with or without a waxed or other adhesive coating; 2nd. The combination with the soles and upper of a boot or shoe of attaching or fastening metal pegs or rivets cut from ribbed or burred wire; 3rd. The combination with the peculiarly constructed metal pegs or rivets of a waxed or other adhesive coating; and 4th. The combination with the sole and upper of a boot or shoe of a fastening metal peg, or rivet cut from a wire having a fine rough burr or rib upon its entire surface.

No. 1710. HUGH YOUNG, Stamford, Ct., U. S. & JAS. L. YOUNG, New York, U. S., 22nd October, 1872, for 5 years: "A Stone-Cutting Machine." (Machine à tailler la pierre.)

Claim.—1st. The frame of a diamond-tool Stone-Cutting Machine, consisting of the horizontal or inclined part P, P₁, P₂, upon which is mounted the diamond-tool or tools, and the mechanism imparting motion thereto, of the vertical slide pieces S, S, S, between which the platform for receiving the stone, to be cut is guided in its vertical movement and of the supports W, W, W, W, between which the stone to be cut may be passed entirely under the machine; 2nd. The combination of the frame P, P₁, P₂, arbor A, pillow blocks a, wheels M, M, and pitman C, C, with the saw sash frame F, F₁, F₂, and diamond armed blade or blades B; 3rd. The combination of the arbor A, came C₁, cam-yoke C₂, rods r, levers t, cam levers t, boxes G₁, and slides G, or substantially the same, with the saw sash frame f, f₁, f₂, and diamond armed blade or blades B; 4th. The variable feed motion mechanism consisting of the arrangement of the platform T, screws N, wheels D, levers d, dogs d₁, bars d₂, and rods e, connected to the adjustable wrist j, the graduated sector, levers J, arbor H, lever E, eccentric yoke E₁, eccentric E, and arbor A, when used in combination with the diamond armed blade or blades B, and frame or sash F, F₁, F₂.

No. 1711. DAVID MCC. SMITH, Orange, N. J., U. S., 22nd October, 1872, for 5 years: "Improvement on Sewing Machines." (Perfectionnements des machines à coudre.)

A feeding device with two different forms of movement. One giving the fabric progressive motion in the ordinary longitudinal direction, the other imparting a lateral movement to either side, thereby providing means for producing ornamental sewing for boots, shoes, &c.

Claim.—1st. The feed bar f, with the roughened surface s, connected thereto by the bar or lever 18, in combination with the rocking lever a, slide r, and fingers t, t'; 2nd. The sliding bar n, and pawl g, in combination with the revolving cams 15, 16, adjusting screw v, and fingers t, t', for moving the rocking lever S, and lateral slide r, periodically; 3rd. The cams 15, 16, and 4, revolving progressively during a defined number of stitches by the sewing mechanism in combination with a feed bar or surface capable of longitudinal

and lateral motion, and mechanism to lock out of action the longitudinal feed and bring into action the lateral feeding movement; 4th. The roughened feeding plate 8, mounted upon the slide *r*, in a notch, in the feed bar *f*, so as to slide laterally and to which feed bar the ordinary feed movement is communicated, in combination with mechanism acting, periodically to give a lateral movement to the feeding surface 8; 5th. In the double acting lever *s*, and finger or fingers *t*, *v*, in combination with the feeding surface 8, and actuating stop *u*; 6th. The cam 15 revolved progressively in combination with the finger *t*, or *v*, double acting lever *s*, and feed plate 8; 7th. The revolving cam 15, 16, in combination with the feed bar *f*, lever 18 and its fingers *t*, *v*, 8th. The lever 18 attached to and swinging upon the feed bar *f*, to which latter a reciprocating and rising and falling motion is given, in combination with the cam on projections *u*, 16, that act to swing the lever 18, laterally at the latter portion of the reciprocation of the bar *f*; 9th. The cam 15, connected with the feed wheel *a*, in combination with the cylinder *b*, and the respective actuating mechanisms for revolving the cylinder *b*, and for turning the feed wheel; and 10th. The locking lever *m*, in combination with the feeding wheel *a*, the cam 15 and the mechanism for giving a lateral movement periodically to the feed-wheel, while its rotation is suspended.

No 1712. GEORGE DAVEY, London, Eng., 22nd. October, 1872, for 5 years: "Art of manufacturing artificial or Marezzo Marble." (Art de faire du marbre artificiel ou Marezzo.)

Claim.—1st. The novel art of manufacturing artificial Marble by arranging on a plate or plates of glass portions of cement mixed with color, in imitation of the forms and colours of the natural marble, in combination with a superincumbent layer of cement and backing; 2nd. The manufacture of artificial marble, the novel use of silk or other fibres impregnated with colouring matter, and on a plate or plates of glass, in combination with the cement forming the artificial Marble; 3rd. The novel use with the plate or plates of glass hereinafter described of moulds of suitable forms, in combination with the colored cement and backing, with or without the fibres; 4th. The novel use of moulds of various parts, in combination with coloured cement, with or without fibres and backing, the colours or fibres or both arranged so as to be continuous when the moulds are put together; 5th. The novel art of imitating any substance, ornament, or design formed with bevelled sloped indent or roughened edges, in the artificial Marble; 6th. The novel art of embedding in brick, cement, or imitation marble white in a plastic condition suitable ornaments or designs of heat-resisting substances or of attaching to either of the above substances, a veneer of artificial marble.

No. 1713. WALTER H. LAURIE, Montreal, Que., 22nd October, 1872, for 5 years: "A Bolt Cutting Machine." (Une machine à fileter les boulons.)

Improvement on that class of bolt cutting machines working automatically, as regards the cut of the dies upon the bolt, so that when the bolts have been cut a given distance down, the dies will remove back from the bolt.

Claim.—1st. The hollow spindle *e*, spindle *c*, and collar *t*, in combination with levers *R*, and *Q*, collar *L*, with groove *p*, and rollers *n*, head *F*, die levers *G*, and spring *o*; 2nd. The lever *p*, with parallel surfaces *T*, incline *H*, and spring *o*, in combination with collar *L*, and rollers *n*; and 3rd. The spindle *c*, collar *L*, head *F*, levers *R*, and *Q*, in combination with rod *Z*, collar *v*, lever *x*, slide *y*, projection *a*, or their equivalents.

No. 1714. HORACE H. BIGELOW, Worcester, Mass., U. S., 22nd October, 1872, for 15 years: "A Boot and Shoe heel compressing Machine." (Machine à presser les talons de chaussures.)

Improvement in forming and pressing the heels, and in the manner of forming theawl holes and partially inserting the nails.

Claim.—1st. An improved blank heel, composed of a series of hollow lifts *B*, and central filling *E*, formed under pressure from all sides; 2nd. A compressed boot or shoe heel having the rand *F*, united and compressed with the bottom lift *a*, at the time the body of the heel is pressed and formed; 3rd. The hollow lifting *B*, formed by cutting out the centre of the lifting so as to leave the exterior portion of the lifting in the shape of a continuous or endless strip; 4th. The combination of the follower *L* with the die *H*; 5th. The combination with the forming die of the head plate *D*; 6th. The combination with the head plate *D* and sleeve *c*, of the discharging pin *f*; 7th. The combination with the sleeve *c* and discharging pin *f*, of the discharging punch *n*, provided with a spring centre *g*; 8th. The combination with the discharging pin *f*, of the spring centre *g*; 9th. The combination, in a machine for forming pressed heels for boots and shoes, of the following elements, viz. A die for pressing the heel into proper form provided with holes for the passage of the heel perforating awls, nails, and nail drivers a series of perforating awls and a series of nail drivers; 10th. The combination with die *K*, and follower block *L*, of the elevating disc *O*; 11th. The combination with disc *O*, and bearing *U*, of the slide *d* and pins *S*; 12th. The combination with the disc *O*, and receiving table *Z*, of the slide *Z*, and fork *Z*; 13th. The combination with the disc *O*, and follower block *L*, of the screw *Y*, and fork *Z*; 14th. The combination with the fork *Z*, of the stop pin or stud *S*; 15th. The combination with the bed or table *G*, and cylinder *o*, of a forming die *K*, and follower block *L*; 16th. The flanged head *K*, on the pintle bolt *M*; 17th. The combination with the cylinder *J*, of the stop dog *I*, and the mechanism for rotating the cylinder; 18th. The combination with the table *G*, and cylindrical receptacle *Z*, of the bed piece *Z*, spring *Z*, plate *Z*, and adjusting screw *Z*; 19th. The combination of the stop dog *I*, the ball crank lever *Y*, the guard lever *Z*, and the spur *I*; 20th. The combination

with the ratchet wheel *I*, arm *V*, and swinging stud *X*, of the dog *V*, trip lever *V*, spring *W*, finger *x*, and guard pin *t*; 21st. The nail holding device, composed of the parts 16, 17, 18, 19 and 20; 22nd. The combination of the arms 20, of the nail holder with the studs *l*, on the forming disc; and 23rd. A mechanism for forming compressed heels for boots and shoes, the mechanism of which is constructed and arranged so that the heel is compressed on all sides, and held under continuous pressure during the operation of perforating the heel and driving the nails.

No. 1715. AUGUSTUS F. MARSHALL, Black River, N. Y., U. S., 22nd October, 1872, for 5 years: "A wood bending machine." (Machine à plier le bois.)

Improvement in machines for bending wood for chairs which consists in combining with the "former" or forming block of a metal spring board and attachment, the band confining the ends of the bar and bending the latter around the "former."

Claim.—The former *a*, screw *F*, spring *Q*, adjusting blocks *S*, screws *F*, blocks *P*, push bars *I*, *J*, *L*, and *K*, the latter provided with rollers *M*, the cross-bar *E*, framesides *C*, *C*, and grooved guides *N*, and *D*.

No. 1716. EDWIN L. BUSHNELL, Poughkeepsie, N. Y., U. S., 25th October, 1872, for 5 years: "Improvements in spring mattresses." (Perfectionnements aux matelas à ressorts.)

The springs are connected by a band of webbing passed through them and held by a clasp of metal around the outside—the cross straps being secured to the face of the mattress by loops which connect the springs together.

Claim.—1st. The combination with the spring *a*, of the straps or bands *B*, and the metal clasps *C*; 2nd. The straps *D*, arranged across the ends of the springs and held by the loops *A*, which unite the springs.

No. 1717. JAMES THORNTON, Hamilton, Ont., 25th October, 1872, for 5 years: "An improved Cabinet Organ." (Un orgue de salon perfectionné.)

Claim.—A chamber fitted in the case of the organ over the bellows chamber (behind the action) formed of thin wood or other suitable material, with or without back swell, and so that the sound passing from the reeds into it causes vibration and gives tone and power to the instrument, the chamber being removable when required to tune the instrument, also the combination and arrangement of the several parts operating as set forth.

No. 1718. JOHN K. COLLETT, Canton, New Cardiff, South Wales, 25th October, 1872, for 5 years: "Process of packing and preserving butter and an apparatus therefor." (Méthode de conservation du beurre.)

Claim.—The process of packing and preserving butter, into vessels or boxes *b*, *c*, *d*, *e*, and *f*, by immersing them into brine contained in a c. sk *A*.

No. 1719. ALEX. HOWIE, Hamilton, Ont., 25th October, 1872, for 5 years: "Improvements in Sewing Machines." (Perfectionnements aux Machines à coudre.)

An improved tuck-marker.

Claim.—1st. The arrangement of the flat spring *B*, rivoted to the underside of the body *A*, by the rivets *D*; 2nd. The arrangement of the slot *E*, in the front part of the spring *B*, and 3rd. The arrangement of the rubber band *F*, covering the end of the spring *B*.

No. 1720. FREDERICK O. TUCKER, Chelsea, Mass., U. S., 25th October, 1872, for 5 years: "A loom shuttle." (Une navette de tisserand.)

A device within the body of the shuttle and at one side thereof arranged to be set free by an imperfect warp shed or other extraneous cause, and so adapted, when set free as to swing towards the bobbin spindle and in the line of travel of the weft thread therefrom, so that in the further feed of said thread a sufficient strain will be brought to cause its severing.

Claim.—1st. A weft obstructing device for loom shuttles; 2nd. The guard or arm *a*, in combination with the pawl *p*, trigger *l*, spring-wire *c*, relatively constructed and arranged within a shuttle body at one side of same for operation of the guard *a*; 3rd. The trigger *l*, or its equivalent formed to allow the weft thread to pass off or escape from it; and 4th. The cavities *o*, in combination with trigger *l*, or its equivalent.

No. 1721. ISAAC L. STRONG & JNO. GRAY, both of Patterson, Ont., 25 October, 1872, for 5 years: "An improved Horse-power." (Une machine pouvoir de cheval.)

Relates to a peculiar construction of the frame for carrying and the boxes for covering the guides, rod and cross-head through which the reciprocating motion is conveyed to the drag saw, and to the connection of an attachment when rotary motion is desired for the purpose of driving threshing machines straw cutters, &c.

Claim.—1st. The combination of the centre piece B, single guide D cross-head F and ratchet P, protected by the three covers, F, G and H; 2nd. The combination of the horizontal shaft L, pinions J and M, vertical shaft L.

No. 1722. WILLIAM W. BALLARD, Elmira, N. Y., U. S., 25th October, 1872, for 5 years. "A wooden pavement." (Un pavage en bois.)

Claim.—1st. The method of forming a wedge shaped lock-block from single timber; 2nd. The wedge shaped lock-block *a*, formed with projecting and depressed angles B and C, and with base obliquely cut; 3rd. The wedge shaped lock-block *a*, formed with curved interlocking sides and with base obliquely cut; 4th. The wedge shaped lock-block *a*, with projecting and recessed angles *d* and *e* and base obliquely cut; 5th. The wedge shaped lock-block *a*, either with curved or angular interlocking sides and oblique base, and with bevelled ends; 6th. The wedge shaped blocks *a*, interlocking at their bases cut from single timber, and 7th. A wood pavement composed of blocks F, whose bases are cut obliquely to the sides and so cut otherwise that they shall rest upon and be supported each by the others, with intermediate key filling, and having no part of their bases out away.

No. 1723. HUGH SMITH, West Gray, Me., U. S., 25th October 1872, for 10 years: "Improvements on Sleighs." (Perfectionnements aux traîneaux.)

Claim.—1st. The metallic stanchions or posts E, constructed of a bracket form and with foot pieces K; 2nd. The car pieces B, to posts E; 3rd. The brace rods, F, F, arranged between the body C, and the runners A, of the sleigh in combination with the stanchions E; 4th. The runner fronts B, made of metal with arm D, both grooved to receive dasher board and constructed at U and S for attachment respectively to the runner and sleigh-body; 5th. The bar R; 6th. The brackets W, of the runner fronts each constructed with the recess P, and notch r, in combination with the shaft extension T, formed with the disks *a*, and lugs *o*; 7th. The metallic extensions T, having side arms U; and 8th. The hinge for thills to sleighs constructed of circular disk *n*, and projection or lug *o*, in combination with the recess P, and notch r, of the brackets W.

No. 1724 WILLIAM BARNFORD, Ancaster, Ont., 25th October, 1872, for 5 years: "The manufacture of Stockings." (Fabrication des bas.)

Claim.—1st. The arrangement of the round heel for socks and stockings manufactured by machinery,—also in the arrangement of the chain stitch *e*, covering the joining of the heel, to the foot in fig. 6.

No. 1725. JOHN L. KENDALL, Foxborough, Mass., U. S., 25th October, 1872, for 15 years: "A carpet lining and mattress filling of paper pulp and sponge." (Composition de pulpe et d'éponge pour doubler les tapis et bourrer les matelas.)

Claim.—Mixing paper pulp and sponge, &c., and forming the mixture into sheets or otherwise.

No. 1726. THOS. A. JEBB, Buffalo, N. Y., U. S., 25th October, 1872, for 15 years: "Improvements in Fare tickets and Books." (Maniere de contrôler les billets de passage sur les chemins de fer et steamers.)

Claim.—1st. A book of fare tickets A, B, provided with stubs D, D, numbered consecutively to correspond with the consecutive numbers of the tickets; 2nd. A book of fare tickets provided with stubs D, D, which have printed thereon a list of the various amounts of fares charged, while the tickets are printed with a duplicate list of fares and a list of stations; 3rd. A book of folded duplicate check tickets A, B, in which the duplicate leaves of each ticket are secured together at the upper ends of the binding, while one of the adjacent sides is secured by the fold of the ticket; 4th. A book of fare tickets A, provided with stubs D, D, and with the short stub cover F, and clamp *g*; 5th. A book of folded duplicate tickets bound at the upper end thereof and having the line *e*, which separates the passenger portion from its stub D, perforated, while the corresponding line of the conductor's portion remains unperforated; 6th. A railroad check ticket consisting of two thicknesses or layers of paper or other suitable material lightly secured together so as to be readily separated and punched in duplicate on two sides thereof in such manner that in punching the tickets both of the duplicate printed side will be perforated at the same relative points, so that when the tickets are afterwards separated, the duplicate parts will be punched in a corresponding manner; 7th. A railroad ticket with the names of the stations printed in a column with words or letters representing the two directions the train travels, arranged over the initial letters and final letters of the first station, so that the punching of the names of stations under the initial of final letters will indicate the direction of the train and thereby enable a single form of ticket to be used when running in either direction.

No. 1727 JOHN R. HARRINGTON, Brooklyn, N. Y., U. S., 25th October, 1872, for 5 years: "A Machine for making Carpet lining, Stair

pads, &c." (Machine à faire des doublures de Tapis et Coussinets d'escaliers.)

Consists in the combination of revolving screens, carding cylinders and feeding rollers forming cotton into a smooth lap of uniform thickness and conveying it to sheets of paper in a finished state, also in the combination of revolving brushes for applying mucilage to the paper, together with a drying chamber, pressor, and crimping rolls for receiving and delivering the lining in folds.

Claim.—1st. The combination of the roller B, feeding rollers D, D, D, revolving screens C, C, C, carding cylinder E, E, E, brush G, pressor rollers I, I, heated cylinder L, L; 2nd. The crimping rollers M, M; 3rd. The drying chamber J; 4th. In combination with the revolving screens C, C, C, the spiral brushes *f, f, f*, and endless apron P; 5th. In combination with the crimping rollers M, M, the clamp N, for folding the lining.

No. 1728. BICKFORD N. HEMENWAY, Rockland, Me., U. S., 28th October, 1872, for 5 years: "Adjustable seats." (Des sieges mobiles.)

Claim.—The concave and convex peg or bolt D, in combination with the cavities in the shaft B, and the hollow standard C, so as to produce an adjustable seat, chair or stool.

No. 1729. CHARLES C. POST, Burlington, Vt., U. S., 28th October, 1872, for 10 years: "Improved sap-spout and pail." (Un seau et un siphon pour la sève.)

Claim.—1st. A sap-spout having one or more ribs A, or projections formed on its inner end. The slots or spaces between the bearings A, A, screw B, and flange E, to allow the flow of sap from the outer pores of timber. The holes C or their equivalent to allow the sap to descend and escape through the hole D, into the spout; 2nd. The bevel flange and water shield E; 3rd. Providing the spout with a series of notches F, or serrated plate H, or its equivalent, for suspending the pail; 4th. The construction with the spout, of rests, bearings and projections I, or their equivalent to secure the pail hanger in the desired position; 5th. The combination of the hinged cover K, with the hanger J, and spout; 6th. Constructing the stem end of the spout with a spiral thread B, to screw into the tree; and 7th. The pail hanger J, in combination with the spout.

No. 1730 BICKFORD H. HEMENWAY, Rockland, Me., U. S., 28th October, 1872, for 5 years: "School Desks." (Des pupitres d'Ecole)

Mechanical contrivance for the raising or lowering of any desk or table and rendering it adjustable at any desired height. *Claim.*—An adjustable desk, or table, the combination of the end F, supporter E, grooves or slots I, J, and screw bolts G, H.

No. 1731. JAMES K. GRIFFIN, Waterdown, Ont., 28th October, 1872, for 5 years: "The Manufacture of material for roofs, floors, pipes, &c." (Composition pour la fabrication des toits, planchers, tuyaux, etc.)

Improvement in the material and machinery for producing disintegrated fibre and for manufacturing roofing, flooring, pipes and other articles therefrom.

Claim.—1st. A centrifugal condenser L, provided with tapering ends or necks for the purpose of receiving and intermixing wood or other fibre; 2nd. A centrifugal condenser L, for receiving and intermixing wood or other fibre, in combination with holding, drawing and pressing rollers *e, c*; 3rd. A centrifugal condenser L, in combination with one or more band-saws D, and a conductor K; 4th. One or more band-saws arranged as described, in combination with the revolving table G, and centrifugal condenser L; 5th. Rope produced from wood fibre as an article of manufacture; 6th. The screw core N, made hollow for the passage of blasts or currents of cold air or water to regulate the heat produced in the manufacture of wood or other fibrous pipe; 7th. The loose thimble arranged upon the screw core N; 8th. A hollow conical shaped pressing and forming cylinder O, having internal spiral corrugations or ribs; 9th. The combination of the screw core N, and conical shaped pressing and forming cylinder O; 10th. A stationary or revolving *f, i, f, c* saw R, for dividing pipe produced from wood or other fibrous material when operating in connection with a core N, and cylinder; 11th. In the funnel Y and plunger Z; 12th. The rubber packing or its equivalent arranged upon the sides of the saws; 13th. The gear C for operating the screw core in combination with the gear C for operating the pressing and forming cylinder; 14th. One or more band-saws mounted upon pulleys C, C, arranged for cutting fibre lengthwise from logs; and 15th. The combination of woody fibre with pulverized artificial or natural stone, mineral or cement with any adhesive compound.

No. 1732. ALFRED WEED, Boston, Mass., U. S., 28th October, 1872, for 5 years. "A File cutting Machine" (Machine à tailler les limes.)

Claim.—In the combination of a mechanism to automatically move the cutter over and behind the tooth just previously cut, and to then carry it forward to and against the spur of the said tooth, and the utilization of the spur of each successively-made tooth, as means of gauging the proper position of the cutter for the next fall of the hammer, and as an instrument in connection with the cutter for securing a proper succession of the cuts upon and along the surface of the blank substantially as describe d.

No. 1733. JOHN LEVEY, Toronto, Ont., 28th October, 1872 for 5 years: "A Steam Printing Press." (Une presse d'imprimerie à vapeur.)

Claim.—1st The application of the steam cylinder and its connections, when the same are used to transmit power to printing or lithographic presses, said cylinder and connections forming part of the same; 2nd. The application of steam, hot air or gases directly applied to the machinery of printing or lithographic presses to set the same in motion; 3rd. The use of steam or gases, as cushions or buffers in printing or lithographic presses to overcome the momentum on the vibratory and reciprocating parts of the machinery.

No. 1734. FRANCOIS X. VANDANDAIGUE DIT (DABOIS, St. Denis (St. Hyacinthe) Que., 2nd November, 1872, for 5 years: "A Washing machine." (Une machine à laver.)

Consists in a single bottom of corrugated zinc and the manner in which by iron rods it is joined to the tub.

Claim.—1ro. Dans la combinaison avec une Blanchisseuse mécanique d'un seul fond B, on zinc cannelé, inséré dans les côtés latéraux de la cuve; 2no. Dans la combinaison avec le fond B, et les côtés A, de la cuve de broches on for C, C, servant à relâcher ou resserrer les côtés et le fond de la cuve.

No. 1735. WILLIAM A. IVES, New Haven, Conn., U. S., 2nd November, 1872, for 5 years: "An Auger Heading machine." (Machine à fileter les meches de carrières.)

Claim.—1st. In the process of forming the cutting end of boring instruments, in the arrangement of two dies, the one within the other, the inner or central die operating to form the point, and floor lip or lips, the outer passing over the other or inner die to turn up and size the lip or lips, combined with a pair of holding dies, actuated by the foot to crush the blank; 2nd. In combination with the mandrel F, spindle G, dies c and d, and the holding dies, the canus a and b, to operate the said dies; 3rd. The dies for forming the spur lips of augers consisting of the dies A, and moveable crimp B, 4th. In the dies figs. 15 and 16 for forming the blank preparatory to introduction to the dies.

No. 1736. WILLIAM G. WARDEN, Philadelphia, Penn., U. S., 2nd November, 1872, for 5 years: "Construction of vessels fit to carry inflammable matter." (Construction de vaisseaux propres au transport des matières inflammables.)

Claim.—1st. The construction and arrangement of vessels, in which the engine and boilers are enclosed by a double bulkhead or bulkheads to which steam is admitted, a space being left between the sheathing and inner lining communicating with a steam pipe, the said vessel having a double walled tunnel, in case the shaft passes through any of the cargo spaces extending from the rear bulkhead to the stern. 2nd. The use in steamships for carrying petroleum of double walled partitions or bulkheads forming the wall or walls of gas-tight compartments for holding such cargo, such double partitions being furnished with suitable steam connections with either the steam boiler or engine, or both for the purpose of injecting steam into the cavity of the bulkheads or partitions, in order to test their impenetrability to gas or vapor, and to neutralize the explosive or inflammable character of the petroleum vapor in case any leak should arise. 3rd. The use in combination with otherwise gas-tight cargo spaces or compartments for holding petroleum, of gas-tight hatches, and of ventilating apparatus for carrying off the petroleum vapor. 4th. The combination in steamships or vessels for carrying petroleum of compartments or cargo-spaces gas-tight except at their apertures for ventilation (so made by means of gas-tight bulkheads, deck or covering and bottom, and gas-tight hatches) with ventilating apparatus so constructed with openings for the admission of fresh air and a ventilating pipe or pipes furnished with a steam nozzle for exhausting the vapors so as to prevent the accumulation of the petroleum vapors, and 5th. Constructing steamships or vessels for carrying petroleum in barrels or other packages with a gas-tight cargo space or spaces, the outer wall or walls of which (other than the ship's sides) separating such petroleum cargo space or spaces from other cargo spaces or from other parts of the vessel shall be double metallic walls having a space between them with or without steam connections, such space opening into or directly communicating with the bilge-water space at the bottom of the vessel.

No. 1737. GRAFTON T. NUTTER, Jersey City, N. J., U. S., 2nd November, 1872, for 10 years: "A Railway Wagon Lifting machine." (Machine à élever les voitures de chemin de fer.)

For shifting the trucks from a narrow to a wider gauge or "vice versa."

Claim.—In the combination with a rail road track of a lifting machine composed of horizontal shafts M and R, bored cog-wheels H, L, P, P, an 10, pinion M, pinions T, F, T, f, horizontal shafts G, G, G, G, pinions C, C, C, C, prime and cog-wheels C' C' C', giving motion to four upright screws B, B, B, B, operating on four nuts E, E, E, E, two horizontal beams D, D, and two cross beams D', D' prime, also horizontal shafts V, pulley M, endless chain W.

No. 1738. GEORGE B. CODMAN, Montreal, Que., 2nd November, 1872, for 5 years: "A Tanning process." (Procédé de tannage.)

Claim.—The process of tanning hides for boting and all other

kinds of leather by using solutions or liquors composed of gambor or terra japonica, valonia, glauber salt or sulphate of soda, sal soda or other alkali, sulphuric acid and myrabolans in the proportions described to be used in a series of twelve vats, the whole operation to be gone through as described.

No. 1739. EDMUND N. LACROIX, Minneapolis, Ma., U. S., & WILLIAM T. ARCHIBALD, Moulinette, Ont., 7th November, 1872, for 5 years: "Improvements on Flour Bolts." (Perfectionnements aux bluteaux.)

Mechanical arrangement whereby the flour as well as the fine bran and other fibrous matter is separated from the middlings which are then prepared for re-grinding and purification.

Claim.—1st. The adjustable eccentric c, c, in combination with the suspended and vibrating bolt-frame B, and bolt-cloth b; 2nd. The combination of the reciprocating bolt cloth b, endless chain F, caps, brackets I, when constructed to revolve on their own axis while travelling with the chain and in contact with the bolt-cloth and 3rd. The middlings separator composed of the feeding device F, reciprocating bolt cloth b, travelling and revolving brushes I, conveyor K, partitions C, and exhaust fan D.

No. 1740. JOHN PURDIE Administrator of the Estate of H. L. Purdie, Buffalo, N. Y., U. S., 7th November, 1872, for 15 years: "Locking Washers for nuts." (Rondelles d'érouus.)

Claim.—1st. In the combination with a washer-plate A, of one or more pivoted dogs B, so arranged as to enter a recess a, in said washer-plate, when the nut D is turned home while the dog or dogs B, are swung out by the side of the nut after the latter is tightened and held in this position by gravity, thereby locking the nut against backward rotation; 2nd. In the combination with the pivoted dog B, and slotted washer H, of the spiral spring K, and locking notch L, for securing the dog B in its projecting and engaged position; and 3rd. In a washer F, provided with a pivoted dog B, having the locking parts.

No. 1741. JOHN JAMES GRANT, SOLON L. WILEY & CHAS. P. RUSSELL, all of Greenfield, Mass., U. S., 7th November, 1872, for 5 years: "Screw Cutter and Drill." (Machine à percer et fileter les érouus.)

Relates to an improvement in the starting lever. In the means for securing and adjusting the revolving die-holding disc to the head-stock. In the adjustment of the feed. In the construction and arrangement of the yoke bearing the shaft and in an adjustable nut chuck capable of holding square and hexagon nuts.

Claim.—1st. In the combination of the die-holding disc, provided with slots for the reception of the locking pin the head stock provided with a projection to which the disc is pivoted, and the locking pin; 2nd. In combination with the head-stock, the starting lever provided with a pawl; 3rd. In the construction of the reversible chuck-plate J, the socket in which the said chuck-plate is fitted, and the vertical spring bolt; 4th. The disc D; 5th. In the combination of the shaft H, provided with two or more cams h, h, reciprocating bar W, adjustable casing w, having a slot m, spiral spring r, thumb-nut v, pawl w, and the ratchet wheel q; and 6th. In the combination of the yoke provided with sleeves bearing the shaft; the operating gear revolving upon a fixed journal secured to said yoke, the shaft and the work-holding chuck.

No. 1742. SAMUEL R. BOWIE, & HENRY LIBBEY, New Bedford, Mass., U. S., 11th November, 1872, for 5 years: "Glass Blower's Mould." (Moule de verrerie.)

Claim.—1st. The rotary mould for forming the outer surface of a blown glass article; 2nd. In the combination of a stationary axial bed or bottom former with the rotary mould or body-former; 3rd. A mould as made with a series of peripheral rollers; 4th. In combination with a rotating mould made in two sections or parts, B, B, mechanism for opening and closing the same; 5th. In combination with the stationary axial support or bottom-former, and the rotary mould or parts B, B, mechanism for rotating the latter; 6th. Giving each of the rollers c, a compound motion; and 7th. The new method of forming a glass article, viz. by moving or rotating the mould against the outer surface of the glass while the latter is being inflated or blown out by the glass blower.

No. 1743. CHARLES BARBER, Meaford, Ont., 11th November, 1872, for 5 years: "A Turbine Water Wheel." (Une turbine hydraulique.)

Consists in the combination and working of movable guides or gates with stationary gates in such manner that the alternate gates are pivoted vertically to the case and can be opened or closed to control a volume of water to the extent required.

Claim.—1st. In the combination, in a water-wheel, of movable guides or gates D, and stationary chutes C, the movable gates operating on pivot centres F; 2nd. In combination with the upper ring of case K, the arrangement of the ring A, provided with eccentric slots L, in which the controlling pins H, of movable gates fitted to friction blocks work said ring A, being held concentrically by arms J, and hub T, fitting over the neck of cover of wheel case and operated by pinion F, and rack M, or other suitable device.

No. 1744. JOHN KRUMMENAUER, New York, U. S., 11th November, 1872, for 15 years: "An animal trap." (Une ratière.)

The principle of this invention is that each animal when caught in passing from a dark into a light compartment in its efforts to escape re-sets the trap.

Claim.—1st. The combination of the vibrating yoke or lever F with a door or doors D, and with a spring retainer G; 2nd. The combination of the vibrating platform H, carrying the bait, its arm e, and the spring retainer G; and 3rd. The combination of the trap door h, its arm i, and the yoke or lever F.

No. 1745. CHARLES STORER, Montreal, Que., 11th November, 1872, for 5 years: "Metal Pavement." (Pavage en métal.)

So constructed as to allow of excavations being made without disturbing the pavement. Means are also adopted to render the pavement less liable to disarrangement from the settling of ground beneath it or from upheaval by frost in winter.

Claim.—1st. The plate a, in combination with scantlings a; 2nd. The plate b, and scantlings a, in combination with plate e; 3rd. The plates b, and e, with flanges i, and with or without flanges k; and 4th. The plates b, with beadwork d, in combination with cement on their surfaces.

No. 1746. JOHN SMITH, Brantford, Ont., 11th November, 1872, for 5 years: "Fire Grates and Stoves." (Grille de foyer et poele.)

Claim.—1st. Open or closed fire-grates, the curved or oval-shaped metal back B, and the arrangement and use of perforated fire-plates F, whereby a passage is formed at the ends and back of the grate or other of them to be supplied with cold air, from beneath the fire-basket; 2nd. Close stoves, the arrangement and use of perforated fire-plates F, and duct Y, for the introduction and distribution of heated air to the fire-box; 3rd. The combination and arrangement of the sheet smoke flues E and H, air heating sheet flues G and K, air heating chamber L, provided with inlet apertures O, P, Q, outlet passages N, B and M, J; and 4th. In combination with the arrangement of smoke flues E, H, air flues C, K, chamber L, and duct Y, the arched recess in chimney breast with plate S, provided with slides T, collar W, and connecting pipe R, plate X, and warm air ducts V, V, V.

No. 1747. TIMOTHY E. CHAMBERLAIN, Knowlton, Que., 11th November, 1872, for 5 years: "A manure cart." (Un distributeur de fumier.)

The manure is reduced to small particles before it leaves the cart and is spread in a thin even layer over the ground as the cart moves along.

Claim.—1st. The cart A, with spikes G, frame A', roller F, and spikes G, on spindle E, pinion wheel E, and spur-wheel D, in combination with wheel C; 2nd. In the combination of the cart A, with spikes G, and roller F, with spikes G; 3rd. The lever K, link I, and arm H, or their equivalents in combination with the spindle E; and 4th. The slide L, with arm L', pivoted lever M, and handle N, or their equivalents in combination with cart A.

No. 1748. CHAS. F. PIKE, Providence, R. I., U. S., 11th November, 1872, for 15 years: "A Spark Arrestor and Consumer." (Appareil pour détourner les étincelles et les rejeter dans le fourneau.)

The object of this invention is to arrest and convey back to the furnace or combustion chamber the sparks, cinders and gases which are ordinarily emitted from the smoke-stack of locomotive engine-boilers, or marine, or stationary boilers, and to utilize same.

Claim.—1st. The combination of the chimney provided with the smoke-arch C, artificial draught or blower N, engines O, O, pipes or flues P, P, and H, H, furnace or combustion chamber B, boiler A, of a locomotive; 2nd. The combination and arrangement of the chimney, provided with smoke-arch C, register G, artificial draught or blower N, engines O, O, pipes or flues P, P, and H, H, furnace or combustion chamber B, and boiler A; 3rd. The combination of the ash-pan W, with the pipes or flues P, P, and H, H, artificial draught or blower N, engines O, O, smoke-arch C, register valve G, chimney and the boiler A; 4th. The arrangement of the chimney provided with the smoke-arch C, register G, with the artificial draught or blower N, reservoir M, pipes or flues P, P, and H, H, furnace or combustion-chamber B, boiler A, auxiliary engines O, O, exhaust pipes H, and I, in a locomotive; 5th. The combination of the chimney having a smoke-box or arch C, the artificial draught, device or blower N, the pipes or flues P, P, and H, the furnace or combustion-chamber B, and the boiler A.

No. 1749. A. D. CAMPBELL, Ind., & J. MCKENZIE, Inverness, Que., Assignees of J. Peters, St James, Mo., U. S., 11th November, 1872, for 5 years: "A Tanning Process." (Procédés de tannage.)

The compound for tanning hides consists of wheat-bran, sulphuric acid and butter-milk. The ingredients forming the tanning solution are gambier, saltpetre and sulphuric acid, and the finishing mixture is composed of tanners oil, melted tallow and lye.

Claim.—1st. The compound for tanning hides; 2nd. The compound for tanning leather; 3rd. The compound for finishing leather of the materials and in the proportions described.

No. 1750. CHARLES F. PIKE, Providence, R. I., U. S., Assignee of George H. Griggs, White-stone, N. Y., U. S., 11th November, 1872, for 15 years: "Spark Arrestor and Consumer." (Appareil pour arrêter les étincelles et les rejeter dans le foyer.)

Claim.—1st. In the method of controlling, driving and finally utilizing as fuel, the unconsumed products of combustion which are driven from a smoke-pipe or smoke-arch by a forced blast, discharged therein, by combining a continuous return flue, connecting the smoke-stack with the fire chamber, with a compound blast-pipe and by arranging the mouth of the return flue, at the stack adjacent to and coincident with the exit aperture of the blast-pipe whereby a portion of the compound blast, composed generally of steam, air, gas, smoke and cinders may be discharged into, and be driven through the return flue, into the fire chamber by the force and presence of succeeding portions of the blast; 2nd. The combination of the compound blast-pipe with a spark or return flue, communicating with the fire chamber, provided with a bell-shaped mouth, which is located above, adjacent to, and coincident with the exit aperture of the blast-pipe; 3rd. The combination of the compound blast-pipe, the spark or return flue, provided with a bell-shaped mouth and a guiding plate located adjacent to, or within the mouth of the return flue and coincident with the exit aperture of the blast-pipe; 4th. The combination within a smoke-stack of the compound blast-pipe, the bell mouth of the spark flue, and the barrel netting connecting the two.

No. 1751. ARTHUR W. LAWTON, Rochester, N. Y., U. S., 11th November, 1872, for 15 years: "A Harness." (Un Harnais.)

Relates entirely to the draft portion of the harness which fits the horse's breast, and is intended to supersede the tugs, traces and straps, &c., in ordinary use.

Claim.—1st. The combination of the removable cross-bar B, draft yoke C, breast strap D, or its equivalent hames D', D; 2nd. The method of securing the cross-bar B, by the hook and eye a, b, at one end, and the sliding pin f, at the other, or their equivalent; 3rd. The combination with the pin f, and cross-bar B, of the cord r; 4th. The socket Q, and bearing r, uniting the cross-bar and draft yoke; 5th. The combination of the swinging hames D', D, with the cross-bar B; 6th. The attachment of the hames to the curved arms G, G, which are centrally jointed to the cross-bar; 7th. The combination with the hames D', D, and curved arms G, G, of the shoulders Y, Y; 8th. The combination with the hames D', D, of the adjusting brace rods w, and 9th. The combination of the swivelled end z, with the stationary part z', of the pole-tip.

No. 1752. NATHANIEL T. WORTHLEY, Brunswick, Me., U. S., 11th November, 1872, for 5 years: "A Mechanical Motor." (Un moteur mécanique.)

So constructed as to impart a vortical reciprocating and intermittent rotary motion to an upright shaft.

Claim.—1st. The combination of the rotary shaft H, wheel K, spring I, pitman G, and crank-shaft E; 2nd. The rod F, head block a, screw K', pitman G, and shaft E, in combination with the shaft H, provided with the toothed wheel K, and loose collar K; 3rd. The treadle M, hinged to s, b, and connected to the collar a', by the rod N, in combination with the shaft E, pitman G, and rod F.

No. 1753. NATHANIEL T. WORTHLEY, Brunswick, Me., U. S., 11th November, 1872, for 5 years: "A Washing Machine." (Machine à laver.)

Consists in the construction and arrangement of an oscillating frame, sustained by spiral springs, and carrying two or more small feed rollers used in connection with a large corrugated roller.

Claim.—The oscillating frame consisting of the rockers D, and connecting bar D', and carrying the rollers d, d, in combination with the grooved or corrugated roller C, and springs F.

No. 1754. OLIVER T. SPRINGER, Wellington Square, Ont., 11th November, 1872, for 5 years: "A Wind Power." (Un moteur à vent.)

A cam and levers working on the shaft and arms of the wind power so that the sail attached to the arms can be set full or slanted in any degree or laid off when stoppage of motion is required. This invention is also adapted to pumping water from wells or streams.

Claim.—The combination and arrangement of the several parts, namely: the cam c, working in the shaft A, worked by means of the clutch M, and segment N, and lever O, in connection with the levers D and F, for moving the arms that set the sails; also in the levers L, and the connections for turning the sails, together with the guides x, attached to the arms in which the sail arms work.

No. 1755. JOHN WELLBY, Kingsclear, N. B., 11th November, 1872, for 10 years: "A Railway Dust Preventor." (Un garde-poussière de chemin de fer.)

A slanting side screen or frame with adjustable roller and blind covering the wheels.

Claim.—The arrangement of the side screen A, and D, roller and blind B, as specified.

No. 1756. CHARLES F. PIKE, Providence, R. I., U. S., 11th November, 1872, for 15 years: "A Spark Arrestor and Consumer." (Appareil à détourner les étincelles pour les rejeter dans le fourneau.)

Claim.—The combination of the furnace, the compound blast-pipe G, the return stack-flues L, and the return boiler tubes K, for the purpose of driving by the force of the exhaust steam, the compound hot blast, composed of steam, all of the solid, and L portion of the gaseous unconsumed products of combustion from the smoke-arch to the furnace, through the return boiler tubes, and enabling it to contribute in its transit to the generation of steam as set forth.

No. 1757 THOMAS H. FULLER, Boston, Mass. U. S., 11th November, 1872, for 5 years: "Horse Shoe Nail Machine." (Machine à clou à cheval.)

A combination of rolling, pointing and punching gear whereby the nail shank at or near the point is reduced to the proper width and finish, and the edges of the nail are shorn of any excess of metal.

Claim.—1st. The combination with shaping or drawing rolls, of mechanism that automatically seces the blank therefrom, and carries it into position to be acted upon by the punch and die; 2nd. The combination of a drawing or shaping mechanism and a punching mechanism automatically co-operating to roll the nail shank and trim its edges; 3rd. The combination of shaping rolls *a, c*, (one having a head receiving recess and the other a head and shank recess and die groove) surface finishing and pointing rolls *n, o*, (the roll *n*, having a head receiving recess, and a roller groove, and the roll *o*, being a friction roll of larger diameter than the rolls *n*), and a straightening guide-roll *b*; 4th. The combination of means for drawing, pointing, surface-finishing, straightening and edge-trimming a nail blank; 5th. The reciprocating gripping-nippers or levers *z, z'*, stationary die plate *rs*, and reciprocating punch *r*; 6th. In combination with the two sets of rolls, a guide-tube C, that presents the nail to the upper roller dies and the connecting and guide-tube *m*, that conducts the blank from the first to the rear set of rolls, and presents the blank to the lower rolls; and 7th. In combination with the stationary die plate *rs*, and reciprocating punch *r*, the stationary stripper *ts*.

No. 1758. THOMAS H. FULLER, Boston, Mass., U. S., 11th November, 1872, for 5 years: "Manufacture of Horse Shoe Nails." (Fabrication du clou à cheval.)

Claim.—1st. In the manufacture of horse shoe nails, the process of forming the nail by cutting from a plate of uniform thickness, a blank, upsetting one end of this blank to form the head, and drawing the blank from the head to elongate and form the shank. 2nd. A nail formed from a cut blank by upsetting the head and drawing the shank.

No. 1759. THOMAS H. FULLER, Boston, Mass., U. S., 12th November, 1872, for 5 years: "Horse-shoe nail blanks punching machine." (Matrice pour le clou à cheval.)

Claim.—1st. The combination of leading and following punches and their dies, arranged as to distance apart, with a feeding mechanism operating upon the material to be punched, to give to it the specified movements; 2nd. The process of making a nail or nail blank, forming the top surface of the head at an angle less than a right angle relatively to the flat side; 3rd. The combination of the die *p*, and its punch, with the die *z*, and its punch made as specified in the parts beyond those which operate on the head of the nail or nail blank; 4th. The carriage feeding mechanism operated by the pawl *d*, and spring *j*, and consisting of the combination of the ratchet *e*, the cam *g*, made with a series of salient and re-entering angles or curves, and the guided connecting rod *h*, with the projection or roll thereon; 5th. The combination of the ratchet *e*, having one long and one short tooth, with the cam *g*, made with the edge *m*.

No. 1760. ISAIÉ FRECHETTE, St. Hyacinthe, Que., 12th November, 1872, for 5 years: "A Harvester." (Une moissonneuse.)

Claim.—1st. The harvester with grooved pulley *d*, band *e*, pulley *g*, revolving rake or rakes *f*, table *m*, endless band *n*, roller *o*, and pulley *q*, or their equivalents, endless band *p*, with rollers *Q*, gears *r*, and *r'*, shaft *s*, and pulley *t*, or their equivalents; 2nd. The endless bands *n*, and *p*, in combination with curved table *m*, and revolving rake or rakes *f*, or their equivalents; 3rd. The machine consisting principally of the endless bands *n*, and *p*, table *m*, and revolving rake *f*, in combination with any reaping or mowing machine; 4th. The rakes, arranged as shown.

No. 1761. D'ALEMBERT T. GALE, Fort Wayne, Ind., U. S., 12th November, 1872, for 15 years. "Nut and Coffee Roaster." (Appareil à torréfier le café et les noix.)

Claim.—1st. The arrangement of a series of springs B, and gear *ing* as a motor, for a roaster of nuts or other purposes, with a suitable governor pendulum or friction regulator. 2nd. The extension of the cylinder shaft C, to receive a drum *d*, and weight as a motor to be used independent of or in combination with the springs B, as

in figure 1; 3rd. A roaster for nuts and coffee provided with an automatic figure E, as a novelty ornament or attraction to work in sympathy with a pendulum, governor or the cylinder B; 4th. The apron G, arranged on the counter of a roaster for nuts or coffee; 5th. The combination of a roaster of nuts or coffee with the ratchet-wheel A, pawls *m*, and pendulum F, all arranged to serve as a regulator for an automatic roaster; 6th. A combined roaster and heating counter provided with an adjustable fire-box, for the use of coal or wood; 7th. The arrangement of pinion *p*, cog-wheels, springs B, studs in relation one to the other as a motor, whereby the spring or a series of springs B, are all wound from the shaft, and kept to their place, by an independent ratchet-wheel; 8th. The corner pieces *r*, and leg *g*, arranged for the purpose of elevating a metal nut counter; 9th. The threading of the bottom or foot of leg *g*, whereby a threaded cap-nut may be screwed on with relation to a roaster or counter; 10th. The roaster case *a*, counter D, spring B, pinion *p*, cog-wheels shaft C, automatic figure E, pipes *e*, cock-burners *r*, *t*, coal-box I, aperture *u*, apron G, corner pieces *r*, legs *g*, burners, ratchet-wheel *a*, clutch *n*, pawls *m*, pendulum F, cylinder B, drum *d*, weight-heating chamber *p*, night light *z*, and fluid retort H; 11th. The pipes *e*, combined with retort H, burners *r*, *t*, and counter D.

No. 1762. WILLIAM H. SKIDMORE, Secor, Ill., U. S., 12th November, 1872, for 5 years: "Car-coupling Machine." (Un attache-char.)

The object of this invention is to combine the double hook coupling with the old fashioned link and pin draw-head, to improve the construction of the guide and block over which the hooks meet, and to provide means by which either the hooks or the link and pin can be used without getting between the cars.

Claim.—1st. In the car-coupling, consisting of the draw-head A, the hooks B, the guides C, the braces V, V', W, the parts *e*, *e'*, and the lifting device M, *n*, *m*; 2nd. The combination of the brace *u*, the brace W, the guide C, the block *e*, the bolts *b*, *d*, *s*, and the draw-head A.

No. 1763. FRANCIS W. MALLETT, New Haven, Ct., U. S., 12th November, 1872, for 10 years: "Machine for polishing Needles." (Machine à polir les aiguilles.)

Relates to that part of the process in the manufacture of needles which is performed after the needles have been tempered, and consists in mechanism for revolving the needles, and while revolving passing them over brushes which revolve and vibrate in a line with the axes of the needles.

Claim.—1st. In combination with the plate E, and the facing L, to one or both *f* which a reciprocating movement is imparted, the polishing brushes arranged to operate through the perforations in the said plate; 2nd. In combination with the plate E, and the facing L, operating, as described, the toothed racks *a*, *d*, operating alternately, to receive and guide the needles in their passage upon the plate; 3rd. In combination with the hopper I, and cut-off C, the lever P, and holder R.

No. 1764. JOHN S. WILLIAMSON, Hamilton, Ont., 12th November, 1872, for 5 years: "Machine for Drying Clothes." (Un séchoir à linge.)

Claim.—The combination of three or more horizontal parallel bars *a*, secured at each end by means of two end pieces B, which are united together at the one end in such a way as to form a hinge C, the other end of the end pieces D, being secured against the wall or standing upon the floor.

No. 1765. JOHN J. GRANT, Solon, I., WILEY & CHARLES P. RUSSELL, Greenfield, Mass., U. S., 12th November, 1872, for 5 years. "Die for cutting Screw threads." (Matrice pour fileter les écrous.)

An arrangement within the die stock or holder and between the dies, of taper- or taper-headed adjusting screws for setting out the dies, the same operating in combination with external set screws to obtain perfect adjustment of dies.

Claim.—The combination with the stock and dies, and the set screws or equivalent external adjustment of the dies, of the interposed taper or taper-headed screws, applied to operate substantially as specified.

No. 1766. CHARLES W. HARVEY & JEROME F. FARGO, Buffalo, N. Y., U. S., 12th November, 1872, for 15 years: "Device for lubricating Railroad Journals." (Coussinet-graisseur de chemin de fer.)

Claim.—1st. The combination and arrangement with the journal and axle-box of a railroad truck, of a series of lubricating devices, each consisting of the felt G, spring I, and case H; 2nd. The partially detached portions or wings *p*, of the felt G; 3rd. The arrangement in an axle-box and with the oil-feeding devices G, I, H, of the blocks of felt J; 4th. The combination and arrangement with a series of oil-feeding devices G, I, H, with or without the blocks J, of the cord K; 5th. The arrangement in an axle-box and with the oil-feeding device G, I, H, of the pivoted arms L; 6th. The guard-plate *o*, secured to the felt G, of the oil-feeding device; 7th. The partitions *r*, and *r'*, provided with openings *f*, and *f'*.

No. 1767. ROBERT BERRYMAN, Hartford, Ct., U. S., 12th November, 1872, for 15 years: "Improvements on Steam Boilers." (Perfectionnements aux chaudières à vapeur.)

Claim.—A feed water heater in which are combined chambers D, bent tubes F, connected to a plate J, and each communicating with said chambers D and a steam tight casing A, enclosing said tubes F, and adapted to be connected with a water reservoir and with the feed water apparatus of a steam boiler.

No. 1768. JEREMIAH ENEAS, Montreal, Que., assignee of Mary G. Briggs, Boston, Mass., U. S., 12th November, 1872, for 5 years: "An abdominal supporter." (Un suspensoir abdominal.)

Claim.—The frame a, with compound curve a', the bars d, with slots d', and buttons d'', or their equivalents, in combination with elastic.

No. 1769. MAURICE GOLDMAN, Montreal, Que., 12th November, 1872, for 5 years: "Metal sole of Boots and Shoes." (Semelle de chaussure métallique.)

Claim.—A metallic boot sole A, furnished with points B.

No. 1770. HENDERSON WILLARD, Grand Rapids, Mich., U. S., 16th November, 1872, for 5 years: "An improved Barrel." (Un baril perfectionné.)

Claim.—A barrel or other circular package with two series of staves, reciprocally breaking joints or otherwise.

No. 1771. ABRAHAM HUFFER, Rochester, N. Y., U. S., 16th November, 1872, for 5 years: "A Blind Hinge." (Une penture de persienne.)

A "surface" spring hinge growing directly upon the outside of the wood instead of being morticed in as customary.

Claim.—The surface blind hinge consisting of the parts A, B, constructed with the right angle bearing C, and having the spring D, operating in connection with the socket b.

No. 1772. JOSHUA L. ABELL, Northampton, Mass., U. S., 16th November, 1872, for 5 years: "Manufacture of Grindstones." (Fabrication de pierres à émoudre.)

Claim.—1st. Sawing the blocks of undressed quarried stone into a series of slabs of any required thickness; 2nd. An improved manufactured article in a grindstone having one or both of its flat side surfaces sawn.

No. 1773. ABNER BURBANK, Rochester, N. Y., U. S., 16th November, 1872, for 5 years: "A Wringing Machine." (Machine à tordre le linge.)

Claim.—1st. In combination with the set of solid wooden or metallic rollers C, C, D, enclosing the rubber roller E, the cross-bar H, and central set screw d, when employed for the purposes of allowing a retraction of one of the solid wooden or metallic rollers for the insertion or removal of the rubber roller; 2nd. The triplicate solid wooden or metallic rollers C, C, D, enclosing the rubber roller E, when the upper rollers are separated at some distance apart, and the whole are used without gearing.

No. 1774. JOHN MACLAREN, Scranton, Penn., U. S., 16th November, 1872, for 5 years: "A Stop Cock." (Un robinet.)

The invention consists in a flexible ball-valve provided with a metallic guide and guard plate projecting from one side in combination with a stem having a central recess for the reception of such guide, causing the ball when compressed to close the orifice.

Claim.—1st. A stop-cock having a flexible ball-valve e, provided with spindle c, and cap d, in combination with stem b, and recess or passage f; 2nd. A stop-cock having a flexible ball-valve e, provided with a spindle c, cap d, with nut h, and with or without washer g, in combination with stem b, and recess f; 3rd. A stop-cock having a flexible ball-valve e, provided with a spindle c, with head i.

No. 1775. ABBOTT R. DAVIS, East Cambridge, Mass., U. S., 16th November, 1872, for 5 years: "Method of preserving Eggs." (Procédé de conservation des œufs.)

Consists in mixing with the eggs when in a state of liquefaction certain quantities of sugar, salt and sulphate of soda.

Claim.—1st. The method of preserving eggs by evaporation or condensation. 2nd. As a new article of manufacture preserved eggs in a thick semi-liquid state. 3rd. As a new article of manufacture preserved eggs in a thick semi-liquid state when combined with the ingredients described; and 4th. A new article of manufacture preserved eggs when condensed and formed into plastic sheets.

No. 1776. THEODORE R. TIMBY, Tarrytown, N. Y., U. S., 16th November, 1872, for 5 years: "Improvements on Railway Cars." (Perfectionnements aux chars de chemins de fer.)

Claim.—1st. A railway car constructed with a moveable floor or false bottom resting on springs so that the said floor with its superincumbent burden may yield or move independently of the body of the car. 2nd. An improvement in freight cars in the moveable or detached bottom B, provided with vertical sides or frame work D, d, and guards F, the whole working in guides G, and supported by springs C, resting beneath the timbers a, of the main car body.

No. 1777. JOHN CAVEN, Indianapolis, Ind., U. S., 16th November, 1872, for 15 years: "A Fire-place Grate." (Une grille de foyer.)

Claim.—1st. The divided journal-bearings G, H, in combination with the hinged sections C, D, of a revolving coal grate, for the purpose of retaining the sections closed without fastenings while being revolved; 2nd. The seats L, of the extensions I, arranged to form a continuation of the journal-bearing seats to support one of the hinged sections of the grate when opened; 3rd. The combination of the hinged revolving grate C, D, with the divided journal bearings G, H, the supporting sub-frames A, the curved extensions I, with their openings L, and seats J.

No. 1778. HENRY S. STEWART, Newark, N. J. Assignee of Francis E. Mills, New York, U. S., 16th November, 1872, for 5 years: "Improvements on Sewing Machines." (Perfectionnements aux machines à coudre.)

Claim.—1st. A foot treadle so constructed that the ankle joint of the operator can be brought in line with the centre of motion or axis on which the treadle vibrates; 2nd. An adjustable foot-board for treadles, so arranged that the part thereof, on which the heel rests, can be raised or lowered with respect to the centre of motion or axis of the treadle. 3rd. An adjustable heel stop for one foot or for both arranged upon the foot-board of a treadle so that the feet can be adjusted longitudinally thereon; 4th. The adjustable heel stop on the foot-board of a treadle, in combination with a foot-board, which can be adjusted vertically to bring the ankle joints in line with the centre on which the axis of the treadle turns; 5th. The combination of a knee brace with a treadle.

No. 1779. JOSEPH RIPPON, Woodstock, Ont., 16th November, 1872, for 5 years: "An adjustable Reflector." (Un réflecteur mobile.)

Claim.—The application of the reflector B, to the outside of the lantern.

No. 1780. ISAAC ATKINSON, Hamilton, Ont., 16th November, 1872, for 5 years: "Process of curing and packing Hams and Bacon." (Procédé pour la préparation du jambon et du lard séché.)

Claim.—Rolling the shoulders, hams and bacon in fine ground alum, in combination with the first part of the treatment in rolling the shoulders, hams and bacon in paper or *strawboard* saturated in a solution of alum, also in curing on shelves to avoid under-pressure.

No. 1781. HENRY B. MYER, Philadelphia, Penn., U. S., 16th November, 1872, for 5 years: "Apparatus for the manufacture of Illuminating Gas." (Appareil pour la fabrication du gaz d'éclairage.)

Claim.—1st. The arrangement of the gasoline chamber and the air chamber; 2nd. The construction of the clock work mechanism, the fan, the stop mechanism, and the gasoline or carburettor chamber; 3rd. The combination of the clock work mechanism, the fan, the air chamber, the gasoline chamber and the tube leading to the gasoline chamber from the air chamber. 4th. The arrangement of the drip chamber; 5th. The perforated side pipes J, in combination with the air and gasoline chambers.

No. 1782. THOMAS COPLAND, Hamilton, Ont., 16th November, 1872, for 5 years: "Process of Sweetening Castor Oil." (Procédé adoucissant l'huile de ricin.)

By the addition of chloroform, oil of lemon, oil of cinnamon, essential oil of almonds, and oil of aniseed in specified quantities.

Claim.—The addition of chloroform to castor oil as a sweetening principle, in combination with the flavoring described or any other

No. 1783. JOHN FOSTER, St. Simon de Yamaska, Que., 16th November, 1872, for 5 years: "A vertical pulveriser." (Appareil à désagréger les corps pulvérulents.)

Consists in the means used for striking the material to be reduced while in a free and falling state.

Claim.—1st. The shaft *a*, drum *d*, and bars *h*, in combination with the stationary cylinder *e*, bars *h*, hoppers *k*, and *l*; 2nd. The shaft *a*, drum *d*, and bars *h*, in combination with the revolving cylinder *e*, hopper *m*, hollow shaft *n*.

No. 1784. THOMAS H. DUNHAM, Boston, Mass., U. S., 16th November, 1872, for 5 years: "Manufacture of long staple oakum." (Fabrication de l'étoupe à long brin.)

Claim.—Improvement in the manufacture of oakum consisting in the method of treating the rope, strands and fibres in long lengths with oil and steam.

No. 1785. JAMES E. BOYLE, New York, U. S., 16th November, 1872, for 5 years: "An automatic faucet." (Un robinet automatique.)

Claim.—1st. A key or plug-faucet or cock so made with suitable parts and a gravitating valve within the key or plug, that when left open the supply will be automatically cut off in a given time. 2nd. In combination with such a cock, a means for adjusting or regulating and varying at pleasure the time or quantity of flow which can occur when the cock is left open.

No. 1786. ROBERT GEORGE, Toronto, Ont., 16th November, 1872, for 5 years: "Machine for slicing Bread or Vegetables." (Machine à trancher le pain et les légumes.)

A portable stand with moveable wire gauge to regulate thickness of slice to be cut in combination with an adjustable board and cutter.

Claim.—1st. The inclined stand *a*, 2nd. The curved knife *c*, 3rd. The arrangement *d*, *e*, by which the three fold movement is secured for the knife, backwards and forwards as well as downwards in cutting. 4th. The general construction and combination as applied to the purposes described or for similar purposes.

No. 1787. EDMUND A. DAY, Oberlin, Ohio, U. S., 16th November, 1872, for 5 years: "A Clasp for elastic tubes." (Une agrafe de tuyaux élastiques.)

Claim.—1st. The central metallic tube *C*, provided with transverse E. E. and combined and operated with the clasp A. B. and spring F. 2nd. The adjustable elastic nozzle D, in combination with the central tube C, and clasp A. B. or their equivalents.

No. 1788. JOHN TABER, South Wolfborough, N. H., U. S., 16th November, 1872, for 5 years: "A Washing machine." (Une machine à laver.)

Relates to that class of washing machines in which the clothes are passed between two longitudinally grooved or corrugated rollers, and it consists in the construction and arrangement of the frame work and rollers with the adjustable yielding bearings for one of said rollers, the vertical rollers being so arranged at the ends of the main rollers as to prevent the clothes from catching in the ends of the same.

Claim.—1st. In combination with the frame A. B. and longitudinally corrugated rollers C. D. with crank E, and journals A. A. the metal loops *b*, *b*, springs *d*, *d*, eyebolts *f*, *f*, cross-bar G, and thumbnuts H, E. 2nd. The verticle smooth rollers J, J, attached by wires *h*, *h*, to the side pieces A, A, and arranged at the ends of the main rollers G, D.

No. 1789. GEORGE P. GORDON, Rahway, N. J., U. S., 16th November, 1872, for 10 years: "A Printing Press." (Une presse d'imprimerie.)

Claim.—1st. In supplying the ink to the form inking rollers M, by or with two ink distributing surfaces 7 and 8, between which the form rollers shall pass and receive their ink from each distributing surface in turn for each impression. 2nd. Revolving in opposite directions to each other the inking surfaces 7 and 8; 3rd. The combination of the two opposite ink distributing surfaces 7 and 8, with the moveable form rollers bearers 4; 4th. The toggles H, in combination with the vibrating bed N.

No. 1790. CHARLES M. TITUS & LYNFRED MOOD, Ithaca, N. Y., U. S., 16th November, 1872, for 5 years: "A Horse Rake." (Un râteau à cheval.)

Consists in the means employed for dumping or unloading the rake by the double action of a hand-lever and horse-power.

Claim.—1st. The bar *l*, pivoted at *n*, to the draft frame B, and connected by pivots or hinges with the rake-head *h*, and having the whipple-tree attached at *s*. 2nd. The bar *l*, pivoted to the draft frame at *n*, and connected by pivots or hinges to the rake-head *h*, and having the hand-lever Q, connected at *r*; 3rd. The bar *l*, pivoted and connected with both the whipple-tree *s*, and the hand-lever Q, as a means of dumping the rake by the double action of the horse and hand-lever; 4th. The elongated end Q' of the lever Q, in combination with the fixture *r*, of the bar *l*, for the purpose of checking the rearward motion of the lever Q; 5th. The combination consisting of the pivoted and connected bar *l*, with fixture at *s* for the whipple-tree link the fixture *r*, for checking the lifting of the bar *l*, by contact with the lever Q, the hinging link K, the lever Q, the frame *u*, connecting to the lifting bar *l*, and rake-head *h*.

No. 1791. MARTIN L. SMITH, Arkona, Ont., 16th November, 1872, for 5 years: "A Clothes and Fruit Dryer." (Un séchoir à linge et à fruits.)

Claim.—1st. The employment of wire loops C, by drawing the sides together centrally to form bows or rings, to operate in horizontal grooves in the vertical posts A, whereby a linked connection is formed; 2nd. Providing a clothes dryer with supplementary bars D, furnished with pins E, and suspended from the fixed bars B, by hooks E, or other contrivance.

No. 1792. GEORGE D. MORSE, Toronto, Ont., 16th November, 1872, for 5 years: "Process of melting and bleaching fat and tallow." (Processé de fondage et blanchissement des corps gras.)

Consists in certain proportions of sulphuric acid and bichromate of potash to be used with steam process.

Claim.—The larger use of chemicals in melting and bleaching fats and tallow, and the introduction of open or wet steam for the purpose.

No. 1793. WILLARD H. SHERMAN & JAMES PARKYN, Montreal, Que., 16th November, 1872, for 5 years: "Middlings Separator." (Un séparateur des gruaux.)

Relates to the means adopted for securing a better and more equal distribution of air currents, and in the action of the brush on the bolting cloth.

Claim.—1st. The inclines *f*, with valves *h*, in combination with the openings *g*, and openings *c*. 2nd. The axial combination of the brush *q*, belt *p*, pulleys *o*, and shafts *n*, cross-bars *k*, adjusting screws *l*, and other parts. 3rd. The upper part of the machine divided into three spaces *l*, *l*, and *l*, in combination with inverted hoppers *m*, *n*, and *o*. 4th. The hoppers *m*, *n*, and *o*, in combination with throats *u*, *u*, and passages *u*, *u*, *u*. 5th. The passages *u*, *u*, and *u*, in combination with valves *h*, passage *u*, fan *u*, and discharge spout *u*. 6th. The shakers *x*, with projections Z, in connection with straps *u*; 7th. The shakers *x*, in combination with the valves *u*, and *u*. 8th. The inverted hopper *u*, in combination with the diaphragm *u*, and space *u*.

No. 1794. SAMUEL W. COOKE, Worcester, Mass., U. S., 16th November, 1872, for 5 years: "A Divider." (Un compas.)

The improvement consists in combining the moveable divider, pencil or other points with the leg of the instrument and in securing the points in position; also in combining with the legs of an extension compass a pair of calliper points.

Claim.—1st. The combination with the leg A, of the recess or depression I, to receive the loop H, or other holding device; 2nd. The leg A, provided with a groove A', upon its inner side and a recess or depression I, in combination with the removeable point G, holding-loop H and thumb-screw J. 3rd. The combination with the legs A, A, in an extension compass or dividers of calliper points K, 4th. An improved compass or dividers the leg or legs A, which are grooved upon their inner sides and fitted with holding-loop and thumb-screw and a series of inter-changeable points, all constructed and operating as set forth.

No. 1795. HIRAM WILLIAMS, Grass Lake, Michigan, U. S., 16th November, 1872, for 5 years: "A Rail-Joint." (Un manchon de rail.)

Consists of a metallic joint-splice of peculiar construction for railway bars, its object being to afford a firm support to the joint, and to relieve the rail ends from the concussion produced by the wheels of passing trains.

Claim.—The rail-joint, consisting of the bar *c*, set into the ends of the rails, and partly extending between the upper and lower webs of the rails at each end to receive the wheels upon their ordinary bearings provided with a broad bearing upon the ties and slotted ends, bearing between the upper and lower webs of the rail and secured to a fish-plate upon the opposite side of the rail by bolts.

No. 1796. JAMES T. PAGE, Rochester, N. Y., U. S., 19th November, 1872, for 5 years: "A Skimmer and Vegetable Dipper." (Une écumoire.)

Claim.—As a new article of manufacture, a skimmer and vegetable dipper swaged or "struck up" to form a concave body, and having a discharge opening with a wire grating at the bottom.

No. 1797. SAMUEL D. GILSON, Syracuse, N. Y., U. S., 19th November, 1872, for 5 years: "Apparatus for Manufacturing Salt." (Appareil pour la fabrication du sel.)

Claim.—1st. An apparatus for manufacturing salt by the employment of a cylinder which comes in contact with the brine and evaporates the liquid from its surface, in the passage of the heat through the jacket-space C. 2nd. The combination of the interior cylinder B, with the exterior cylinder B. 3rd. In combination with the cylinder B, the hollow heads, consisting of the plates *d*, *d*, enclosing the space *f*, which communicates with the jacket-space C, through the perforations *a*, *a*. 4th. In combination with the hollow heads of the cylinder, the radial wings or paddles *h*, *h*; 5th. In combination with the cylinder B, which evaporates the

bring upon its surface, a dryer which agitates and conveys the salt: 6th. In the combination of a series of hollow screws E, E, or equivalents, made hollow for the passage of heat, and so arranged as to agitate and convey the salt in drying, 7th. In the utilization of the heat that passes through the cylinder or cylinders, by employing the same in saturating the brine, drying the salt, or otherwise, in the production of salt; 8th. The stop-cock b, or its equivalents and the stuffing box i, either or both, in combination with a cylinder for evaporating salt and used at either or both ends thereof, for retaining and controlling the heat.

No. 1798. BENJAMIN T. TRIMMER, Rochester, N. Y., U. S., 19th November, 1872, for 5 years: "A Smut Mill and Grain Cleaner." (Un cylindre émotteur.)

Claim.—1st. The stationary beaters P, and revolving beaters P₁, when so arranged as to give a continuous action or circuit of the grain from one set of the beaters to another; 2nd. Providing the stationary beaters P, and revolving beaters P₁, with ribs or corrugations o, o, and p, p, alternately in a vertical and circumferential direction; 3rd. The revolving beaters constructed as described, with the rings p, p, fans g, g, with or without the rings or fans r, r, when operating in connection with the stationary beaters; 4th. The arrangement of the revolving beaters P₁, provided with the hubs m, and rings p, p, in combination with the fans g, g, and beaters P; 5th. The arrangement of the exhaust fan D, air tube e, floor s, spouts t, u, and scraper or fan E; 6th. The arrangement of the brush-bars g, g, springs o, p, and their holding screws and flanges w, of the scraper E; 7th. The arrangement of the perforated cylinder B, made up of a series of sections and carrying the beaters P, in combination with the rods g, and tube sections h; 8th. The angle irons k, k, in combination with the perforated cylinder B, made up of a series of sections or rings, and united together by the rods g, and tube sections h; 9th. The arrangement of the air trunk, the same made of two parts H, T, communicating at top and bottom, the anterior part being also divided by the double inclined chute b, b, and having the swing-valve d, and the whole communicating at the top by port f, with the jacket space between the perforated cylinder and outer casing; 10th. Coating the acting surfaces of the beaters with emery, or equivalent material.

No. 1799. ALFRED WILLSON, Bell Ewart, Ont., 19th November, 1872, for 5 years: "A Car-Coupler with Compressed double or single Buffer Combined." (Un attache-char à double ou simple tampon comprimé.)

A self-acting coupling—the buffers and draw-bars working conjointly and operating together in such a manner as to produce increased rigidity in proportion to the draught, thereby obtaining in a certain degree the ordinary lateral and swinging motion of the train.

Claim.—1st. The combination of the buffer B, spring F, and cutter or key H, with the draw-bar C, back end C', of draw-bar, web I, and spring G, arranged within or supported by the casting A; 2nd. The combination of the draw-bar C, and back end C', of draw-bar, connected together by the knuckle-joint D; 3rd. The combination of the draw-bar C, spring J, and front casting E; 4th. A double or forked shaped buffer such as shown in figure 4. The combination of elliptic spring F, spiral spring G, back end C, casting or shoe A, as shown in figs. 5 and 6.

No. 1800. JOHN S. BROOKS, Rochester, N. Y., U. S., 19th November, 1872, for 5 years: "A Stove-Board" (Un sous-poêle.)

Consists in a covering of zinc or other non-conducting metal with a base of sheet iron secured together at the edges and combined with a paper lining.

Claim.—1st. The stove-board composed of the zinc or other non-conducting metal covering a, and sheet iron or other metal base b, combined together; 2nd. The combination with the zinc or other non-conducting metal covering a, and sheet iron or other metal base b, of the paper-lining f.

No. 1801. GEORGE W. HOWELL, Covington, Ky., U. S., 19th November, 1872, for 5 years: "A Corrugated Elbow" (Un coude de tuyau ridé.)

Consists in corrugating, graduating and forming into sections pieces of metal in such a manner as to admit of their being made into stove-pipe elbows, and nested or packed together.

Claim.—1st. The parts A, B, adapted to packing for shipment; 2nd. The parts A, B, when constructed to form sections of stove-pipe elbows; and 3rd. The elbow composed of the parts A, B.

No. 1802. ALEXANDER H. CARYL, Groton, Mass., U. S., 19th November, 1872, for 5 years: "Machine for Punching Horse-Shoe Nail Blanks." (Matrice à clou à cheval.)

Relates to a method of cutting up rolled nail-plates to form therefrom nail-blanks, and to the manner of punching same.

Claim.—1st. The method of punching nail-blanks by means of a gang of simultaneously acting punches, the first of which punches the first nail of a plate, the second of which punches the third nail of the same plate, at the next descent of the punches (the first cutting the first nail of another plate) the third of which punches in succession the second nail of each plate, the fourth the fifth nail of each plate in succession, and so on, the plates having a regular

intermittent feed movement, after each action of the punches, that shall carry each plate to the action of the next punch; 2nd. In combination with the gang of simultaneously acting punches the feed-mechanism arranged to feed the ratchet bar for the action of the successive punches.

No. 1803. ALEXANDER H. CARYL, Groton, Mass., U. S., 19th November, 1872, for 5 years: "A Horse-Shoe Nail Machine." (Machine à clou à cheval.)

The invention relates to the manufacture of horse-shoe nails from punched blanks by compressing, spreading and bevelling the point end of the shank or body and removing the redundant side metal by a punch and die.

Claim.—1st. The pair of compressing, spreading and bevelling dies at the ends of toggle arms e, f, pivoted and operating as described; and 2nd. In combination with the dies m, n, the punch and die y, z, arranged and operating with relation to the dies m, n.

No. 1804. WILLIAM B. GEDDES, Rochester, N. Y., U. S., 19th November, 1872, for 5 years: "A Furnace." (Un calorifère.)

Claim.—1st. The method of passing the partially heated air from the air space G, inward through the passages g, g, into the air heating chamber F, and thence through the thumbles o, o, outward and upward into the dome D; 2nd. The radial thumbles o, o, when arranged in the upwardly inclined direction and serving to connect the interior air heating chamber with the space outside leading to the dome; 3rd. The combination with the air heating chamber F, of the reverse cones E, I, located respectively at the bottom and top of said chamber, and serving to give a direction to the currents; 4th. The combination with the cone E, and air heating chamber F, of the angular passages g, g, 5th. The combination with the fire-pot e, of the fire ring L, having a series of perforations t, t, opening into the fire pot, when said ring is located at a point above the fire sufficient to bring the contents of the ring in contact with the escaping gases to ignite them; 6th. The combination with the hollow ring L, provided with the series of perforations t, t, of the tube u, funnel v, and water pan M; 7th. The introduction of a jet of steam either alone or in connection with a jet of air, into the fire-pot above the fire for increasing the combustion; and 8th. The construction of the water-pan M, with a closed-body for containing water and with one or more open-mouthed feeders Z, Z.

No. 1805. ANTHONY KLINE, Bond Head, Ont., 21st November, 1872, for 5 years: "A Chain Straw-carrier for Threshing Machines." (Un chariot à paille de machine à battre.)

Consists in making the straw carrier in a more portable form and in the constructing and connecting of all the parts thereof.

Claim.—1st. The combination of the connecting pieces D, saddles E, and cross-slats B; 2nd. The combination of the chain F, carriers G, bolts H.

No. 1806. CHARLES WINSLOW, Boston, Mass., U. S., 21st November, 1872, for 10 years: "An Elastic Goring for Boots and Shoes." (Un élastique de bottine.)

An article of manufacture, in the elastic goring for boots and shoes, consisting of two surfaces of elastic fabric having an elastic material introduced between the two edges, and their meeting surfaces coated with a vulcanized rubber compound, the article being completed by the process of vulcanization.

No. 1807. JOHN ABELL, Woodbridge, & ASHBY D. COLE, Toronto, Ont., 21st November, 1872, for 5 years: "An Adjustable Chute." (Un coursier mobile.)

A contrivance whereby the supply of water to a turbine wheel can be regulated without approaching the wheel, the chutes being so arranged as to be opened and closed at will.

Claim.—The combination of the hinged plate B, stud C, and moveable annular casting E.

No. 1808. ELIAS BURNHAM, Peterborough, Ont., 21st November, 1872, for 5 years: "A Process of Roofing." (Composition de toiture.)

The infusion into boiling coal-tar of coarse sharp sand so as to form a preparation to be applied to the roofing of houses.

No. 1809. JOHN D. LAWLOR, Montreal, Que., 21st November, 1872, for 5 years: "Improvements on Sewing Machines." (Perfectionnements aux machines à coudre.)

Consists in the construction and adjustment of lock-plates acting on the slide covering the shuttle.

Claim.—1st. The plate b, in combination with lock-plate c; 2nd. The plate b, in combination with lock-plate c, with spur i; 3rd. The plates b, in combination with lock-plate c, and projection m.

No. 1810. WILLIAM T. FARRE, Montreal, Que., 21st November, 1872, for 15 years: "Machine for making Curved Tubes of Soft Metal." (Machine à faire des tuyaux courbes en fer doux.)

A machine which by a method of pressing analogous to the spinning of sheet metal in the lathe, reduces the thickness of a previously cast tube, the said tube having been cast with a surplus of metal at the places where the outside of the curves are desired.

Claim.—1st. The combination with the die F, and the mandrel D, of the revolving plate-die E; 2nd. The combination with the threaded mandrel stem L, and the eccentric shaft O, of the intermediate mechanism through which feed-motion is imparted to the tube; and 3rd. The latter combination S, T, U, or its equivalent in combination with the die F.

No. 1811. JAMES T. PAGE, Rochester, N. Y., U. S., 21st November, 1872, for 5 years: "A Broiler." (Un grill.)

Claim.—1st. The combination with the groove a, the cast or malleable grate B, when the same is constructed with spurs or points h, h, which strike into the groove at intervals, whereby a better contact is secured; 2nd. The cast grate made up of an interior and exterior ring with radial arms, and projecting points to strike into the groove of the broiler.

No. 1812. FRANCIS A. HOYT & SETH DEAN, La-Crosse, Wis., U. S., 21st November, 1872, for 5 years: "Method of Dressing Mill-stones and Machine therefor." (Manière de rhabiller les meules et appareil pour cet objet.)

Claim.—1st. The method of dressing and furrowing mill-stones, that is to say, by means of a rapidly revolving wheel of emery. 2nd. The central tubular post A, provided with the pinion S, in combination with the frame of the machine pivoted thereon and provided with the pinion U, whereby the machine may be driven from the mill spindle. 3rd. The adjustable shoe K₁, or its equivalent arranged to support the outer end of way C, whereby the way may be inclined and the cutter caused to rise as it approaches the edges of the stone; 4th. The support K₂, or its equivalent, provided with a shaft arranged to be connected to the mill spindle whereby the machine may be operated from the spindle when dressing the upper stone.

No. 1813. THOMAS HENDERSON, Hamilton, Ont., 21st November, 1872, for 5 years: "A Shuttle of Sewing Machine." (Une navette de machine à coudre.)

Claim.—1st. The construction of a shuttle with a solid face, as shown in Fig. 2 made from a solid piece, brazed or otherwise. 2nd. Placing the bobbin in the back of the shuttle as shown, instead of the front; 3rd. The arrangement and combination of three slots f, f, f, and four holes h, on one side. 4th. The arrangement of the opening e, in the face of the shuttle for facilitating the threading of the bobbin, in combination with the holes h, and slots f, f, f, as specified.

No. 1814. DORWIN D. PENNOYER, Coaticook, & GEORGE C. HANSON, Barnston, Que., 21st November, 1872, for 5 years: "A Foot Stove and Lantern." (Un chauffe-pied à lampe.)

Claim.—1st. The plates K, and L, aperture M, and inlet holes E, in combination with the plate G, for inducing a current of air in the stove A; 2nd. In combination with the arrangement of plates K and L, aperture M, and holes E, the employment of the reflector H, and reflecting plate G.

No. 1815. JOHN H. HENDERSON, Ayr, Ont., 21st November, 1872, for 5 years: "A thread Cutter of Sewing Machine." (Un coupe-fil de machine à coudre.)

Consists of a double edge knife attached to the head of a sewing machine or to the upright part of the presser post.

Claim.—A straight or curved thread cutter attachment D, to sewing machines.

No. 1816. CHARLES Z. O'NEILL, Montreal, Que., 21st November, 1872, for 5 years: "A Sewing Machine Shuttle Protector." (Un protecteur de navette de machine à coudre.)

Claim.—1st. The shuttle carrier c, and shuttle K, in combination with spindle u, arm v, and spring s. 2nd. The arm v, moving with and attached to any shuttle carrier c.

No. 1817. ALEXANDER REEKIE, Wilfrid, Ont., 21st November, 1872, for 5 years: "Improvement on the Sprague Mower." (Perfectionnement à la faucheuse de "Sprague.")

Relates to an improvement by which the driver is enabled to impart a tilting or dipping motion to the cutter-bar in proportion to the nature of the ground the machine passes over, also in the formation of the casting or hinge-joint.

Claim.—1st. The combination of the lever D, flanges E and F, quadrant G, and catch H, for tilting the casting A; 2nd. The combination of the rod B, oblong taper hole C, and casting A.

No. 1818. GEORGE W. PAGE, Henrietta, Ohio, U. S., 21st November, 1872, for 5 years: "A bracket Shelf and Clothes Dryer." (Un séchoir à linge à console.)

The combination with a bracket shelf of a number of radial arms provided with slotted sockets secured to a semi-circular metallic rod.

Claim.—1st. The combination of the back A, shelf B, bracket C, and rod D, with the radial arms F. 2nd. The slotted socket H, in combination with the arm E, and semi-circular rod D.

No. 1819. RUSSELL SMITH, Richford, Vt., U. S., & NELSON SMITH, Sutton, Que., 21st November, 1872, for 5 years: "A Milk Pan Cooler." (Une boîte-réfrigérateur à lait.)

Consists in the employment of springs to elevate the inner pans from the water so that they may be scalded without removal, also in the employment of latches to hold down the inner pans when in use.

Claim.—1st. The milk-pan or pans A, A, and cooling vessel, provided with one or more springs c, for supporting the pan or pans, and elevating such within the said cooling vessel B. 2nd. The milk-pan or pans A, provided with elevating springs and means of locking down the pan or pans, and also with the separate ducts e, e, to fit together.

No. 1820. CHARLES J. APPLETON, Hamilton, Ont., 21st November, 1872, for 5 years: "A Sewing Machine." (Une machine à coudre.)

Claim.—1st. In driving the shuttle and needle-bar from the same tablet m, or its equivalent; 2nd. The arrangement of the take-up frame p, and take-up e, in combination with the extension plate H; 3rd. The arrangement of the open pressure post foot, 4th. The arrangement of the double-spring tension b; 5th. The arrangement and combination of the shuttle W, spring o, screws K₁, K₂, shuttle race and sliding plates x, for adjusting the tension as specified.

No. 1821. JAMES MARR, Simcoe, Ont., 22nd November, 1872. (Extension of Patent to Dominion, No. 2068, Province of Canada): "A Plough Guide and Holder." (Un tuteur de charrue.)

The addition of a "Gauge-Wheel" attached to the plough-beam by an iron arm.

Claim. The principle of gauging the width and depth of the furrows ploughed with the Plough-Guide and Holder, so that the furrows are all even and alike as specified.

No. 1822. ELISHA B. RICH, Lancaster, N. B., 22nd November, 1872. (Extension to Dominion of Patent No. 123, New-Brunswick): "Saw Sharpener and Finisher." (Appareil à finir et affûter les scies.)

Claim.—Self-acting machinery for cutting down, sharpening and finishing saws with grinding stones without the use of files or other instruments.

No. 1823. WILLIAM E. DAMANT, West Hoboken, N. J., U. S., 27th November, 1872, for 5 years: "Machine for Flattening out the dough and paste for biscuits, etc." (Rouleaux mécaniques de pâtisseries.)

Is a combination of two or more pairs of endless aprons between which the dough is gradually compressed or flattened out to the requisite thinness, with starch-boxes having perforated bottoms.

Claim.—1st. The combination with each other of two or more pairs of aprons with gradually diminishing spaces between every succeeding pair; 2nd. Combination of the starch boxes D, D, with the converging and flattening aprons A', A', and A'.

No. 1824. WILLIAM E. DAMANT, West Hoboken, N. J., U. S., 27th November, 1872, for 5 years: "Dough Mixers." (Un pétrin mécanique.)

Consists of revolving screws for mixing purposes and of a sliding and moveable platform upon which the dough is discharged.

Claim.—1st. The two screws C, C, reversely twisted, and revolved in opposite directions, in combination with a trough vessel D, having hopper A. 2nd. The combination with reversely twisted and revolved screws C, and vessel D, A, of the trough E, resting lightly on rollers b, b.

No. 1825. BRIDGET FRENCH, Rochester, N. Y., U. S., 27th November, 1872, for 5 years: "A Lubricating Compound." (Une composition lubrifiante.)

Claim.—The lubricating compound composed of petroleum or other oil, tallow, bees-wax, and soda either with or without Glauber or Epsom salt, in proportions substantially as named.

No. 1826. OLIVER B. HOWARD, Deering, Me., U. S., 27th November, 1872, for 5 years: "A Razor Strap." (Un cuir à rasoir.)

Claim.—The combination of the handle *d*, rod *c*, pieces *h*, *i*, and pieces *b*, *c*, the part *a*, composed of leather and a metal inner-strip, the spaces between the two parts of the strip *a*, being arranged to hold the boxes *m*, and *l*.

No. 1827. SOCRATES SCHOLFIELD, Providence, R. I., U. S., 27th November, 1872, for 5 years: "Machine for Making Cigar Bunches." (Appareil à lier les cigares.)

Claim.—1st. The employment of the spur roll *L*, or its equivalent for feeding loose masses of tobacco, into the sizing chamber of a cigar bunch making machine when such roll is driven by adjustable frictional means so arranged as to allow the roll to cease its action when the chamber has been properly filled, without interfering with the continuous action of the other parts of the organized machine; 2nd. The automatically locking, sizing chamber *B*, in combination with the opening and closing roll portion of the machine by the direct movement of which the said chamber is operated; 3rd. The combination with the feeding roll *L*, and knife or gate *J*, of a throat plate *N*, arranged to receive a limited up and down movement in timely relation to the opening and closing movement of the knife or gate; 4th. The combination of the automatically operating apron *F*, with the opening and closing rolls *c*, *e*, 5th. The slide *O*, having end trimming cutters *h*, *h'*, in combination with the bucket wheel *S*, or its equivalent, arranged for operation in relation with the rolls; 6th. The latch bar *K*, in combination with the shaft *E*, the moveable cam *L*, the shaft *B*, the wiper *O*, the stationary cam *M*, the sliding clutch collar *N*, the spring *P*, and the pin *n*, on the loose revolving wheel *J*.

No. 1828. JOHN H. HENDERSON, Ayr, Ont., 27th November, 1872, for 5 years: "A Sewing Machine Needle Threader." (Appareil pour enfiler les aiguilles des machines à coudre.)

Claim.—The arrangement and combination of the tube *d*, piston *a*, spring *e*, slot *f*, pin *h*, tongue *c*, slit *i*.

No. 1829. JOHN H. MILLS, Boston, Mass., 29th November, 1872, for 5 years: "Mode of generating Steam." (Manière de produire la vapeur.)

Claim.—1st. A system of generating steam in the employment of two liquids, one, as a vaporizing and power transmitting agent, which vaporizes at a comparatively low temperature, and the other possessing sufficient heat at or below its boiling point to vaporize the former; 2nd. A system of generating steam by the use of differential agents as stated, such a constriction and arrangement of apparatus that the heat transmitting fluid or medium remains at rest, while the vapors of the vaporizing fluid have no access to the atmosphere, but are condensed by the apparatus and returned to the generator; 3rd. A system of generating steam as described in which two differential cylinders are employed for purposes stated, the method of re-heating the exhaust steam in transit from the primary to the auxiliary cylinder by passing the exhaust pipe through the heat transmitting fluid or agent; 4th. The general combination of the water receptacle or jacket *C*, the generator *B*, the condensing apparatus *Q*, and the differential cylinders *G*, and *T*; 5th. Double cylinder engines, the construction and arrangement of valves and cranks, whereby the exhaust from the first cylinder takes place simultaneously, or thereabouts with the "cut off" of direct steam from said cylinder; 6th. The construction and arrangement of the valves and cranks of double cylinder engines whereby the exhaust from the two cylinders is so governed that such exhaust shall both act upon the piston of the auxiliary cylinder and escape or exhaust from such cylinder during the entire stroke of its piston.

No. 1830. WILLIAM E. PRALL, Washington, U. S., 29th November, 1872, for 5 years: "Device for Supplying Locomotives with water." (Appareil pour fournir l'eau aux locomotives.)

Claim.—The combination with each other and with a locomotive as described of an air-chamber carried or drawn by the locomotive to receive and retain atmospheric air under pressure, an air-pump operated by the locomotive or by steam from its boiler to fill said air-chamber, an independent stationary reservoir to contain a water supply; and pipes, first to convey the compressed air to said water-reservoir, that its pressure may operate upon the surface of the water therein, and second to convey this water under pressure into the tender or tank of the locomotive, the whole being arranged consecutively and conjointly substantially as set forth.

No. 1831. BENJAMIN F. GREEN, Syracuse, N. Y., U. S., 30th November, 1872, for 5 years: "Chair and Step Ladder Combined." (Chaise-escabeau.)

Consists in combining with the two main sections forming a chair and step-ladder a friction-clamp and dowel-pins for securing the parts in a folded position and also metallic terminations for the support of the chair-back.

Claim.—The apex spring-clamp *d*, *e*, dowels *i*, *j*, and serrated plugs *h*, in combination with the hinged sections *A*, *a*, *B*, *b*, of the chair and ladder.

No. 1832. JOHN S. PATRIC, Rochester, N. Y., U. S., 30th November, 1872, for 5 years: "Machine for Compressing Air." (Appareil à comprimer l'air.)

Invention consists in providing an automatic acting engine for the purpose of compressing air to be used as a motor for driving machinery, thereby affording power which may be conveyed in pipes to almost any desired distance without loss of friction, etc.

Claim.—1st. The vessel *B*, provided with compressing chambers *C*, and *D*, centrally located water-box *E*, and suitable inlet and outlet water and air valves; 2nd. In combination with the tilting air compressing vessel *B*, suitable automatically acting locking devices; 3rd. The flexible packing gasket *r*, applied in the manner described, in combination with the swing valve.

No. 1833. JOHN C. HANNA, Rossville, Iowa, U. S., 30th November, 1872, for 5 years: "A Sash Fastener." (Un ferme-croisée.)

A window catch for supporting windows when open and securing them when closed.

Claim.—The combination of the hinge *A*, thumb-catch *C*, and supporting catch *D*, with the plate *E*, and slot *F*.

No. 1834. JOHN H. OSBORNE, Guelph, Ont., 30th November, 1872, for 5 years: "A Sewing Machine Treadle." (Une pédale de machine à coudre.)

Consists in so adjusting the treadle to the stand or frame as to render it moveable, either to or fro and capable of being fastened at any desired point.

Claim.—An adjustable sewing machine treadle with the combination of the hangers *C*, *C*, the bolts or set screws *D*, *D*, in the hand screws *F*, *F*, and the rod *G*.

No. 1835. DUNCAN MCKENZIE, Brooklyn, N. Y., U. S., 30th November, 1872, for 5 years: "A Baker's Oven." (Un four de boulangerie.)

Consists in a combination of flues for returning to the baking-chamber, and utilizing, the gaseous products of combustion and vapour of the oven.

Claim.—The combination with the baking-chamber *A*, of the oven and one or more fire-places *B*, for heating the latter by the gaseous products of combustion entering said chamber, of a return flue or flues *D*, arranged to connect with the ash-pits *C*, of the fire places.

No. 1836. JAMES YOUNG, Kelly, Scotland, G. B., 30th November, 1872, for 5 years: "Process for the treatment of Natural Petroleum." (Mode de traitement du pétrole.)

Claim.—The treatment of natural petroleum with liquid muriatic or hydrochloric acid heated so as to eliminate the acid gas, or with muriatic or hydrochloric acid, in the gaseous state.

No. 1837. JAMES YOUNG, Kelly, Scotland, G. B., 30th November, 1872, for 5 years: "Process for the Manufacture of Carbonate of Soda." (Procédé pour la fabrication du carbonate de soude.)

Claim.—1st. The process of boiling with water bi-carbonate of soda mixed with compounds of ammonia, or heating it by steam so as to reduce it to carbonate of soda, by driving off and recovering a portion of the carbonic acid and the residual compounds of ammonia; 2nd. Conducting the manufacture of carbonate of soda in the manner described so that all the ammonia or compounds of ammonia are always kept within air-tight apparatus.

No. 1838. CHARLES V. KASSAR, Assignee of Wm. H. Harris, Buffalo, N. Y., U. S., 30th November, 1872, for 10 years: "A Hot-Air Furnace." (Une fournaise à air chaud.)

Claim.—1st. The combination with the combustion chamber *D*, supplemental radiating chamber *E*, connecting flues *f*, and shell *d*, of the pendant reversible flues *k*, within the chamber *D*; 2nd. The arrangement of the pendant reversible flues *k*, with the connecting flues *f*, so as to leave an annular space *h*, at their junction forming a self-packing joint; 3rd. The arrangement, in the combustion chamber of a hot-air furnace of the air-pipes *l*, suspended at their upper ends from the top plate *d*, to which they are rigidly secured while their lower ends fit over upwardly projecting sleeves of the base plate between which and the ends of the pipes, sufficient space is left for the expansion of the pipes; 4th. The combination with the sheet-iron shell *d*, of the combustion chamber and top-plate *d*, thereof provided with a flange *n*, of the connecting ring *o*, secured to the shell *d*, and overlapping the outer edge of the plate *d*, so as to connect at both, and form a packing space.

No. 1839. CYRILLE DEMERS, St. Flavien, Que., 30th November, 1872, for 5 years: "A Clothes Washing Machine." (Machine à laver le linge.)

Consists of grooved or corrugated boards covered with zinc worked horizontally by levers.

Claim.—1or. Uno blanchisseuse mécanique, la combinaison des deux planches cannelées horizontales G et H; 2mo. La combinaison du levier D, et des bras E, avec la planche supérieure G, pour lui imprimer son mouvement de va-et-vient, et laver le linge sans le comprimer ni le rouler. 3mo. La combinaison des deux guides ou rainures O, O, avec les planches G et H, pour empêcher le linge de se déchirer ou de se rouler.

No. 1840. GEORGE F. BLAKE, Boston, Mass., U. S., 30th November, 1872, for 15 years: "A Valve for direct acting Steam Engines." (Soupape de machine à simple effet.)

Claim.—The slide-valve c, provided with suitable ports, so that by movement in four directions it acts both as the main valve and the secondary valve of the engine.

No. 1841. WILLIAM BOLLARD & ROBERT H. SMART, JR., Brockville, Ont., 30th November, 1872, for 5 years: "A Cooking Utensil." (Un ustensile de cuisine.)

Claim.—1st. In combination with a raised cover J, the inner-plate K, to form a steam-condensing chamber having apertures L; 2nd. Providing the plate K, with a central aperture having a revolving cover M, whose incised edges overlap the inner and outer faces of the plate to retain the cover to the aperture when adjusted; 3rd. The grooved or folded piece N, to receive the partition I, of the steam-division when applied to the cover M, plate K, or exterior cover J; 4th. The arrangement of the steam-pipes E, whereby they pass through the baking chamber B, from the water-chamber A, to the collars of steam-divisions; 5th. The adoption within the baking chamber B, of a false bottom E, provided with suitable lifting handles F; 6th. The combination of the baking chamber B, and steam-chambers D, when so arranged that the latter projects exteriorly over the walls of the former.

No. 1842. SELIM PETTET, Thurlow, Ont., 30th November, 1872, for 5 years: "A Bee-Hive." (Une ruche.)

Claim.—1st. The air-chamber and feeding-chamber B, B; 2nd. The ventilators G, G, and a honey-board, which thoroughly ventilates the hive from bottom to top, thereby saving the lives of the bees; 3rd. The connecting portion of the hive with another hive by means of the connecting frame in the ends of the hive with hooks and eyes, which make it a self-swarming one, and when not attached the small pane of glass with wooden shutter; 4th. In the making and style of points of the moveable comb-frames so as not to be fastened down by wax.

No. 1843. BROOKS W. WALTON, Fergus, Ont., 30th November, 1872, for 5 years: "A Gang-Plough." (Une charrue à socs multiples.)

Claim.—1st. The construction of the frame F, composed of diagonally placed parallel bars and stay-bars D, arranged so that the ploughs can be adjusted more or less close, to make furrows of the desired width apart; 2nd. The arrangement of the grab, levers H, chains I, braces C, and cross-bar G, in combination with the axle B, and frame F, for lifting the ploughs by the hand-lever O. 3rd. Providing the ploughs with a solid raised cutting edge Q, for dividing the soil before being turned by the mould-boards. 4th. The manner of connecting the draft-tongue to the frame F, by a pivot bolt E, passing through the same, to allow the tongue to have motion vertically, independent of the frame.

No. 1844. JOHN W. CARTER, Boston, Mass., U. S., 30th November, 1872, for 5 years: "Manufacture of writing Ink." (Fabrication de l'encre à écrire.)

Claim.—The process of manufacturing inks and writing fluids by forcing air through them in the apparatus or any other substantially the same for forcing air into inks and writing fluids and for agitating them.

No. 1845. SUMNER A. GILMAN, Boston, Mass., U. S., 30th November, 1872, for 5 years: "A Copper Paint for Ships, bottoms." (Peinture de cuivre pour les fonds de vaisseaux.)

Claim.—1st. The paint described consisting of a tarry or resinous menstruum mixed with oxides, sulphides, or the insoluble salts, or basic salt of copper, produced by precipitation; 2nd. The use or application of the precipitated oxides, sulphides, insoluble salts or basic-salt of copper, either with or without an admixture of ochre, umber, chalk, or other diluent substances in marine paint; 3rd. In the combination with a tarry or resinous menstruum of the oxide, or insoluble salts of mercury, or an insoluble preparation of arsenic for instance, or pigment to be used as a marine paint.

No. 1846. DUNCAN E. MCFARLAND, Niagara, Ont., 30th November, 1872, for 5 years: "A Point for Drive Wells." (Une sonde de puits foré.)

Consists of an internal screen for keeping sand and gravel out of the pipe, thus protecting the valves and ensuring the efficient working of the pump.

Claim.—A wire-screw B, placed within a perforated pipe A, and held in position by the spring-ring C.

No. 1847. GEORGE K. PROCTOR, Salem, Mass., U. S., 30th November, 1872, for 15 years: "Castor attachment for Sewing Machines." (Ajustage de roulettes aux pattes des machines à coudre.)

Claim.—1st. The application of castors to sewing machine tables, stands, and the like by means of levers, in which the castors are located and the said levers so arranged and constructed and connected together upon the machine that by moving one of them the castors will be brought into position for use; 2nd. The levers G, G, G, or their respective equivalents carrying castors F, F, F, respectively in combination with an arm I; 3rd. The lip L; 4th. The bar H, constructed to form receptacles for the drippings of oil from rod D.

No. 1848. THOMAS NEY, Peel, Ont., 30th November, 1872, for 5 years: "A Horse Poke." (Un carcan de cheval.)

So constructed that when the animal attempts to break its enclosure, the point of the poke coming into contact with the fence, a spring is pressed down by means of an upper pin in the bow, and a grooved slide attached thereto being forced across the spike-head propels the latter to the rear of the mortise so that the spikes striking out enter the lower part of the animal's back.

Claim.—1st. The morticed poke A; 2nd. The spiko-head E, and the manner of inserting the spikes; 3rd. The grooved slide D, in combination with the spring B, and its mode of action in spike-head E, and the working of these parts in combination.

No. 1849. CHARLES R. ELY, Northfield, Vt., U. S., 30th November, 1872, for 5 years: "Improvements on Saw Mill Machinery." (Perfectionnements au mécanisme des scieries.)

Consist in the mechanism by which the carrier frame is moved backwards and forwards on the rails, in an adjustable saw-guide, a regulating gauge, and dogs to attach timber to the sliding frame of the carrier.

Claim.—1st. The plates d and e, and stanchions f, in combination with lever n, hook s, post t, guide p, and guide-bar g; 2nd. The socket k, with sections of cams m, and n, in combination with forked rest U, elastic cap w, or its equivalent with or without friction pulley C; 3rd. The socket k', constructed with projections o₁ and p₁, and pulley r₁, in combination with shaft p₁, friction pulley s₁, and lever q₁; 4th. The shaft b₁, pulleys e, and pulley f₁, in combination with pulley s₁, combined frictional and ordinary pulley r₁, friction pulley s₁, projections o₁, and p₁, and pulley r₁; 5th. The saw-guide d, constructed in two parts, with flanges z, adjusting screws h, ribs f, rest g, and screw k₂. 6th. The adjustable gauge consisting of slide o₂, sleeve p₂, guide-bar m₂, and guide n₂, cramp q₂, and weight s', with or without moveable pulley t₂. 7th. The angle plate w₂, or its equivalent, with pivoted lever z₂, ratchet e₂, and pawl w₂, and dog a₂, in combination with pivoted lever z₂, and dog a₂; 8th. The right and left handed screw f₂, with collars d₂, and e₂, dog c₂, and pivoted lever z₂, and dog a₂, and other parts as described.

No. 1850. THOMAS R. SINCLAIRE, New York, U. S., 30th November, 1872, for 5 years: "Apparatus for Filtering Liquids." (Appareil à filtrer les liquides.)

Claim.—1st. The combination with an air-tight or hermetically closed filtering vessel, of one or more perforated tubes or receivers I; 2nd. The combination with an air-tight or hermetically closed filtering vessel and a pipe or tube, for conveying liquid thereto, of one or more perforated tubes or receivers I; 3rd. Combination with a filtering vessel and a force pump or its equivalent, one or more perforated tubes or receivers I; 4th. The perforated tube or receiver I arranged to occupy an elevated position at its base relatively to the bottom of a filtering vessel.

No. 1851. AUGUSTUS J. PLEASANTON, Philadelphia, U. S., 30th November, 1872, for 5 years: "Method of Accelerating the Growth of Plants and Animals." (Manière d'accélérer la croissance animale et végétale.)

Claim.—1st. The method described for utilizing the natural light of the sun transmitted through clear glass, and the blue or electric solar rays transmitted through blue purple or violet colored glass, or its equivalent, in the propagation and growth of plants and animals; 2nd. The described construction of conservatories, and other buildings when the roof, walls or parts thereof, are covered with alternating portions of clear and blue, purple or violet glass or equivalents.

No. 1852. OTIS C. WHITE, Hopkinton, Mass., U. S., 30th November, 1872, for 5 years: "A Dentist's Chair." (Une chaise de dentiste.)

Relates to the mechanism employed for raising, lowering and inclining the seat, foot rest and frame of the chair.

Claim.—1st. The combination of the stationary internal nut-threaded tube B, rotating screw-shaft or spindle N, and sliding sleeve L, the latter encompassing both the tube and spindle; 2nd. The combination with the sliding sleeve L, and its enclosed screw-spindle N, of the clamping-ring R, screw S, and arm or treadle T; 3rd. The combination with the tipping chair frame D, and pivoted seat or seats supporting frame of the bar C, and stop D'; 4th. The combination with the foot-rest I, made adjustable in height, or with reference to the seat or seat-frame of the worm shaft O, segmental gears M', M', and arms L', links K', and foot rest frame H; 5th. The foot rest frame pieces, each made with the side bars H, and arms G, cast in one piece; 6th. The combination with a chair seat to be raised and lowered, a metal spindle F, having a vertical series of gear teeth e, on the spindle the points of the teeth being flush with, or sunk below the outer surface of the spindle, a worm wheel or gear G', engaging the teeth of said spindle, and a worm J, on an actuating shaft H'; 7th. The combination on with the seat frame D, and seat bottom E, of the tipping spindle frame A, seat supporting spindle F, worm wheel G', worm J, and shaft H'; 8th. The combination with the main chair frame D, of a pivoted seat-bottom and a supporting mechanism whereby the seat can be retained in a horizontal position or nearly so when the chair frame is tipped back or inclined.

No. 1853. JAMES C. FRENCH, Chicago, Ill., U. S., 30th November, 1872, for 5 years: "A Vault Light." (Une lampe de cave.)

Consists in the construction of vault lights with double lenses so as to prevent the gathering of moisture and consequent dripping.

Claim.—1st. The lenses B, and D, with the intervening space; 2nd. The combination of the lenses B, and D, with the iron frame A; 3rd. The combination of the ribs e, e, lenses B, and D, and iron plate A.

No. 1854. ROBERT HENEAGE, Buffalo, N. Y., U. S., 30th November, 1872, for 5 years: "Machine for Generating and Purifying Ozone." (Appareil pour produire et purifier l'ozone.)

Claim.—1st. The apparatus for producing and purifying ozone consisting principally of tank-pumps b, valve-chamber c, feed-tank d, feed-pipe e, air-valve F, division-plate G, retort H, supply-pipe I, funnel J, washing-chambers K, K, diaphragm L, exit-chamber M, water supply-pipe S, plunger a, rods b, ropes and chains c, pulley d, over-flow dish e, pump-discharge g, vibrating-fork N, vibrating-pipe i, lugs j, waste-pipe k, air supply-pipe r, cisterns-exit t, cisterns u, exit-pipe v, connecting-pipes 1, 2, 3, 4, and 5, or the equivalents of any of these parts; 2nd. The pumps B, operated by the water used for washing or purifying the ozone for the purpose of producing the air necessary to generate the ozone; 3rd. The method of supplying the pump-barrels with water by means of the automatic vibrating supply-pipe i, with the vibrating tank D, vibrating fork h, the rods f, of the pumps connected and working over the pulley d, and having lugs j, that engage with the vibrating fork h; 4th. The method of supplying water and air to the tank A, by means of the self-acting pumps B, B', with the water-packed plungers a, a', conducting-chamber c, valves j, f, the air valves-pipes F, F', and connecting openings g, g', v, v'; 5th. The method of supplying water and air to the generating and washing chambers by means of the funnel J, air-pipe r, and water pipe s; 6th. The combination with the tank A, and pumps B, B', 6th. The generating vessel or retort H, when constructed of two walls, the outer of metal and the inner of glass, the space between packed or luted with plaster of Paris, or its equivalent; 7th. The construction of the purifying vessels consisting of the lower metallic chamber u, having the perforated plate L, and the upper glass chamber K, separated by the division plate G, and with the connecting openings; 8th. The purifying chambers, the plate L, for breaking the globules and having the perforations for the escape of the gas; 9th. The discharge chamber M, the gas discharge-pipe v, constructed with the flaring mouth and perforated sides and arranged over the pipe 5.

No. 1855. IRA BENTLEY, Howard, Ont., 30th November, 1872, for 5 years: "Machine for Harvesting Beans." (Machine à moissonner les fèves.)

A combination of iron screws and rakes with other mechanism whereby the beans after been cleansed and freed from all extraneous matter are cast off the screens to the ground.

Claim.—1st. The iron screws J, J; 2nd. The iron rakes Q, Q; 3rd. The combination of the screws J, J, and rakes Q, Q; 4th. The combination with the screws J, J, and the rakes Q, Q, of the dog T, the power or drive-wheel S, the rake-frames Qb, the cog-wheels M, and N, the rod V, the pitmen L, L, the projections K, K, the bed-piece F, the lever E, the gauge-wheel-post G, and wheel H, the shovels I, I, and gearing O.

No. 1856. HENRY BOLTON, Elizabethtown, Ont., 30th November, 1872, for 5 years: "A Spring regulating the Friction of Machinery worked

by Animal Power." (Un ressort régulateur de la friction des machines à force animale.)

Consists in the combination (when no cog-wheels are used) of a spring and guide-bar to regulate the amount of friction of the platform on the driving-wheel of dog or other animal powers.

Claim.—A flat spring A, inserted in the friction bar B, controlled in its flexure by a guide-bar C, fastened to the frame of the power, also in the spring and guide-bar as described in combination.

No. 1857. CALVIN H. GOULD, Madrid, N. Y., U. S., 30th November, 1872, for 5 years: "A Bee-Hive." (Une ruche.)

Claim.—1st. A bee-hive, the body or breeding chamber of which is constructed in two sections A and B, the line of division being vertical, and from front to rear; 2nd. Constructing the comb-frames of horizontal upon the bars D, D, and comb-bars E, and end-bars F, the width of the latter being equal with the bars D, D; 3rd. The moveable partition H, fitting between the comb-frames for contracting the working space in the hive; 4th. The moveable slide J, arranged below the observing glass I, and covering a side entrance, in combination with a moveable or hinged side K.

No. 1858. TERENCE SPANHAM, Brockville, Ont., 30th November, 1872, for 5 years: "Composition of Matter for Covering Steam Boilers, etc." (Composition pour couvrir les chaudières à vapeur, etc.)

Claim.—A boiler covering made of a mixture of finely powdered plumbago, soap-stone, and mica with flour or sugar and sufficient water to compose a paste, the mixture of all the ingredients as set forth, the combination of any three or more of them, according to the particular purpose for which the covering is to be used and the degree of heat to which it is to be exposed.

No. 1859. FERDINAND DIECKMANN, Cincinnati, Ohio, U. S., 30th November, 1872, for 10 years: "A Pipe Elbow." (Un coude de tuyau.)

Claim.—A pipe elbow produced by means of a succession of flat crimps or seams B, in the form and manner described. The pipe elbows so constructed as aforesaid being tinned, re-tinned, galvanized or re-galvanized by dipping in zinc, solder, tin or other molten metal so as to coat or re-coat them and thereby give them a better finish and prevent them from leaking.

No. 1860. ALBERT E. EDSON, Hamilton, Ont., 30th November, 1872, for 5 years: "A Sewing Machine Shuttle." (Une navette de machine à coudre.)

Claim.—1st. The arrangement of the circular bearing d, on the top of a shuttle as shown in figs. 1, 2 and 3, constructed at any angle of modification thereof as figs. 6, 7, 8, 9, &c.; 2nd. The arrangement of the perforated face of the shuttle by other one slot p, as shown in fig. 5, or by holes, one or more for the purpose specified; 3rd. The arrangement of the top tension-bar (1), on the top of the shuttle as shown in fig. 2, or its equivalents in the shape of slots or wire; 4th. The arrangement of the hole t, through the top of the shuttle as shown in fig. 4, for threading the shuttle or passing the thread around the bar c; 5th. The arrangement of the opening e, at the back of the shuttle to lighten it, and reduce it in weight; 6th. The arrangement of the above improvements in combination with a solid shuttle or one made in parts.

No. 1861. JOHN WADE, JR., Port Hope, Ont., 2nd December, 1872, for 5 years: "Improvements on Cultivators." (Perfectionnements aux cultivateurs.)

Consists in the mechanism whereby the gauge of the wheels and coulters can be altered and the frame, to which the coulters are attached, raised so as to avoid obstructions, or when it is necessary the cultivator can be moved without using the coulters.

Claim.—1st. The combination of the top frame A, hangers B, and wheels C; 2nd. The coultor-frames G, hinged to the rod H, in combination with the vertical pieces D, cross-pieces E, and braces F; 3rd. The coultor-frames G, loop L, and hoops K, in combination with the pins M, outer cranks N', and centre crank N'.

No. 1862. JOHN H. MILLS, Boston, Mass., U. S., 2nd December, 1872, for 5 years: "A Steam Generator." (Un générateur de vapeur.)

Claim.—1st. A cast iron steam generator composed of one homogeneous casing consisting of the pipes a, b, c, d, e, f, g, and the elevated grate-surface q, erected on the lower water-pipe b; 2nd. A steam generator composed of sections formed each of a single casting, with a fire-space, a grate-bar erected on and elevated above the lower water-pipe, and flanges to form air-pockets, so that when said sections are placed side by side together, the furnace or fire-box elevated grate-surface and air-pockets will be formed without further fitting; 3rd. The air-pockets n, with orifices p, formed in the side walls and between the sections of the generator; 4th. A steam-generator provided with passages, so that the products

of combustion shall first divide and pass laterally, from the furnace into and through combustion-chambers formed on each side thereof, thence upward in rear of the bridge-wall and over the furnace effecting one or more traverses of the entire length of the generator before escaping into the chimney. 5th. The employment of the removable upper or ribbed surface of the grate-bar.

No. 1863. HENRY J. LINGENFELTER, Glen, N. Y., U. S., 10th December, 1872, for 5 years: "A Wood Screw." (Une vis à bois.)

Claim.—1st. In combination with a wood-screw, the leader C, made with the form shown and described terminating at its base with the shaft A, at a point where the screw-thread commences with a sharp-edge, gradually enlarging to the full sized thread, whereby the said leader will steady the screw central and start and lead an opening for the shaft of the screw to follow; 2nd. A wood-screw, the duplex neck C, consisting of the necks C, C', made in the head A, of the screw.

No. 1864. ROBERT DICK, Buffalo, N. Y., U. S., 10th December, 1872, for 15 years: "A Mailing Machine." (Machine à timbrer.)

Relates to the means employed for rendering the cutter stamp detachable. In the removal of the right half of the heavy wick frame, and in the substitution of direct for replex action.

Claim.—1st. The plate b, b, or c, c, with a, a, and its combination with the cutter-stamp and machine; 2nd. The clamp d, d, and its combination with the plate c, c, or b, b, and with the machine; 3rd. The walking beam n, v, and its combination with n, a, and with the machine; 4th. The arm n, a, and its combination with the walking beam n, v, and with the machine.

No. 1865. HENRY J. LINGENFELTER, Glen, N. Y., U. S., 10th December, 1872, for 5 years: "A Carriage Top Support." (Support de soufflet de voiture.)

Claim.—1st. The combination of the supporting arm II. with the prop-block G, 2nd. The combination of the steadying projections e, e, with the prop-block G, and supporting arm II.

No. 1866. WILLIAM S. HUNTER, Stanstead, Que., 10th December, 1872, for 5 years: "Combination Railroad Rails." (Combinaison de rails de chemin de fer.)

Consists in the production of a continuous rail of wood and iron or steel combined and so arranged that if the metal part breaks no accident occurs.

Claim.—1st. The novel combination of the sleepers a, rail b, groove c, web d, rail e, flanges f, bolts and nuts, and chairs k; 2nd. The rail e, with web d, flanges f, in combination with the rail b, groove c, and bolts j; 3rd. The rail b, and sleepers a, in combination with the rail e, web d, and other parts; 4th. The sleepers a, rail b, in combination with rail e, web d, flange n, bolt o, and other parts.

No. 1867. JOSEPH PATULLO, Orangeville, Ont., 10th December, 1872, for 5 years: "Perpetual Draw Lime-Kiln." (Four à chaux à opération continue.)

The furnaces and flues are so arranged as to concentrate the heat towards the centre of the kiln, the interior of the kiln being constructed with four cross division walls, thus forming separate calcining chambers for each furnace.

Claim.—1st. The peculiar arrangement of the division walls E, placed at right angles in combination with the calcining chambers A; 2nd. The flaring shaped furnaces B, placed tangentially towards each other in combination with the cupola; 3rd. The fan shaped grates in combination with the grate bearers; 4th. The introduction of steam vapor under the grates in combination with the ash pits; 5th. The wooden bond timbers J, in connection with the spaces or openings behind each piece of timber; 6th. The expansion hopper M, at the top of the kiln as shown in fig. 3, in combination with the cupola; 7th. The arrangement of the steam boiler K.

No. 1868. HENRY ANSELL, Sherbrooke, Que., 10th December, 1872, for 5 years: "Machine for Sawing Clap-boards." (Machine à scier la planche de lambrissage.)

A setting and regulating apparatus attached to an ordinary clap-board machine causing all the boards to be sawn of uniform thickness.

Claim.—1st. The combination of the wheel A, with the dog D, and the slotted regulator H, with the thumb-nut E, and the standards I, J; 2nd. The slotted lever J, with the slotted bracket M, and the fulcrum pin L; 3rd. The dovetailed edged lever O, the joint P, with the gauge Q, and the screw I.

No. 1869. ALBERT S. HARDY, Guelph, Ont., 10th December, 1872, for 5 years: "Improvements on Melodeons." (Perfectionnements aux mélodéons.)

Relates to a combination of the echo-chambers, causing the tones as they pass from the reeds to be caught and blended.

Claim.—The combination of the chambers or case A, with the stop B, to form the opening C, the openings D, D, and E, E, the partition F and G, the shut or swell H, by the screws I, I.

No. 1870. MICHAEL H. COLLINS, Chelsea, Mass., U. S., 10th December, 1872. (Extension to Dominion of Patent No. 202, New Brunswick.) "An Improved Lamp." (Une lampe perfectionnée.)

Claim.—The application of springs or their flexible equivalents to the inner surface of a lamp chimney, and to the chimney rest or parts connected therewith so that such springs may be supported or held in position by means independent of the chimney, and serve by contact with the internal surface thereof, to steady or support and hold down the said chimney; a lamp cone or air deflector having a flame-passage through it and a thin umbrella-like flange extending from its bottom and around it; a lamp cone or air deflector provided with such a flange and having radial slits or their equivalents therein as a means of supporting, steadying and holding down a glass chimney when applied to a lamp, a combination consisting not only of a device or base for the bottom of the chimney to rest on, and a perforated cone or air deflector, supported over the wick-tube by arms or other proper devices, but a series of flexible springs or a thin flange or its equivalent projecting from or extending around the cone or air-deflector and bearing with friction against the inner surface of the chimney and above its base; a lamp cone or air-deflector made not only with a flame passage and provided with a friction flange to bear against the inner surface of a lamp-chimney, but as having separate from the said flame-passage one or more other air-passages; the combination of the auxiliary supporter S, with the chimney rest and the chimney holding friction-cone or air-deflector arranged as described, and so connected as to be capable of being slipped together with the chimney on and off the wick-tube for the purpose of enabling access to be had to the wick for trimming as occasion may require; the construction and arrangement of a chimney cylindrical in its lower part as explained with the chimney rest, the wick-tube, the chimney holding flange or its equivalent, and a cone or air-deflector supported in position by devices entirely independent of the chimney, the whole being so that the chimney may be held down upon its seat by the flange or its equivalent without any devices directly applied to the seat for such purpose and also that the chimney may be kept at a low temperature so that by a person's hand applied to that part of it which is below the cone it may be readily raised off its holding and supporting devices in order to enable access to be had to the wick at the top of the wick-tube or for any other purpose; in connection with the cylindrical chimney the extension of the perforated or foraminous chimney-rest within the chimney and above the seat thereof, in manner to cause air passing through the said chimney-rest to be direct against the inner surface of the chimney the combination or arrangement of the chimney with the wick-tube, the cone and flange or diaphragm so that the lower cylindrical portion of the chimney or that part which is below the flange may constitute an air-duct leading directly into the cone and having transparent sides or boundary through which light when passing from the flame and underneath the cone may be transmitted over or radiated; the combination of a chimney-rest or supporter for the base of the chimney to rest on with one or more springs supported by the base or devices connected therewith arranged within the chimney and in close proximity with or against its inner surface in connection with the chimney and the cone or air-deflector or the same and its flange the extension of the chimney rest within the chimney so as to reflect through the chimney the rays of light which may fall from the flame upon such rest.

No. 1871. AUGUSTUS GROCHAN, Duluth, Ma., U. S., 10th December, 1872, for 10 years: "A Railway Pump." (Une pompe de chemin de fer.)

Claim.—1st. The combination of a cistern A, floating-piston B, platform G, and pipe L, the floating-piston being prevented from rising to the surface of the water, the water being admitted from the source to the space above the piston and from said space through a check-valve to the space below the piston to be acted on by it; 2nd. A pumping apparatus arranged in connection with a railway track with sections of rails resting on the piston, and coinciding with the rails of the track and with eccentric regulating apparatus to control the application of the weight of the engine or tender for actuating the pump.

No. 1872. JAMES MC. C. DORLAN, Dorlan's Mills, Penn., U. S., 10th December, 1872, for 5 years: "Improvements on Sizing." (Procédé de collage de papier.)

Claim.—1st. A sizing ingredient of chloride of lime or its equivalent, 2nd. Chloride of lime or its equivalent in quantities large or small as a new and essential sizing ingredient or material, and

as a basis or principle in any composition of other sizing ingredients in and for sizing paper stock materials or paper-pulps, to make pulp sized papers, and for sizing any other article that has required or may require degree of a poreless gum-size or of a water-proof character imparted thereto or therein; 3rd. The process of sizing paper stock materials and paper-pulps to make pulp sized papers when chloride of lime or its equivalent, shall compose a constituent part of the composition or mass of other sizing ingredients or materials; 4th. Chloride of lime as a sizing ingredient in combination with resins, soaps, starches oils, tallows, and alams separately or collectively.

No. 1873. GEORGE W. OTIS, LYNN, Mass., U. S., 10th December, 1872, for 5 years: "A Lightning Rod." (Un paratonnerre.)

This invention relates to a method of making lightning rods continuous, of giving them greater surface with more angles of imparting rigidity with a limited quantity of metal and of coupling with them points or branches.

Claim.—The described lightning-rod, consisting of a continuous drawn copper-wire, with feathers or wings disposed around a central core twisted as described and coupled to its points and branches all arranged as a lightning rod.

No. 1874. JOHN S. WHITE, Portland, Me., U. S., 10th December, 1872, for 5 years: "A Brush." (Une brosse.)

Consists in the mode of attaching the filaments or bristles to the head of the brush and in binding the whole brush securely with rigid bands.

Claim.—1st. The novel combination of the head *a*, cement *b*, outer ring *c*, inner ring *f*, and bristles or filaments *e*. 2nd. The outer-ring or band *c*, and inner-ring or band *f*, in combination with the cement *b*, and bristles or filaments *e*.

No. 1875. JAMES H. McRAE, Wolfe Island, Ont., Assignee of Albert S. Shears, St. Louis, Mich., U. S., 11th December, 1872, for 5 years: "An Iron Sled Knee." (Un genou de traîneau en fer.)

Claim.—In securing the knee to the runner by the bolts *c, c*, with screws and square heads, and the bolt or bar *D*, instead of mortising the knee into the runner.

No. 1876. GEORGE HY. PIERCE, Richmond, & GEORGE O. DOAK, Coaticooke, Que., 11th December, 1872, for 5 years: "A Corn Broom with Detachable Handle." (Balais de maïs à manche mobile.)

Claim.—1st. The tapering socket with the tongue fig. 1; 2nd. The pin *a*; 3rd. The handle, fig. 2, tapering at the end with the slot *C*.

No. 1877. ISAAC SHUPE, Newmarket, Ont., Assignee of Welcome J. Burdick, Alfred, N. Y., U. S., 11th December, 1872, for 10 years: "A Rotary Harrow." (Une herse rotatoire.)

Relates to the construction of the hub holding the radial arms to the application of an adjustable weight to a reversible arm carried by a revolving wheel which travels on the circular track of the harrow, and to the application of a secondary roller under the draw-beam.

Claim.—1st. The construction of the hub formed of two parts *A*, and *B* the former cast with a raised central portion *P*, and tube *D*, which passes through a central hole in the latter, and is held unitedly by the bolts *c*, passing through the radial arms *E*. 2nd. The adjustable weight *M* when applied to the reversible arm *L*, carried by the wheel *O*; 3rd. The application of the roller *L*, to the beam *F*, in combination with the roller *H*.

No. 1878. PASCAL P. PRATT, Assignee of Robt. Oliver, Buffalo, N. Y., U. S., 11th December, 1872, for 5 years: "A Pattern for Gear Wheels." (Moule pour la fonte des roues d'engrenage.)

Consists in the longitudinal curvature of the teeth of the wheel, the upper and lower edges of which form circular arcs of equal radius having their centres in the same straight line.

Claim.—1st. A pattern for a curved toothed wheel composed of the cylindrical body *A*, heads *B*, and detachable teeth *c*; 2nd. The process of forming the detachable curved teeth *C* from a hollow cylinder *E*, turned to fit the cylindrical body *A*, whereby the required close and accurate fit of the same upon the cylindrical body is ensured. 3rd. The process of constructing the detachable curved teeth *c*, with tenons, by inserting blocks in the mortises *b*₁, and gluing them to the ends of the cylinder *E*, and afterwards dividing the latter and forming the teeth.

No. 1879. PETER TATRO, JR., Hartford, Conn., U. S., 11th December, 1872, for 5 years: "Process of Treating Petroleum." (Mode de traitement du pétrole.)

Claim.—The process of applying the ingredients, viz: sulphuric acid and dry slaked lime or chloride of lime in about the proportions specified to crude petroleum or its distillate.

No. 1880. JAMES H. OLIVER, Baltimore, Md., U. S., 11th December, 1872, for 5 years: "A Shoe Peg." (Cheville de chaussure.)

Claim.—1st. A wooden shoe-peg, the structure of which is saturated with shoe-maker's wax, or similar adhesive material; 2nd. A wooden shoe-peg, the surface of which is coated with shoe-makers' wax or similar adhesive substance; 3rd. A wooden shoe-peg, having its structure saturated, and its surface coated with shoe-makers wax or similar adhesive material.

No. 1881. ELIZA D. MURFEY, New York, U. S., 11th December, 1872, for 5 years: "Piston Packing." (Garniture de piston.)

Claim.—1st. A packing consisting of a body of impregnated fibre, strands or layers and one or more tubes of rubber; 2nd. The combination in said packing, of tubes or wrappers of felt or its equivalent inclosing the rubber; 3rd. The combination of the strands *a*, each enclosed in a wrapper, and bound or twisted together and inclosed in an impregnated covering *b*; 4th. A packing consisting of the core *A*, rubber *C*, body *B*, and outer covering *a*; 5th. The combination with the tube *c*, (or with the core) of the body *B*, consisting of inner longitudinal or spiral strands and outer strands wrapped round the inner strands and inclosed by a covering.

No. 1882. ANGUS CAMPBELL, Brockville, Ont., 11th December, 1872, for 5 years: "A Towel Hanger." (Un porte-serviette.)

Claim.—The frame *A*, the brackets *B*, roller *C*, and spiral-spring bolt *D*, in combination as described, the whole forming a towel-hanger, in which a wooden-roller *C*, with metal end caps is suspended in cast metal brackets *B*, by spiral spring-bolts, the roller revolving freely on the bolts *D*, and being easily detached from the brackets by withdrawing one of the spring-bolts, the brackets *B*, being fastened to a wooden frame *A*, which frame may be conveniently suspended against a wall by screw-rings *a*.

No. 1883. LEWIS CASS PATTEE & CHESTER M. FAIRBANKS, Lebanon, N. H., U. S., 11th December, 1872, for 10 years: "Improvement in Circular Saw Mills." (Moulin à scies circulaires.)

Claim.—1st. The friction driving-pulley *A*¹, and moveable rail *A*², acting through proper mechanism in combination with the carriage *E*, and set-beams *G*, for automatically feeding the log to and from the saw; 2nd. The combination with the frictional rail *A*³, wheel *A*⁴, carriage *E* and set beam *G*, or equivalents thereof of the gauge-roller *H*¹, for arresting the movement of the log as it is fed to the saw to determine the thickness of material to be cut; 3rd. A circular saw-mill, the combination of the following elements, namely a reciprocating carriage to carry the log backwards and forwards, a frictional mechanism to move the log to and from the saw and a gauge-roller to determine the thickness of material to be cut by the saw, all acting in cooperation with each other and a saw; 4th. The hinged gauge-roller *H*², operated by a screw *E*², and having combined therewith a lip or flange *J*², upon the frame *K*², to prevent any lateral movement of the roller *H*²; 5th. The combination with the lever *m*, and gear *L*, of the double pawl *R*, rod *S*, stirrup ⁴, lever *P*, cam *O*, and rod ⁵, or their equivalents; 6th. The combination with the cam *O*, and lever *P*, of the slotted bearing *Q*; 7th. The combination of the lever *P*, pawl *R*, pivoted to the lever ⁶, and provided with tooth ⁷, the width of the thickness of the wheel *L*, and tooth ⁸, wider and projecting over the cam plate ⁹; 8th. The combination with the gear *L*, and pawl *R*, of the mechanism for disengaging the pawl *R*, from the wheel consisting of the link ⁹, segment lever ¹⁰, and the rod *S*, and the lever operating mechanism; 9th. The combination with the friction-rail *A*³, of the pawl *V*, and friction-roller ¹⁰; 10th. The combination with a setting mechanism of a revolving index-drum *I*; 11th. The revolving index drum operated by a tape *C*, cord *e*, and spring *e*¹¹ or their equivalents.

No. 1884. MARY G. BRIGGS, wife of Evans E. Briggs, St. John, N. B., 13th December, 1872, for 5 years: "Bed and Seat Spring Bottom." (Fond de lit et de siège à ressort.)

A series of removable flat semi-elliptical springs, having S shaped ends entering box staples, secured to the frame by pins. Claim.—1st. The springs *C*, constructed and arranged as set forth, in combination with frame *A*, 2nd. The pins *D*, and staples *B*, in combination with the springs *C*, and frame *A*.

No. 1885. HENRY VAN HOEVENBERGH, Brooklyn, N. Y., U. S., 13th December, 1872, for 5 years: "Printing Telegraph." (Télégraphe imprimant.)

Claim.—1st. An armature wheel revolved by electro-magnets and arrested by either of the electro-magnets when its circuit is not broken, in combination with a type wheel and printing mechanism; 2nd. An electro-motor composed of two electro-magnets, in separate circuits, in combination with a printing-magnet, the helices of which are in the same circuits as the motor-magnets; 3rd. The printing-lever and impression pad, in combination with a holding paw or drawing the paper over the pad by the movement of the printing-lever; 4th. The union mechanism, first operated by the joint action of the two electro-magnets that revolve the type-wheel, and held in operation by either of the magnets as alternately energized; 5th. An electro-magnet with the two helices or coils in separate electric circuits, which circuits are separately employed for different operations but jointly to operate the said electro-magnet.

No. 1886. JAMES ANDERSON, Quebec., 13th December, 1872, for 5 years: "Formation of Spans of Bridges." (Construction des empanns des ponts.)

Claim.—The employment of iron or metallic straps A, B, to support the bottom chords of spans of bridges with prisms J, K, blocks or shoes C, D, saddle pieces F, G, in combination with the straps, to unite the said straps with any kind of spans now in common use

No. 1887. GEORGE J. IVES, Rome, N. Y., U. S., 13th December, 1872, for 5 years: "Combined Horse Hay-rake and Tedder." (Un râtelier à cheval enveloppant le foin.)

Improvement in the arrangement of the crank shaft and tripping mechanism whereby the rake is raised and lowered in combination with a hay tedder attachment having journalled shaft.

Claim.—The foot-lever S, rock-shaft Q, levers R, crank-shaft I, connecting-rod G, notched disks U, pins M, slotted bearings O, springs P, pinions K, gear-wheels L, and wheels B; The combination of the tedder X, tedder-frame Z, connection-bars S₁, S₂, and the driving gears with the truck, and the driving-shaft I, thereof. The combination with the hay rake truck of the attaching devices for the tedder, consisting of the slotted bearing-boxes T, for the shaft U, and the crank-arm P, wrists Q, and binding-nuts R. The combination of runners Y, with the tedder supporting frame and arms pivoted to the truck in advance of the tedder. A truck with devices adapted for the connection of a hay-rake, also devices adapted for the attachment of a hay tedder, and also driving-gear adapted for the operation of both, and a hay-rake and a hay-tedder arranged and adapted to be attached to the said truck and operated by the driving gear thereof. The combination of the catch c, with the foot lever S₁, rock-shaft Q, levers R, and the driving-shaft I.

No. 1888. SAMUEL H. HAYCOCK, Ottawa, Ont., 13th December, 1872, for 5 years: "Projectile for Rifled Gun and Ordnance." (Projectile de canon rayé et d'artillerie.)

Claim.—1st. A parabolical front ended elongated projectile formed with a rear cylindrical portion G, sufficient in length to carry the projectile steady through the bore of rifled guns and ordnance, the equilibrium or centre of gravity of said projectile being at or near the forward part of such portion G; 2nd. Providing the rear end of such projectile with a close fitting plug formed of the conical rear projecting portion B, central frustum portion c, and inner cylindrical end D; 3rd. The cylindrical bore formed in the body A, of the projectile and in combination with the cylindrical portion D, of the plug forming a space or chamber E.

No. 1889. GEORGE B. BOOMER, Syracuse, N. Y., U. S., 13th December, 1872, for 5 years: "Combined Lever and Screw Press." (Presse à levier et à vis combinée.)

Combination of a platten or follower having rigid standards with a double screw shaft so arranged as to keep the co-operative parts of the press true, and to avoid all lateral thrust or strain.

Claim.—The combination of the follower F, braces G, and sliding standard E, sustained in and against the press-frame with the system of toggle-levers, double screw-shaft L, brace and ratchet-wheel P, operating-lever R, and dog o, constructed, arranged and operating together as described.

No. 1890. GEORGE J. EASON, Des Moines, Iowa, U. S., 13th December, 1872, for 5 years:

"Watch-case Spring attachment." (Ajustage de ressort de boîtier de montre.)

Claim.—The improved spring a, and a¹, with the notches cut therein in combination with the sliding or adjustable fasteners C, C, (made in any of the forms illustrated by figures 2, 3, 4, and 5).

No. 1891. CYRUS W. SALADEE, St. Catharines, Ont., 13th December, 1872, for 5 years: "Compound Torsional Springs for Vehicles." (Combinaison de ressort de voiture à torsion.)

Claim.—1st. A torsional spring composed of a single flat plate of steel A; 2nd. A torsional spring composed of two or more plates of steel A, the same being united and working together in union each with the other; 3rd. A torsional spring composed of two or more square or round rods of steel A, the same being united and working together in union each with the other; 4th. In combination with torsional springs, the pinions B, B, and racks E, E.

No. 1892. WILLIAM RAPSON, Woodstock, Ont., 13th December, 1872, for 5 years: "Machine for Cutting and Trimming Rivets and Bolts." (Machine à couper et finir les boulons et rivets.)

Claim.—1st. The construction of the cutting blades or shears B, E and D, F, and the mode of connecting them together by means of the cross or connecting straps V and S, and the pivots P and R; 2nd. The device for operating the cutting blades and increasing the power applied which consists of the two levers A, B, C, D, connected by the cross straps and pivots G, H, as shown, and pivoted to the said cutting blades at B and D; 3rd. The manner of causing the levers A, B, C, D, to move simultaneously by means of the segments X and K, attached one to each lever and engaging with each other by means of cogs or teeth as shown.

No. 1893. EDWARD P. MORONG, Boston, Mass., U. S., 13th December, 1872, for 15 years: "Method of Laying Wood Pavements." (Méthode de poser les pavages en bois.)

Claim.—The method of puddling the foundation bed of wood pavements and of giving to the latter a firm bearing, consisting in applying water to said foundation after the blocks have been laid in position and the channels partly filled with pebbles or gravel, and afterwards ramming said filling and blocks.

No. 1894. HENRY CHISHOLM, Cleveland, Ohio, U. S., 13th December, 1872, for 5 years: "Rolls for utilising Worn and Crop Ends and other parts of Railway T Rails." (Rouleaux pour utiliser les bouts de rails en T écrasés ou relevés.)

Claim.—1st. The rolls A, B, provided with the series or system of grooves of the form or construction described and shown and arranged in relation to each other; 2nd. The rolls A, B, having the series of irregular shaped and graduated grooves of the form or construction shown at a, c, d. 3rd. The described process of utilizing worn-out rails and the tag-ends thereof by rolling them out longitudinally on the flat side, and also on the edge by means of rolls, the head, neck, and foot thereof all being worked out at the same time, but independently of each other, in such way that the different members of the rail do not lap or fold into or upon each other during the process of being reduced into a bar or rod.

No. 1895. GEORGE JONES, Montreal, Que., 13th December, 1872, for 5 years: "A Car-Coupling." (Un attache-char.)

Relates to the means employed for operating the draw pins of the coupling from the side or top of the car.

Claim.—The combination and arrangement of the lever E, arm G, and rod K, when applied to a car for operating the draw-bolt C.

No. 1896. JACOB A. SHERMAN, New York, U. S., 13th December, 1872, for 5 years: "Hernial Trusses." (Bandages Herniaires.)

Claim.—1st. The bar a, made with the lever end f, adapted to be bent to the shape of the body, in combination with the pad b, and strap o or o¹; 2nd. The spring k, and its case extending as straps, and connected at o, in combination with the strap o¹, applied near

the middle of such bow *k*; 3rd. The truss pad *b*, connected to a bar or spring at the end of the strap *p*, passing between the legs, in combination with a spring or bar also connected with said strap and the bar *a*, and waist bolt *o*.

No. 1897. WILLIAM H. NICHOLS, Chatham, Ct., U. S., 13th December, 1872, for 5 years: "A Sleigh-Bell." (Clochette de traîneaux.)

Relates to a nearly spheroidal sleigh-bell made of sheet-metal in two parts and to a fastening for uniting same to the strap. Claim. A sleigh-bell, composed of the two parts *a* and *b*, of sheet metal hardened as described, and united by flanges, *a'*, and *b'*, in combination with a sleigh-bell made in sections *a* and *b*, the former having the flat seat *a'*, provided with two slots, the staple or tie *c*, designed for use as described.

No. 1898. ELI B. RICE, Madison, Wis., U. S., 13th December, 1872, for 5 years: "A Grain Harvester." (Une moissonneuse à grain.)

Consists in the combination of endless rakes with elevating aprons, the two parts being formed of different widths, the narrowest part being placed at the front and operating at greater speed than the rear, and wider parts.

Claim.—1st. The combination of the endless rake-apron with the elevating apron of a harvester, each composed of two or more parts, moving parallel to each other. The front part of each moving at a greater rate of speed than the rear parts; 2nd. In combination with the grain platform and the compound rake-apron, the removable frame *W*; 3rd. In combination with the sickle, the double inclined angular projection *D*; 4th. The arrangement of the laterally swinging binders tables *I*, at each end of the concave *Y*, and the hinged platform *F*; 5th. The binders tables *I*, constructed as described and hung upon uprights *J*, at each end of the concave, by means of the socketed-studs *K*, and brace-rods *L*.

No. 1899. CHARLES BLACKTIN, St. Stephen, N. B., 13th December, 1872, for 10 years: "Method of Heating Buildings." (Méthode de chauffage des batiments.)

By a combination of ordinary stove-pipes and chimneys, one stove is made capable of heating several rooms.

Claim.—The dampers *a*, *a*, and *b*, *b*, in the chimney, and *c*, in the pipe and the passage of the pipe through the chimney, and the complete control of the heat thereby all combined, as shown in the drawing.

No. 1900. HENRY KUHLMANN, Gluckstadt, Holstein, Germany, 13th December, 1872, for 5 years: "A Pegging Machine."

Claim.—1st. The machine for attaching the soles of boots and shoes to the uppers by means of pegs, and composed of slide *A*, and *B*, and its attachments, wood-guide *c*, vertical channel *D*, hammer *E*, with mechanism-guide *H*, slide *K*, shaft *m*, main-shaft *S*, with cams *cc*, upon it, shaft *Z*, the whole adjusted by levers *R*, and *Y*, moved by any suitable power, and constructed, arranged and operating together in combination with each other and other parts of the machine; 2nd. The peg-feeding mechanism consisting of a slide *C*, dove-tailed guide *H*, dove-tail *I*, slide *K*, pin *L*, box *n*, screw *P*, spring *P*, punch *P*, transporting-wheels *P*, and *P*, lever *P*, spring *P*, ratchet-wheel *P*, holder *P*, actuated by disc *K*, lever *K*, and slide *K*, all arranged and operating in combination with bands of hard wood *O*; 3rd. The peg-cutting mechanism consisting of joint *P*, knife *P*, lever *P*, pivoted to slide and levers *P*, and *P*; 4th. Theawl *B*, with cam *H*, on main-shaft *S*, guiding-rod *B*, lever *B*, spring *B*, and catch *B*, all working together and in combination with other parts of the machine; 5th. The hammer *F*, and pin *G*, with cam *T*, guiding-rod *T*, lever-rod *T*, spring *T*, and catch *T*, in combination with channel *D*, and peg *E*; 6th. The lever *V*, with catch *K*, rod *W*, pin *V*, and rod *m*, all working in combination with the slide *c*; 7th. The disc *S*, on shaft *S*, with cam-groove on its periphery-lever *S*, slide *S*, crank-lever *M*, and rod *M*, all working in combination with slide *c*, and other parts of the machine; 8th. The combination of the cam *S*, levers *S*, and *S*, rods *M* and *M*, and pinners *X*, all arranged and working in combination with the slide *c*, and other parts of the machine; 9th. The combination of the support for boot or shoe *A*, slide *A*, plane *A*, and lever *Y*, working in combination with other parts of the machine; 10th. The rod *Z*, connected to crank-pin on wheel-lever *Z*, shaft *Z*, cam-wheel *Z*, lever *Z*, ratchet and pawl *Z*, and spindle *Z*, working in combination with support *A*, and slide *A*; 11th. The toothed wheel *W*, toothed-wheel *W*, with cam-disc pivoted-lever *W*, slide *W*, head *W*, and roller *W*, all working together and with other parts of the machine.

INDEX OF INVENTIONS.

Abdominal supporter, M. G. Briggs..... 1708
Air compressor, J. S. Patric..... 1832
Apple parer, H. J. Wattles..... 1706
Auger budding machine, W. A. Ives..... 1735
Barrel, H. Willard..... 1770
Beehive, C. H. Gould..... 1857
Beehive, S. Pettet..... 1812
Bending machine, A. F. Marshall..... 1715
Blind hinge, A. Hupper..... 1771
Boller, a feed for, R. Berryman..... 1767
Boller, a supply water for, W. E. Prall..... 1830
" direct acting valve for, A. F. Blake..... 1840
" a composition for, T. Sparkam..... 1868
Bolt cutting machine, W. H. Lawrie..... 1713
Bolt trimmer, W. Rapson..... 1892
Boots, Pegging machine for, H. Kuhlman..... 1900
Boots, Peg for, J. H. Oliver..... 1880
Bottom for bed & seat, M. G. Briggs..... 1884
Bridges, J. Anderson..... 1886
Broller, J. T. Page..... 1811
Brooms, G. H. Price..... 1776
Brushes, J. S. White..... 1871
Butter packing, J. R. Collet..... 1718
Carbonate of Soda, J. Young..... 1837
Car Coupling, W. H. Skidmore..... 1702
" A. Wilson..... 1799
" G. Jones..... 1895
Carpets &c., Hing for, J. R. Harrington..... 1727
Carriage support, H. J. Lingenfolter..... 1865
Car spring, T. R. Timby..... 1776
Caster attachment, G. R. Proctor..... 1817
Castor oil, T. Copland..... 1782
Chair and ladder, B. F. Green..... 1831
Check ticket, T. A. Jebb..... 1726
Churn, C. V. Holmes..... 1704
Chutes, adjustable, J. Abell and A. D. Cole..... 1807
Cigar bunches, making, S. Schofield..... 1827
Clasp for elastic tube, E. A. Day..... 1787
Cloth cutting, J. Fenno and P. Holmes..... 1699
Clothes drier, J. S. Williamson..... 1761
" A. H. Hill..... 1679
" M. S. Smith..... 1791
" G. W. Page..... 1818
" Wringer, A. Burbank..... 1773
Cocks, J. Maclaren..... 1774
" J. E. Boyle..... 1785
Coffee roaster, D. T. Gale..... 1761
Compasses, S. W. Cooke..... 1794
Cooking utensil, W. Bollard..... 1841
Cultivator, J. Wade..... 1861
Curtain fixture, F. B. Scott..... 1708
" roller, R. S. Jarvis..... 1656
Curved tubes, making, W. T. Farre..... 1810
Dental plate, J. Yemen..... 1685
Dentist chair, O. C. White..... 1852
Desk for school, B. N. Hemenway..... 1730
Die for screw threads, J. J. Grant..... 1765
Dipper, J. T. Page..... 1796
Disinfecting compound, H. A. Tilden..... 1665
Dough mixers, W. E. Damant..... 1821
Dummy for closing gates, C. W. Saladee..... 1649
Dust preventor, J. Welby..... 1755
Eggs, preserving, A. R. Davis..... 1775
Fat, melting, W. Hartley..... 1792
Fibrous treating substances, T. Routledge..... 1677
File cutting machine, A. Weed..... 1732
Filtering apparatus, T. R. Sinclair..... 1850
Fluid, a burning, W. P. Smith..... 1661
Foot stove, D. D. Pennoyer..... 1814
Fuel, artificial, J. Lodge..... 1689
Furnace, W. B. Geddes..... 1804
" hot air, W. H. Harris..... 1838
" W. H. Turner..... 1692
Gas, H. B. Myer..... 1781
Gate, C. W. Saladee..... 1648
Gear wheels, patterns for, R. Oliver..... 1878
Glass blower molds, S. R. Bowie..... 1742
Goring, elastic, C. Winslow..... 1806
Grates, J. Smith..... 1746
" Revolving, J. Caven..... 1777
Grindstones, J. L. Abell..... 1772
Ham and bacon, J. Atkinson..... 1780
Harrow, W. J. Burdick..... 1877
Harness, A. W. Lawton..... 1751
Hat, reversible, S. Wilks and J. E. Dow..... 1701

Harvester, J. Fréchette.....	1700	Refining apparatus, E. F. Prentiss.....	1660
Harvester, E. B. Rice.....	1898	Reflector, J. Rippon.....	1779
" bean, J. Bentley.....	1855	Rifle projectile, H. S. Haycock.....	1888
Harvesting machine, W. A. Kirby.....	1700	Road scraper, D. E. Teal.....	1088
Hay press, P. R. Dederick.....	1667	Roofing, floors &c., composition for, J. R. Griffin.....	1731
Heating apparatus, C. Blacktin.....	1899	" process for, E. Burnham.....	1808
Heel attaching machine, H. H. Bigelow.....	1675	Salt apparatus, S. D. Gilson.....	1797
" compressing.....	1714	Sash fastener, J. C. Hanna.....	1833
" metallic, J. R. Ryerson.....	1703	Saw set, D. Jones.....	1695
" of socks, W. Bamford.....	1724	Saw sharpener "Extension", E. B. Rich.....	1822
Hoist for cars &c., &c., G. T. Nutter.....	1737	Saw sler, G. Mulloy.....	1098
Ink, J. W. Carter.....	1844	Sawing clapboards, H. Ansell.....	1869
Iron process, P. E. Jay.....	1676	Saw mill circular, L. C. Pattee and C. M. Fairbanks.....	1883
".....	1682	" machinery, C. K. Ely.....	1849
Jack, a lifting, T. Maxon.....	1668	Screw threads, drilling and cutting, J. J. Grant.....	1741
Kiln, a lime, J. Pattullo.....	1807	Seat, adjustable, B. N. Hemenway.....	1728
King bolt, J. B. Armstrong.....	1652	Separator, W. H. Sherman.....	1793
Ladder and chair, B. F. Green.....	1831	Sewing machine, W. S. Mead.....	1845
Lamp, T. Simmons.....	1603	" J. Jameson.....	1655
Lamp, H. H. Collins.....	1870	" D. Mc. Smyth.....	1681
" hydro carbon vapor, W. S. Mead.....	1705	" thread cutter for, J. H. Henderson.....	1815
Lightning rod, G. W. Otis.....	1873	" feed, D. Mc. Smyth.....	1711
Light for vault, J. C. French.....	1853	" loom shuttle, F. O. Tucker.....	1720
Lock, G. H. Peacock.....	1678	" shuttle, A. E. Edson.....	1860
Lubricating compound, B. French.....	1825	" " T. Henderson.....	1813
Lubricating device, C. W. Harvey.....	1766	" " carrier, C. Z. O'Neill.....	1816
Lubricator, a self-acting, C. H. Parshall.....	1616	" " slide, J. D. Lawlor.....	1809
Mailing machine, R. Dick.....	1864	" silent, C. J. Appleton.....	1820
Manure cart, T. E. Chamberlin.....	1747	" threader, J. H. Henderson.....	1828
Marble, artificial, G. Davoy.....	1711	" treadle, F. E. Mills.....	1778
Mast of ships, E. C. Seely.....	1670	" treadle, J. H. Osborn.....	1834
Mattress, E. L. Bushnell.....	1716	" tuck marker, A. Howie.....	1719
" &c., filling for, J. L. Kendall.....	1725	Shoe clasp, A. M. Farley.....	1694
Melodeon and organ, A. S. Hardy.....	1869	Sizing, J. McC. Dorlan.....	1872
Middlings separators, E. N. Laerolx.....	1739	Sled knee, A. L. Shears.....	1875
Milk pans, R. Smith.....	1819	Sleigh bell, W. H. Nichols.....	1897
Milk stone dresser, F. A. Hoyt.....	1812	" studded, H. Smith.....	1723
Mitre box, R. G. Welford.....	1690	Smut mill, B. T. Trimmer.....	1698
Molds, stereotype, A. Chase.....	1672	Sole, metal, M. Goldman.....	1769
Motor, mechanical, N. T. Worthley.....	1762	" attaching, T. H. Dodge.....	1709
Mowing machine, tilting motion for, W. Smith, A. Reklce and C. H. Jay.....	1630	Spark consumer for boiler, G. H. Griggs.....	1750
Mowing machine, tilting motion for, A. Reckle.....	1817	" " C. F. Pike.....	1756
Nail machine, A. H. Caryl.....	1803	" ".....	1748
" horse shoe, T. H. Fuller.....	1757	Spring, torsinal, C. W. Saladee.....	1650
" ".....	1758	" for animal power, H. Bolton.....	1856
" ".....	1759	" seat for wagon, F. N. Steigmeyer and A. Reichert.....	1673
" " A. H. Caryl.....	1802	" square rod torsinal, C. W. Saladee.....	1651
Needles, polishing, F. W. Mallett.....	1763	" torsinal.....	1654
Oakum, F. H. Dunham.....	1784	" ".....	1891
Organ, J. Thornton.....	1717	Stair pad, E. H. Bailey.....	1667
Organ and melodeon, A. S. Hardy.....	1869	Steam generator, J. H. Mills.....	1862
Oven, Baker's, D. McKenzie.....	1835	".....	1829
Ozone generator, R. Heneage.....	1851	Stone board, J. S. Brooks.....	1800
Pail cover, C. C. Post.....	1729	" cutting machine, H. and J. L. Young.....	1710
Paint, S. A. Gilman.....	1845	Stove for coal oil, J. H. Thorp.....	1696
Paste flattening machine, W. E. Damant.....	1823	" and furnace pipe, T. S. Sarney.....	1666
Pavement, C. Storer.....	1745	" pipe elbow, C. & H. S. Hoeller.....	1691
" W. W. Ballard.....	1722	" " G. W. Howell.....	1801
Pavement laying, E. P. Morong.....	1893	" platform, W. Westlake.....	1687
Petroleum process, P. Tatro.....	1879	Straw carrier, A. Kline.....	1805
" treating, J. Young.....	1836	Tanners' rinsing wheel's pin, P. Lull.....	1707
" vessels for transporting, W. C. Warden.....	1736	Tanning process, G. P. Codman.....	1738
Pipe elbow, metal, F. Dieckman.....	1859	" J. Peters.....	1749
Piston packing, E. D. Murfey.....	1881	Telegraph insulator, C. H. Pond.....	1671
Plants, accelerating growth of, A. J. Pleasontot.....	1851	" printing, H. Van Holvenbergh.....	1885
Plough gang, B. W. Walton.....	1843	Tobacco, packing, J. D. Robertson.....	1659
Plough guide, "Extension", J. Marr.....	1821	Tools for household, H. R. Ives.....	1684
Poke, horse, T. Ney.....	1848	Towel hanger, A. Campbell.....	1882
Post driver, D. E. McFarland.....	1658	Trap, animal, J. Krummenauer.....	1744
Power, horse, J. L. Strong.....	1721	Truss, N. Jones.....	1662
" transmitter, E. G. Willey.....	1683	" J. A. Sherman.....	1896
" wind, O. T. Springer.....	1754	Vegetable cutter, R. George.....	1786
Press, lover screw, G. B. Boomer.....	1889	Washing machine, N. T. Worthley.....	1753
Printing press, G. B. Gordon.....	1789	" F. X. Vandandaigne dit Gadbols.....	1734
" steam, J. Levey.....	1733	" J. Faber.....	1788
Propeller for sleigh, buggy &c., J. Allan.....	1697	" C. Demers.....	1839
Pulverizer, J. Foster.....	1783	" attachment, V. Dugas.....	1702
Pump, A. Grochan.....	1871	Washer for nuts, J. Purdie, administrator.....	1740
Rail joint, H. William.....	1795	Watch case, G. L. Eason.....	1890
Railroad Rail, W. S. Hunter.....	1866	Water wheel, O. Bryant.....	1674
Rails, utilising worn, H. Chisholm.....	1892	Water wheel, C. Barber.....	1743
Railway truck, C. D. Tisdale.....	1660	Well point, D. E. McFarland.....	1846
" brake, T. O. Ward.....	1647	Window frame, J. W. Harris.....	1693
Rake, horse, C. M. Titus and L. Mood.....	1700	Wood screw, H. J. Lingenfelter.....	1863
" G. L. Ives.....	1887		
" hay, G. Sweet.....	1686		
" sweep, J. Collins.....	1653		
Razor strop, O. B. Howard.....	1826		

INDEX OF PATENTEES.

Abell J. L., grindstones.....	1772	Gilson S. D., salt apparatus.....	1797
Abell L., assignee, water wheel.....	1674	Goldman M., metal soles.....	1760
Abell & A. D. Cole, adjustable chutes.....	1807	Gordon G. P., printing press.....	1789
Allan J., sleigh and buggy propeller.....	1697	Gould C. H., beehive.....	1857
Anderson J., bridges.....	1886	Grant J. J., die for screw heads.....	1765
Ansell H., sawing clapboards.....	1808	" " cutting screw threads.....	1741
Appleton C. J., silent sewing machine.....	1820	Green B. F., chair and ladder combined.....	1831
Archibald W. T., assignee, middlings separators.....	1739	Griffin J. K., roofing composition.....	1731
Armstrong J. B., spring king bolt fastening.....	1652	Griggs G. H., spark consumer for boilers.....	1750
Atkinson J., ham and bacon.....	1780	Grochan A., pump.....	1871
Balley E. H., stair pad.....	1607	Hanna J. C., sash fastener.....	1833
Ballard W. W., pavements.....	1722	Hanson G. C., assignee, foot stove.....	1814
Bamford W., heels of socks.....	1724	Hardy A. S., organ and melodeum.....	1869
Barber C., water wheel.....	1743	Harrington J. R., making carpet lining.....	1727
Bentley J., bean harvester.....	1855	Harris J. W., window frame.....	1663
ryman R., feed for water boilers.....	1767	Harris W. H., hot air furnace.....	1838
low H. H., heel attaching machine.....	1675	Hartley W., melting fat.....	1792
" " heel compressing machine.....	1714	Harvey C. W., lubricating device.....	1760
Blackitt C., heating apparatus.....	1899	Haycock S. H., rifle projectile.....	1888
Blake G. F., valves for engines.....	1840	Henderson T., sewing machine shuttle.....	1813
Bollard W., cooking utensils.....	1841	Henderson J. H., thread cutter for sewing machine.....	1816
Bolton H., spring for animal power.....	1856	Henderson J. H., sewing machine threader.....	1828
Boomer G. B., lever screw press.....	1839	Heneago R., ozono generator.....	1854
Bowle S. R., glass blowers' mold.....	1742	Hemenway B. W., adjustable seat.....	1728
Boyle J. E., cocks.....	1785	" " school desk.....	1730
Bradford H., assignee, stereotype molds.....	1672	Herbert O. C., assignee, lamp.....	1663
Briggs M. G., bottom for bed, seats.....	1834	Hill A. H., clothes drier.....	1670
Briggs G. W., abdominal supporter.....	1768	Haecker C. & H. S., stove pipe elbow.....	1691
Brooks J. S., stove board.....	1800	Holmes C. P., churn.....	1704
Bryant O., water wheel.....	1674	Howard O. B., razor stop.....	1826
Burbank A., clothes wringer.....	1773	Howe P. & J. Fenno, cloth cutting machine.....	1699
Burdick W. J., narrow.....	1877	Howell G. W., stove pipe elbow.....	1801
Burnham E., roof, process.....	1808	Howie A., tuck marker for sewing machine.....	1719
Bushnell E. L., mattresses.....	1716	Hoyt F. A., mill stone dresser.....	1812
Campbell A., towel hanger.....	1882	Huffer A., blind hinge.....	1771
Campbell A. D. & J. McKenzie, assignees, tanning process.....	1749	Hunter W. S., railroad rail.....	1866
Carter J. W., ink.....	1844	Ives G. L., horse rake.....	1887
Caryl A. H., punching nails.....	1802	Ives H. R., household tools.....	1684
Caryl A. H., nail machine.....	1803	Ives W. A., auger heading machine.....	1735
Caven J., revolving grates.....	1777	Jamleson J., sewing machine.....	1655
Chamberlin T. E., manure cart.....	1747	Jarvis R. S., curtain roller.....	1656
Chisholm H., rolls for utilizing worn rails.....	1894	Jay C. H., W. Smith & A. Reckie, mowing machine tilting motion.....	1680
Codman G. B., tanning process.....	1738	Jay P. E., iron process.....	1676
Cole A. D. & J. Abell, adjustable chutes.....	1807	" " cast iron process.....	1682
Collet J. K., packing butter.....	1718	Jebb T. A., check for tickets.....	1726
Collins J., sweep rake.....	1653	Jones D., lever saw set.....	1695
Collins M. H., lamp.....	1870	Jones G., car coupling.....	1895
Cooke S. W., compasses.....	1794	Jones N., truss.....	1662
Copland T., castor oil.....	1782	Kasson C. V., assignee, hot air furnace.....	1838
Damant W. E., dough mixers.....	1821	Kendall J. L., filling for mattresses, &c.....	1725
" " paste flattening machine.....	1823	Kirby W. A., harvesting machine.....	1700
Davey G., artificial marble.....	1711	Kline A., straw carrier.....	1805
Davis A. R., preserving eggs.....	1775	Krummenauer J., animal trap.....	1744
Day E. A., clasp for elastic tube.....	1787	Kuhlman J., pegging machine.....	1900
Dean S., assignee, mill stone dresser.....	1812	Lacroix N., middlings separator.....	1789
Dederick P. K., hay press.....	1657	Laurie W. H., bolt cutting machine.....	1713
Demers C., washing machine.....	1839	Lawlor J. D., sewing machine shuttle slide.....	1809
Dick R., malling machine.....	1864	Lawton A. W., harness.....	1751
Dieckmann F., metal pipe elbow.....	1859	Levey J., steam printing press.....	1733
Doak G. O., assignee, brooms.....	1876	Libbey H., assignee, glass blowers' molds.....	1742
Dodge T. H., attaching soles of boots.....	1709	Lingenfelter H. J., carriage support.....	1865
Dorlan J. McC., slaug.....	1872	" " wood screw.....	1863
Dow J. E. & S. Wilks, reversible hat.....	1701	Lodge J., artificial fuel.....	1689
Dugas V., washing machine attachment.....	1702	Lull P., pin for tanners' rinsing wheels.....	1707
Dunham T. H., oakum.....	1784	Maclaren J. G., cocks.....	1774
Eason G. L., watch case.....	1890	Mallett F. W., polishing needles.....	1763
Edson A. E., sewing machine shuttle.....	1860	Marr J., plough guide "Extension".....	1821
Ely C. R., saw mill machinery.....	1849	Marshall A. F., bending machine.....	1715
Enens J., assignee, abdominal supporter.....	1768	Maxton T., lifting jack.....	1668
England J., cradle.....	1661	McFarland D. E., post driver.....	1665
Fairbanks C. M. & L. C. Pattee, circular saw mill.....	1833	" " well point.....	1748
Fargo F., lubricating device.....	1766	McKenzie D., bakers' over.....	1835
Farley A. M., shoe clasp.....	1691	McKenzie J., & A. D. Campbell, assignees, tanning process.....	1749
Favre W. T., making curved tubes.....	1810	McRae J. H., assignee, sled knee.....	1875
Fenno J. & P. Howe, cloth cutting machine.....	1699	Mead W. S., sewing machine.....	1645
Foster J., pulverizer.....	1783	Mead W. S., hydro carbon vapor lamp.....	1705
Frechette, harvester.....	1760	Mills F. E., sewing machine treadle.....	1778
French B., lubricating compound.....	1825	Mills J. H., generating steam.....	1829
French J. C., vault light.....	1853	" " steam generator.....	1862
Fuller T. H., horse shoe nail machine.....	1757	Molloy G., saw filer.....	1698
" " horse shoe nail machine.....	1758	Mood L. & C. M. Titus, horse rake.....	1790
" " nail punching machine.....	1759	Morong E. P., pavement laying.....	1893
Gale J. D., coffee roaster.....	1761	Morse G. D., assignee, melting fat.....	1792
Geddes W. B., furnace.....	1801	Murphy E. D., packing piston.....	1881
George R., vegetable cutter.....	1786	Myer H. B., gas.....	1781
Gilman S. A., paint.....	1845	Ney T., horse poke.....	1848
		Nichols W. H., sleigh bell.....	1897
		Nutter G. T., hoist for cars.....	1737

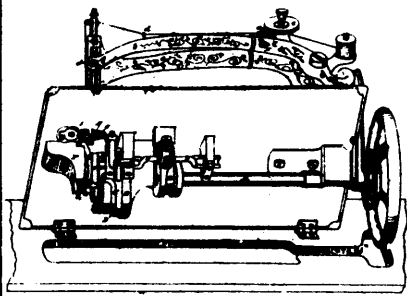
THE
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

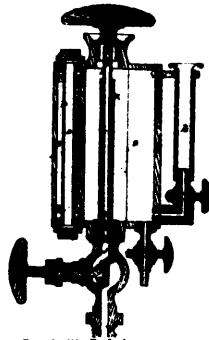
Vol. I.

MARCH, 1878.

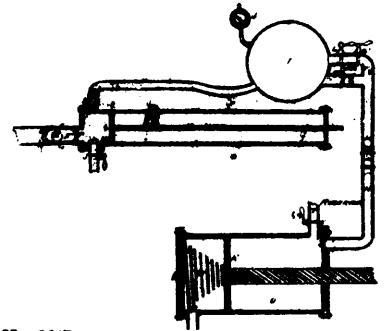
No. 1.



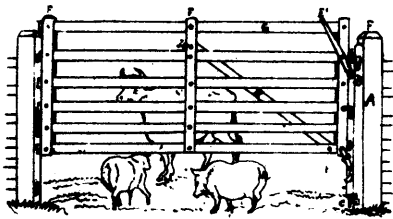
No. 1645. Mead's Sewing Machine.



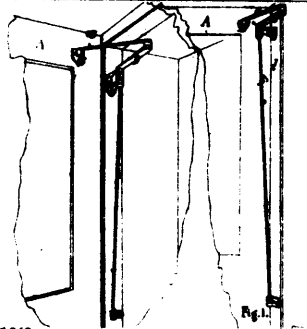
No. 1646. Parrhall's Lubricator.



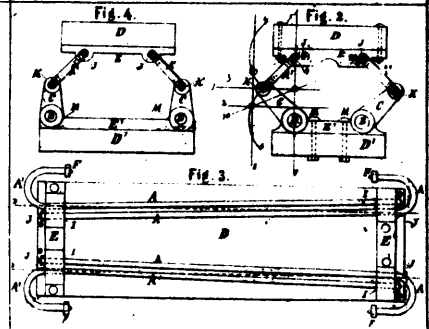
No. 1647. Ward's Railway Brush.



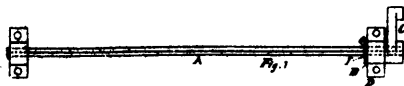
No. 1648. Saladee's Gate.



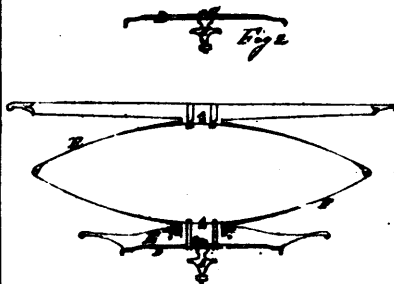
No. 1649. Saladee's Door and Gate Spring.



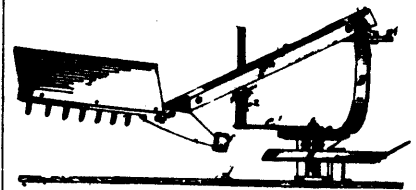
No. 1650. Saladee's Springs for Vehicles.



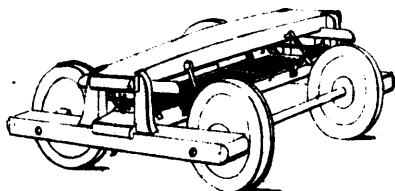
No. 1651. Saladee's Springs for Vehicles.



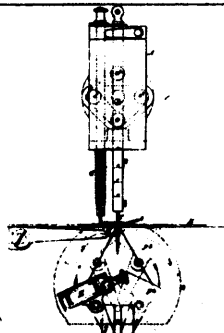
No. 1652. Armstrong's Improvements in Carriages.



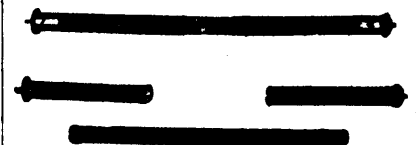
No. 1653. Collins' Improvements on Harvest Racks.



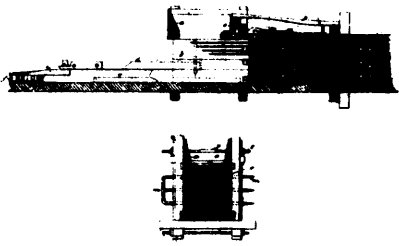
No. 1654. Saladee's Springs for Vehicles.



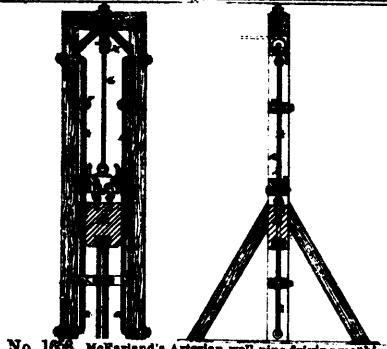
No. 1655. Jamieson's Sewing Machine.



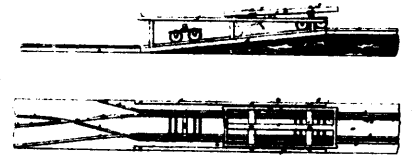
No. 1656. Jarvis' Adjustable Window Curtain Roller.



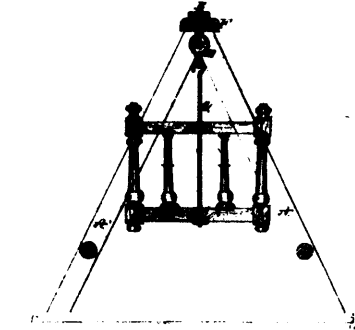
No. 1657. Dederick's Hay Press.



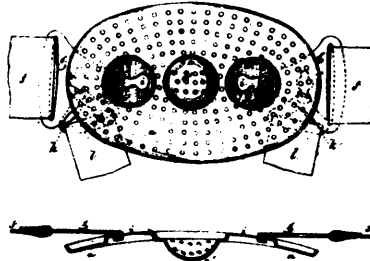
No. 1658. McFarland's Artesian well-pipe-driving machine.



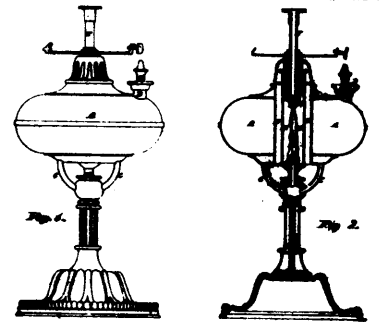
No. 1660. Tisdale's Apparatus for changing the Trucks of Railway Cars.



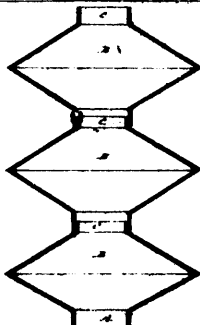
No. 1661. England's Cradle.



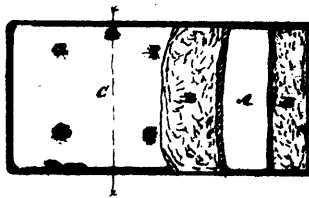
No. 1662. Jones' Truss.



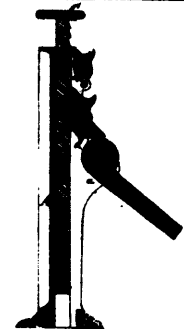
No. 1663. Herbert's Safety Lamp.



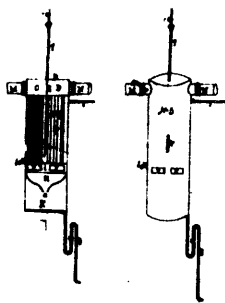
No. 1666. Sarney's Stove and Furnace Pipe.



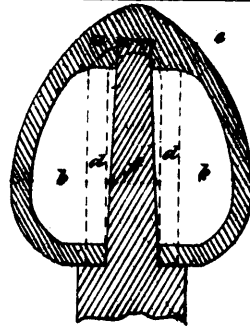
No. 1667. Bailey's Stair Pad.



No. 1668. Maxon's Lifting Jack.



No. 1669. Premier's Alcohol Refining Apparatus.



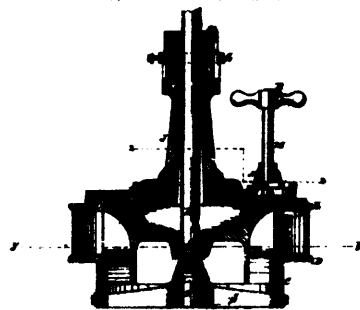
No. 1670. Seely's Mast Ball.



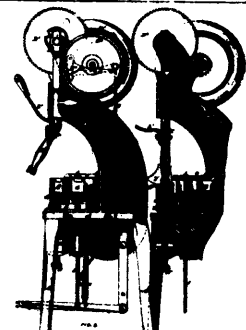
No. 1671. Pond's Telegraph Insulator.



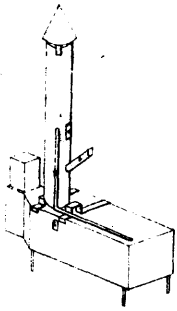
No. 1673. Stelmeyer's Seats for Waggon, Cars, &c.



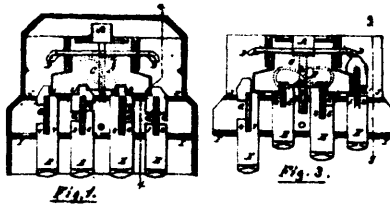
No. 1674. Abell's Improvement in Water Wheels.



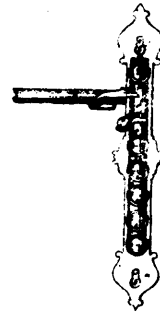
No. 1675. Biglow's Machine for heating Boots and Shoes.



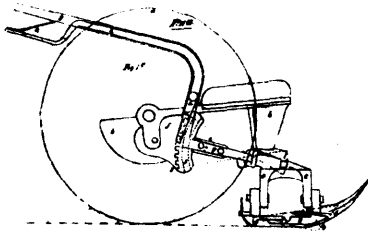
No. 1676. Jay's Process of making wrought iron from cast iron.



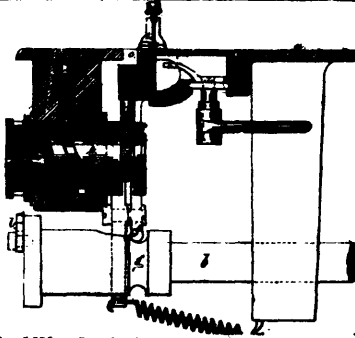
No. 1678. Fenwick's Keyless Lock.



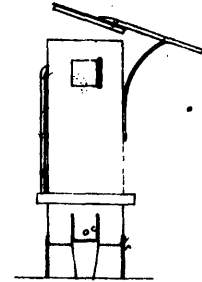
No. 1679. Hill's Clothes Drier.



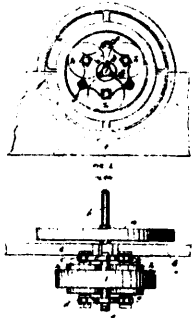
No. 1680. Smith's, et al., Improvement on the "Sprague Mower."



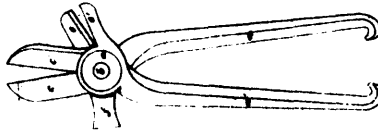
No. 1681. Smyth's Improvements in Sewing Machines.



No. 1682. Jay's Process for making cast iron from ore and machine for same.



No. 1683. Willey's Machine for transmitting power.



No. 1684. Ives' Combined Household Tools.

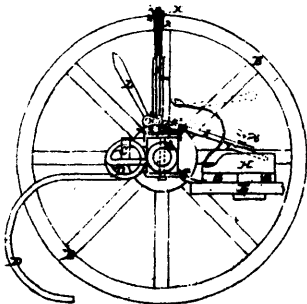


FIGURE 2

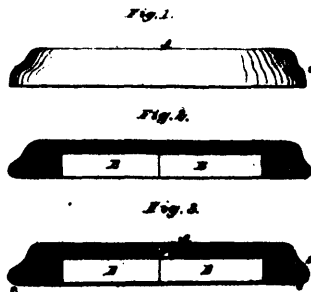


FIGURE 3

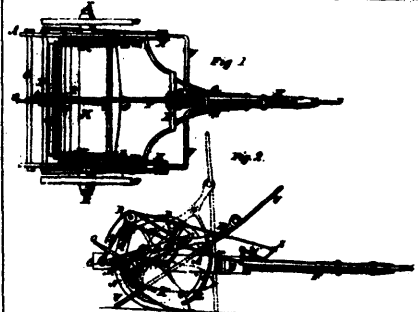
No. 1685. Yeman's Dental Plate.



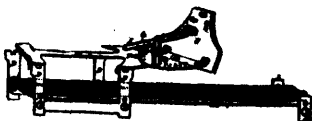
No. 1686. Sweet's Horse Hay Rake.



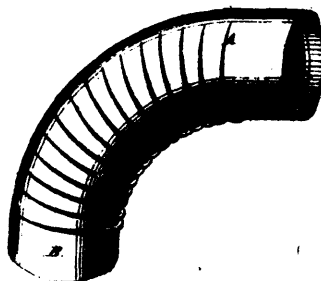
No. 1687. Westlake's Stove Platform.



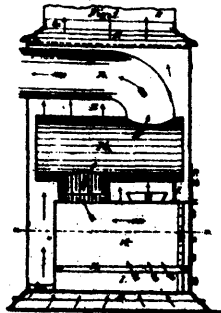
No. 1688. Teal's Road Scraper.



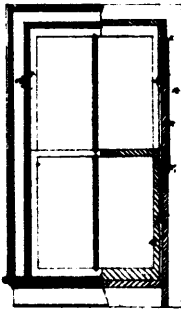
No. 1690. Weisford's Miller Box.



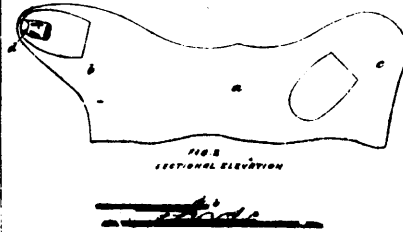
No. 1691. Hoeller's Stove-pipe Elbow.



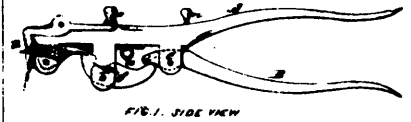
No. 1692. Turner's Warm Air Furnaces.



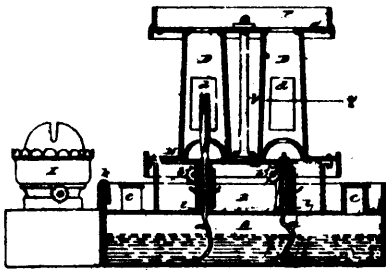
No. 1693. Harris' Window Frame.



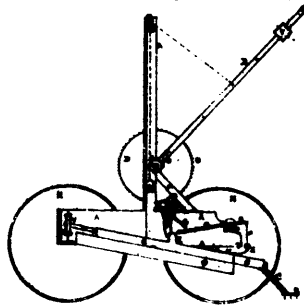
No. 1694. Farley's Shoe Clasp.



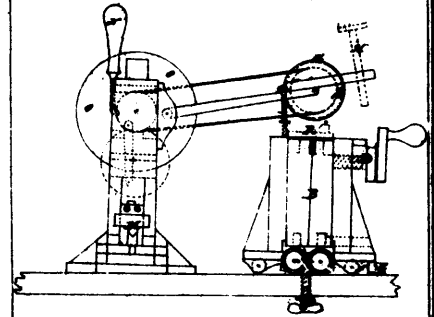
No. 1695. Jones' Saw Set.



No. 1696. Throp's Coal Oil Stove.



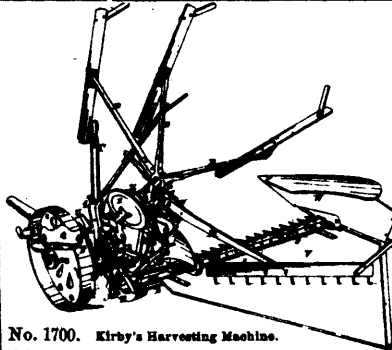
No. 1697. Allan's Carriage Propeller.



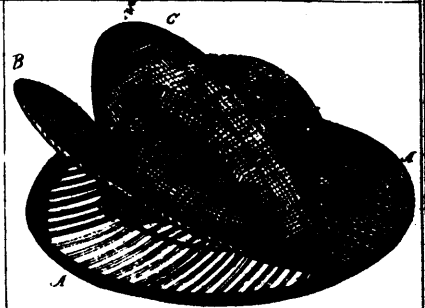
No. 1698. Molloy's Machine for filing and setting Saws.



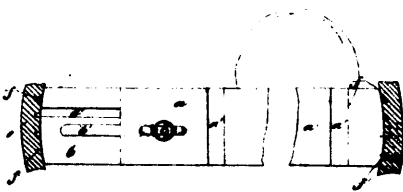
No. 1699. Fanno's, et al., Cloth Cutting Machine.



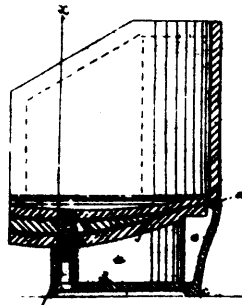
No. 1700. Kirby's Harvesting Machine.



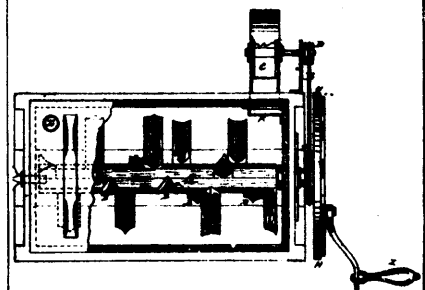
No. 1701. Wilks', et al., Reversible Hat.



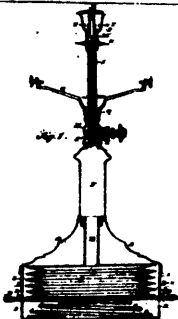
No. 1702. Dugas' Improvement on Washing Machines.



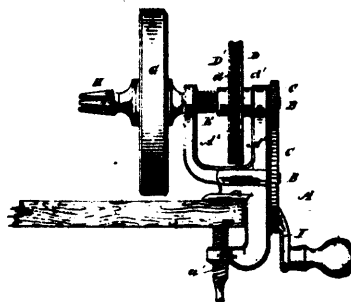
No. 1703. Byerson's Metallic Boot and Shoe Heel.



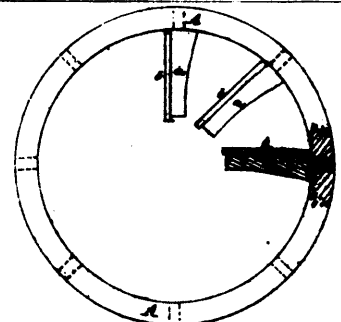
No. 1704. Holmes' Churn.



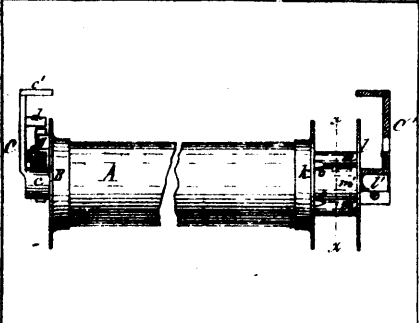
No. 1705. Mead's Hydro-carbon Vapor Lamp.



No. 1706. Wadlow's Machine for polishing knives and paring apples.



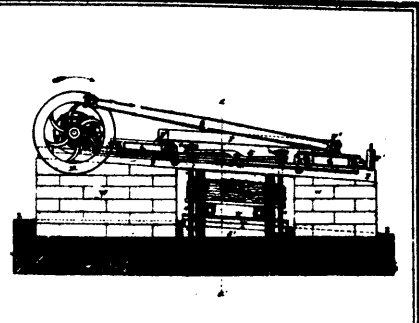
No. 1707. Lull's Improved pin for tanners rinsing wheels



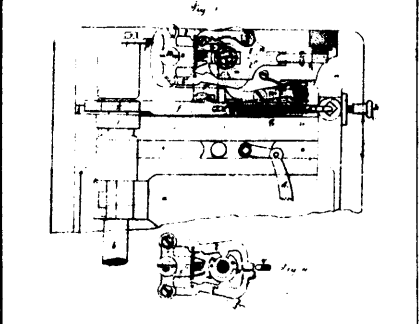
No. 1708. Scott's Curtain Fixture.



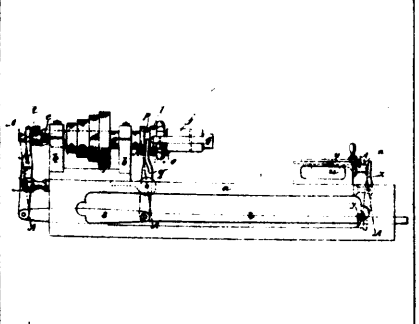
No. 1709. Dodge's Improvements on Boots and Shoes.



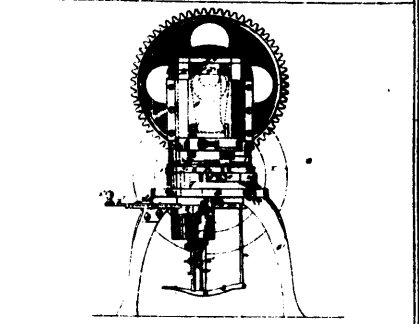
No. 1710. Young's Stone-Cutting Machine.



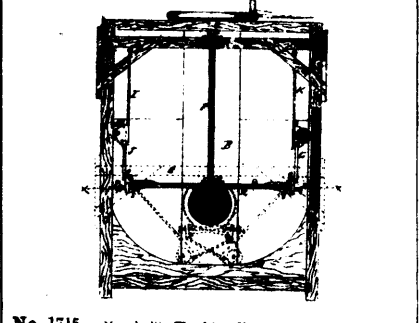
No. 1711. Smith's Improvement on Sewing Machines.



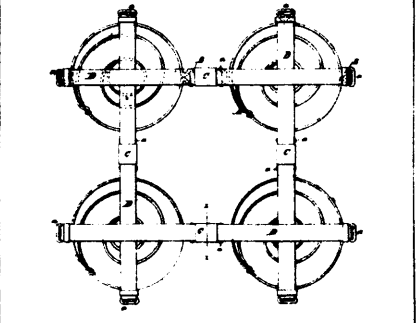
No. 1713. Laurie's Bolt Cutting Machine.



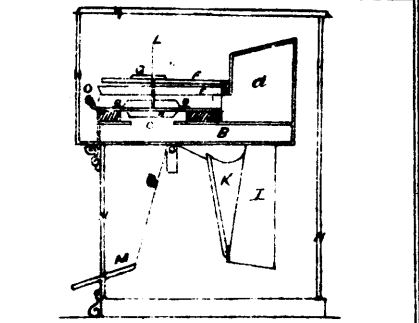
No. 1714. Biglow's Boot and Shoe heel compressing machine.



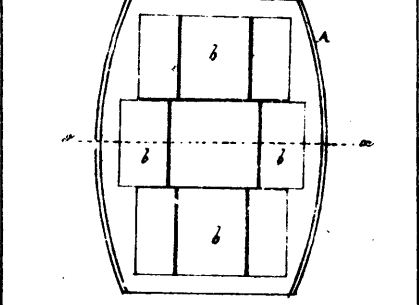
No. 1715. Marshall's Wood bending machine.



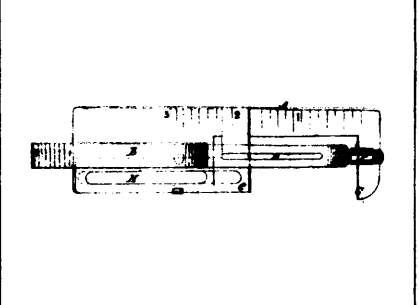
No. 1716. Bushnell's Improvements in Spring Mattresses.



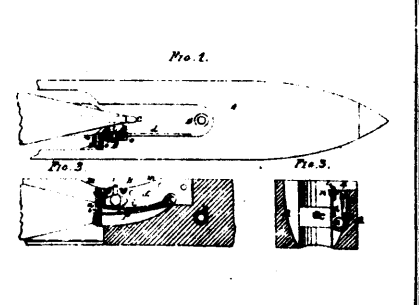
No. 1717. Thurston's Improved Cabinet Organ.



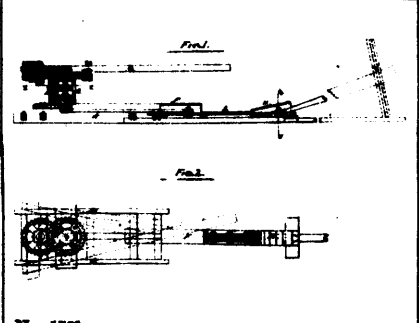
No. 1718. Collett's Process of packing and preserving butter and an apparatus therefor.



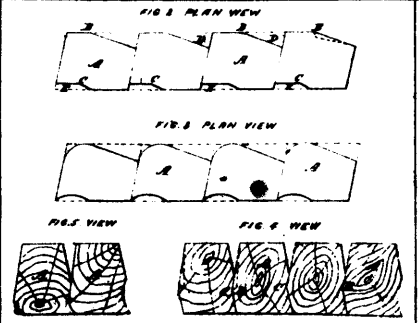
No. 1719. Howe's Improvements in Sewing Machines.



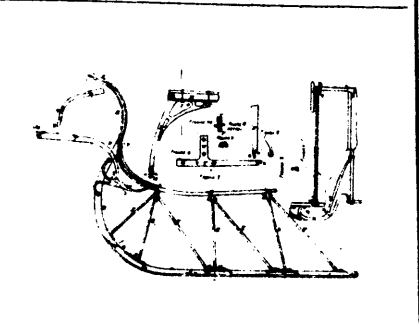
No. 1720. Tucker's Loom Shuttle.



No. 1721. Strong's Improved Horse Power.



No. 1722. Ballard's Wooden Pavement.



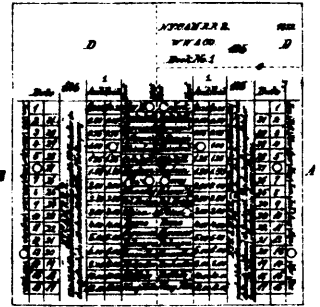
No. 1723. Smith's Improvements on Sleighs.



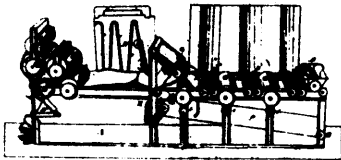
No. 1724. Barnford's Manufacture of Stockings.



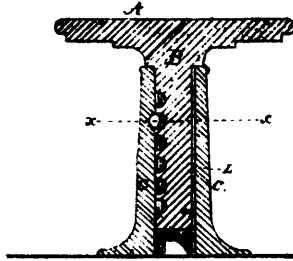
No. 1725. Kendall's Carpet lining and mattress filling of Paper Pulp and Sponge.



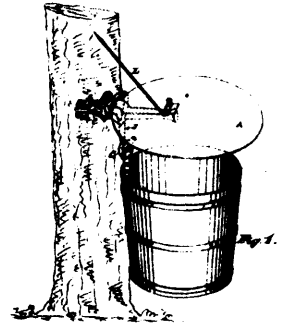
No. 1726. Jebb's Improvements in Fare tickets and Books.



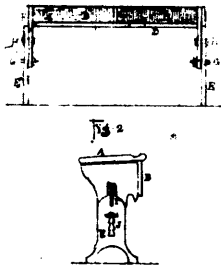
No. 1727. Harrington's Machine for making Carpet lining, Stair pads, &c.



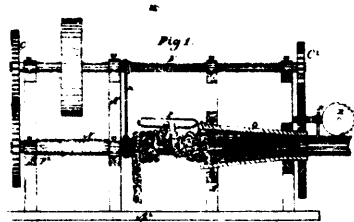
No. 1728. Hemenway's Adjustable Seats.



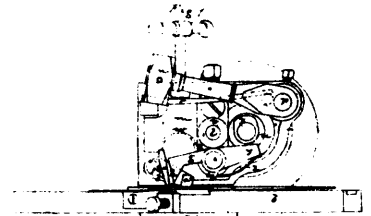
No. 1729. Post's Improved Sap-Spout and Fall.



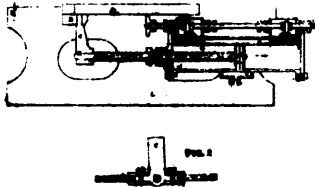
No. 1730. Hemenway's School Desks.



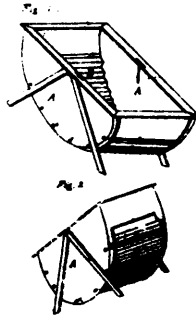
No. 1731. Griffin's material for Roofs, Floors, Pipes, &c.



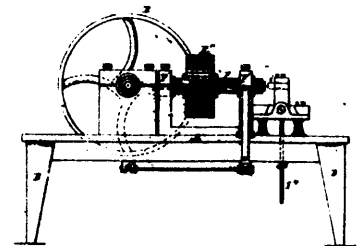
No. 1732. Wood's File Cutting Machine.



No. 1733. Levy's Steam Printing Press.



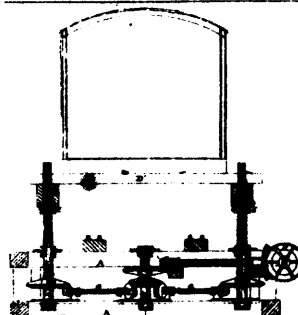
No. 1734. Vandanaigue dit Gadbois' Washing Machine.



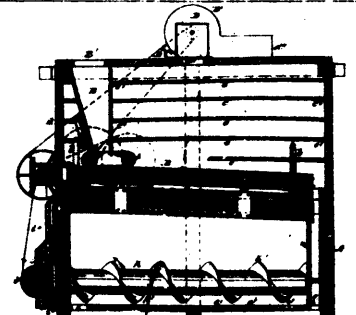
No. 1735. Ives' Auger Heading Machine.



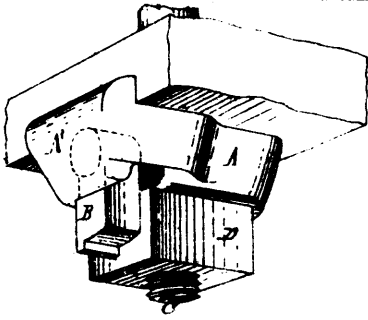
No. 1736. Warden's Construction of Vessels fit to carry inflammable Matter.



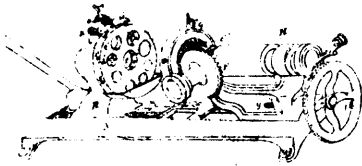
No. 1737. Nutter's Railway Wagon Lifting Machine.



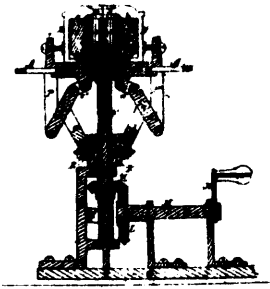
No. 1739. Lacroix's Improvements on Flour Bolts.



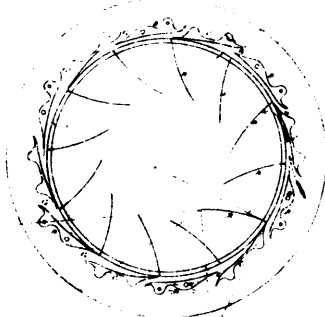
No. 1740. Furdie's Locking Washers for Nuts.



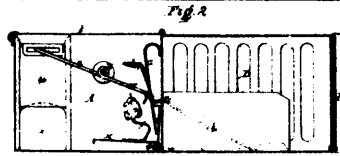
No. 1741. Grant's Screw Cutter and Drill.



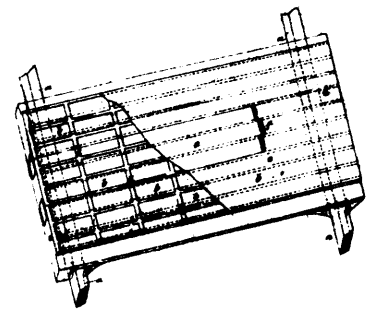
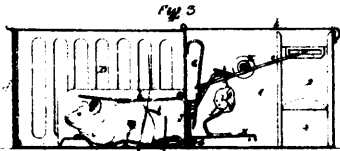
No. 1742. Bowie's Glass Blower's Mould.



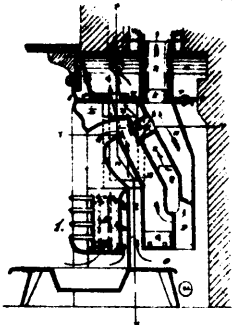
No. 1743. Barber's Turbine Water Wheel.



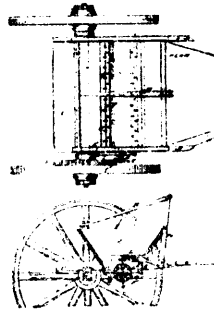
No. 1744. Kr ameneauer's Animal Trap.



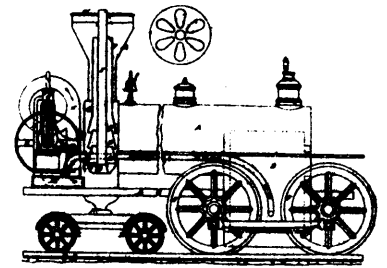
No. 1745. Storor's Metal Pavement.



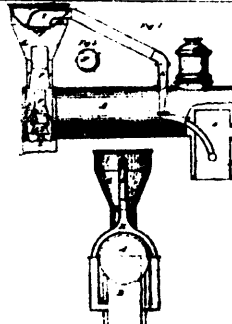
No. 1746. Smith's Fire Grates and Stoves.



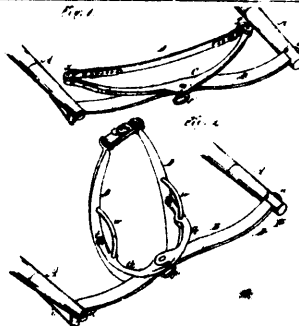
No. 1747. Chamberlain's Manure Cart.



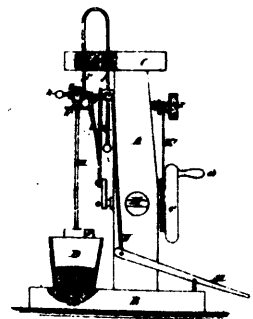
No. 1748. Pike's Spark Arrestor and Consumer.



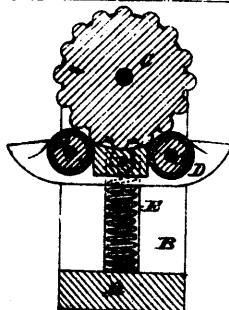
No. 1750. Griggs' Spark Arrestor and Consumer.



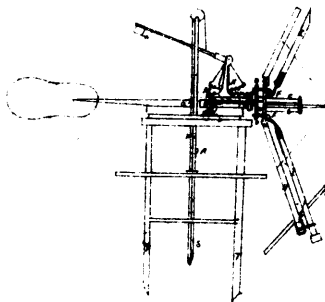
No. 1751. Lawton's Harness.



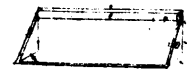
No. 1752. Worthley's Mechanical Motor.



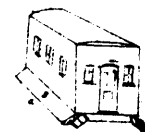
No. 1753. Worthley's Washing Machine.

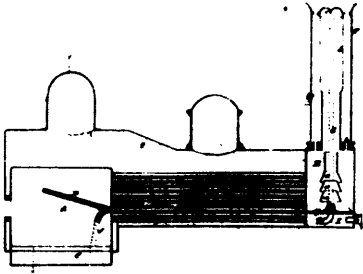


No. 1754. Springer's Wind Power.

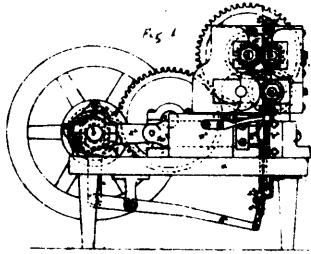


No. 1755. Welby's Railway Dust Preventer.

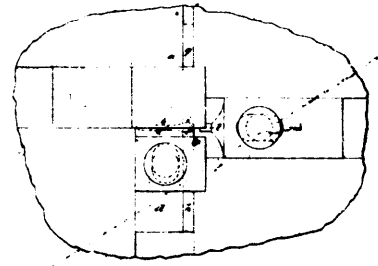




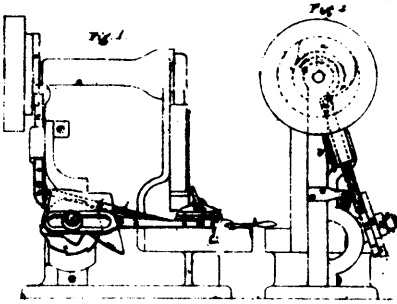
No. 1756. Pike's Spark Arrester and Consumer.



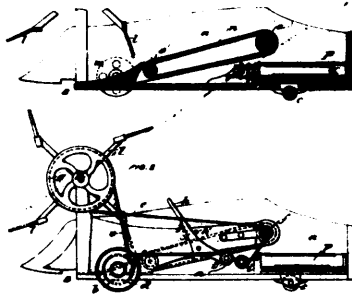
No. 1757. Fuller's Horse Shoe Nail Machine.



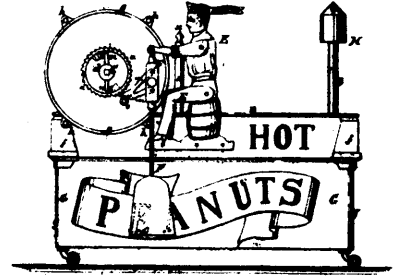
No. 1758. Fuller's Manufacture of Horse Shoe Walls.



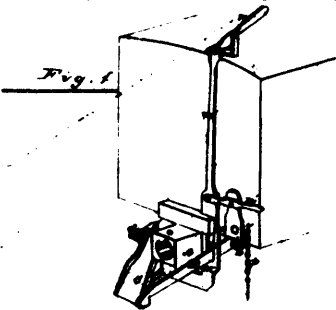
No. 1759. Fuller's Horse Shoe Nail blank punching Machine.



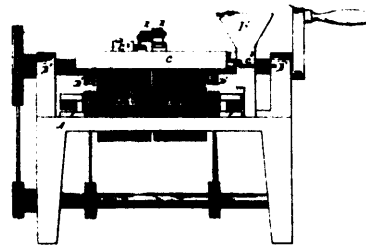
No. 1760. Froehotte's Harvester.



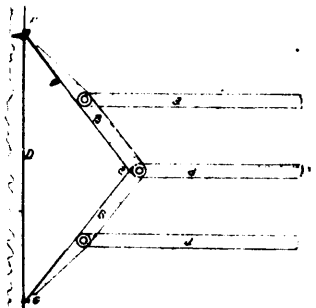
No. 1761. Gale's Nut and Coffee Roaster.



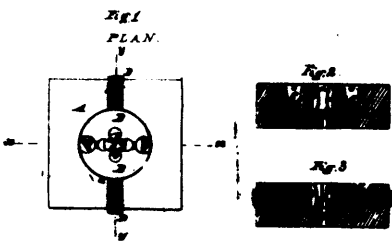
No. 1762. Skidmore's Car-coupling Machine.



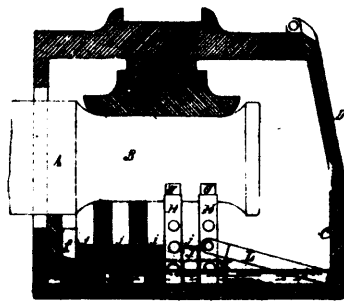
No. 1763. Mallet's Machine for polishing Needles.



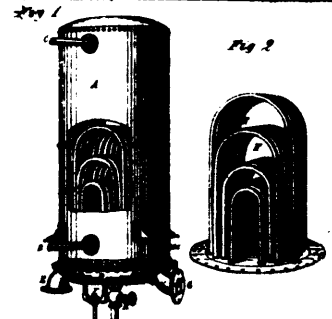
No. 1764. Williamson's Machine for Drying Clothes.



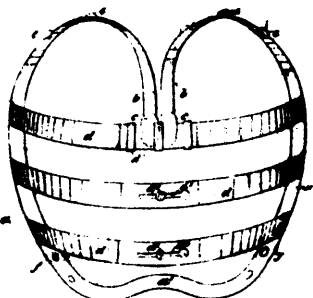
No. 1765. Grant's Die for cutting Screw Threads.



No. 1766. Harvey's Device for lubricating Railroad "Journal."



No. 1767. Berryman's Improvements of Steam Boilers.



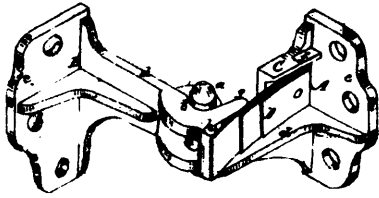
No. 1768. Bones Abdominal supporter.



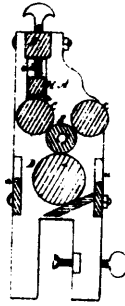
No. 1769. Goldman's Metal Sole of Boots and Shoes.



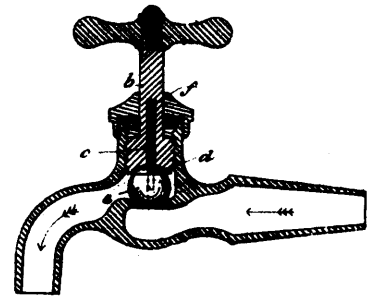
No. 1770. Willard's Improved Barrels.



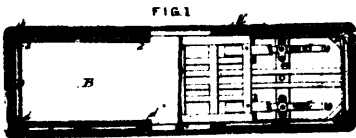
No. 1771. Buffer's Blind Hinge.



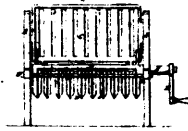
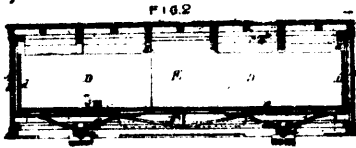
No. 1773. Burbank's Wringing Machine.



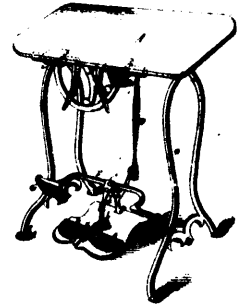
No. 1774. MacIaren's Stop Cook.



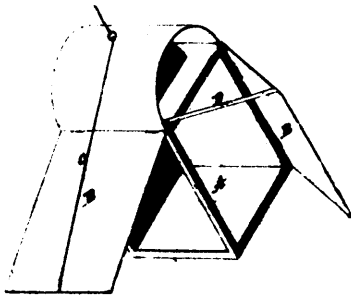
No. 1776. Timby's Improvements on Railway Cars.



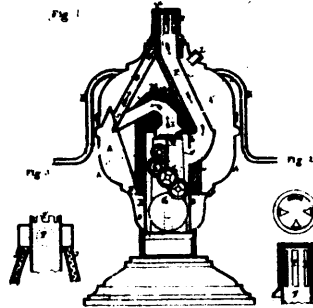
No. 1777. Caven's Fire place Grate.



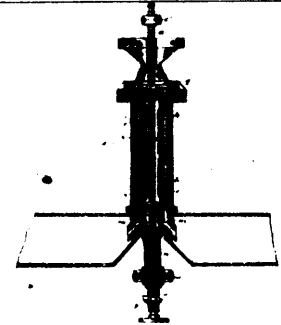
No. 1778. Stewart's Improvements on Sewing Machines.



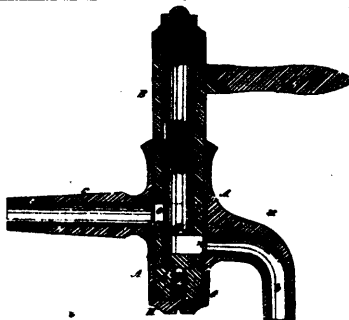
No. 1779. Rippon's Adjustable Reflector.



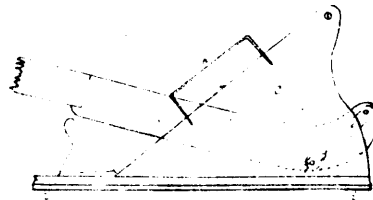
No. 1781. Myer's Apparatus for the manufacture of Illuminating Gas.



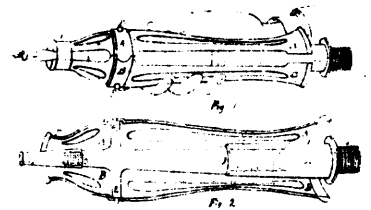
No. 1783. Foster's Vertical Pulveriser.



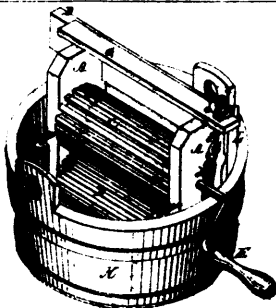
No. 1785. Boyle's Automatic Faucet.



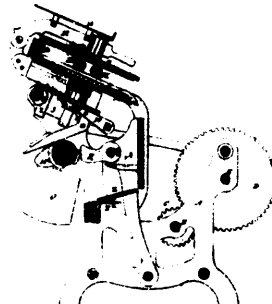
No. 1786. George's Machine for slicing Bread or Vegetables.



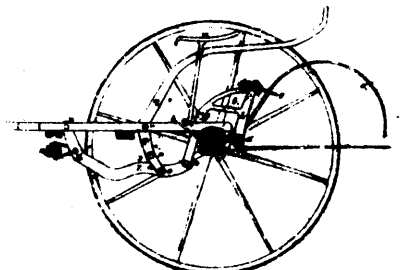
No. 1787. Day's Clasp for elastic tubes.



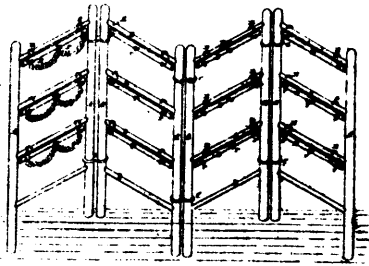
No. 1788. Faber's Washing Machine.



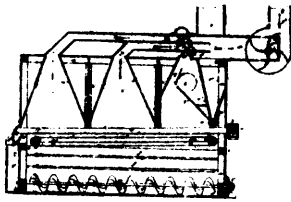
No. 1789. Gordon's Printing Press.



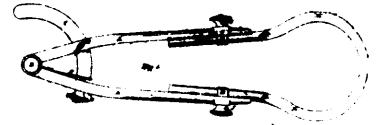
No. 1790. Tins' Horse Rake.



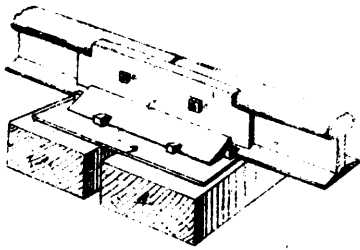
No. 1791. Smith's Clothes and Fruit Dryer.



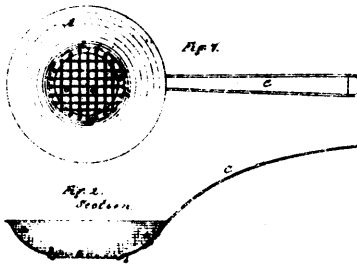
No. 1793. Sherman's Middlings Separator.



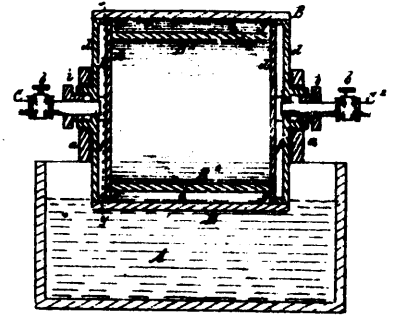
No. 1794. Cooke's Divider.



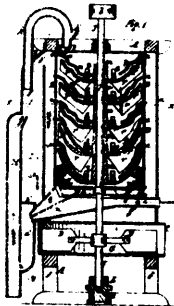
No. 1796. Williams' Ball-Joint.



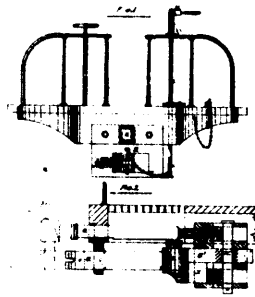
No. 1796. Page's Skimmer and Vegetable Dipper.



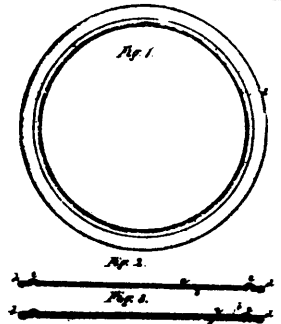
No. 1797. Gilson's Apparatus for manufacturing Salt.



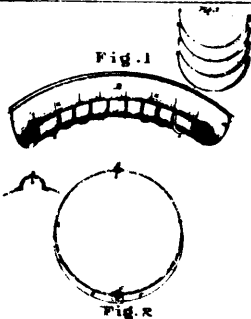
No. 1798. Trimmer's Suet Mill and Grain Cleaner.



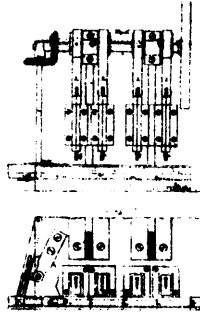
No. 1799. Wilson's Car-Coupler with Compressed double or single Buffer Combined.



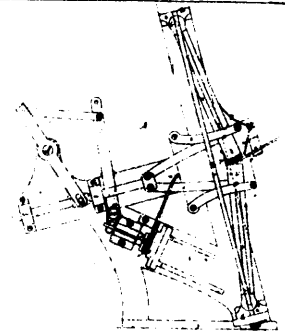
No. 1800. Brooks' Stove-Board.



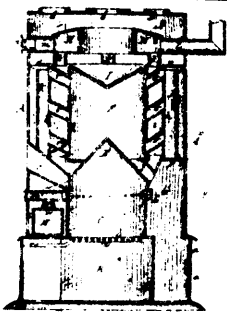
No. 1801. Howell's Corrugated Elbow.



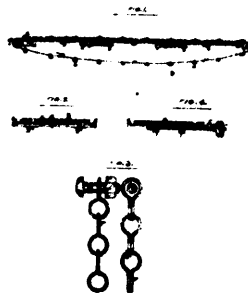
No. 1802. Osgyl's Machine for Punching Horse-Shoe Nail Blanks.



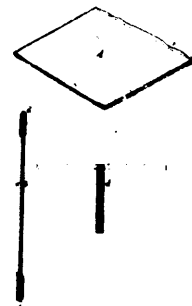
No. 1803. Caryl's Horse-Shoe Nail Machine.



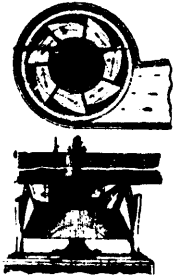
No. 1804. Geddes' Furnace.



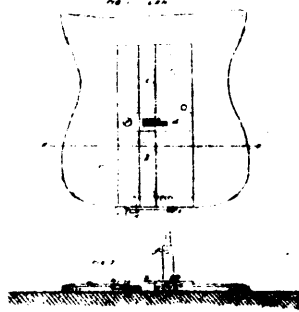
No. 1805. Kline's Chain Straw-Carrier for Threshing Machines.



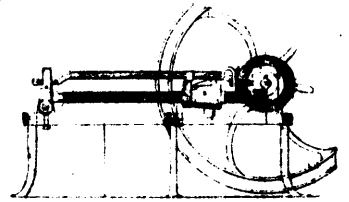
No. 1806. Winslow's Elastic Goring for Boots and Shoes.



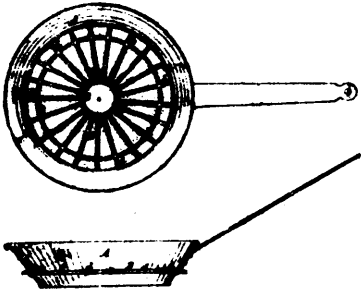
No. 1807. Abell's Adjustable Chute.



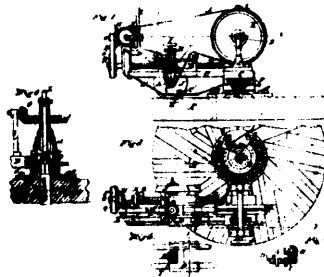
No. 1809. Lawlor's Improvements on Sewing Machines.



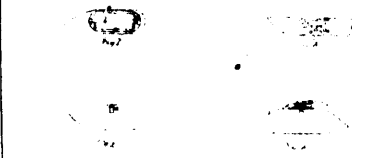
No. 1810. Parre's Machine for making Curved Tubes of Soft Metal.



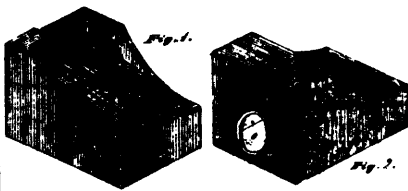
No. 1811. Page's Broiler.



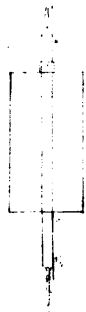
No. 1812. Hoyt's Method of Dressing Mill-stones and Machine therefor.



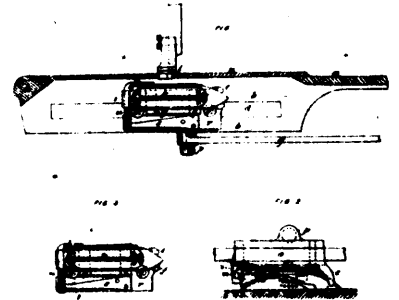
No. 1813. Henderson's Shuttle of Sewing Machine.



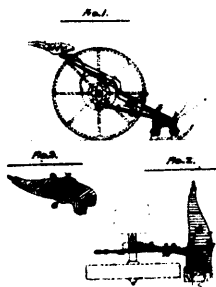
No. 1814. Penneyer's Foot Stove and Lantern.



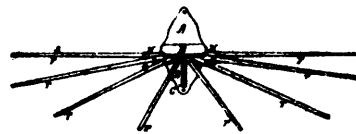
No. 1815. Henderson's Thread Cutter of Sewing Machine.



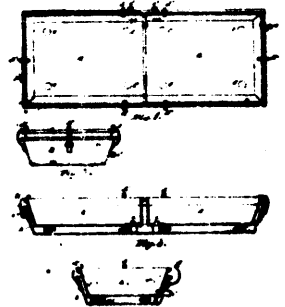
No. 1816. O'Neill's Sewing Machine Shuttle Protector.



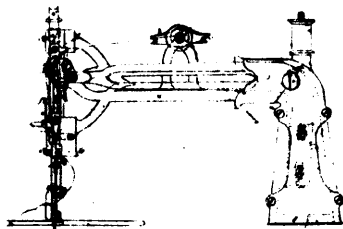
No. 1817. Reekie's Improvement on the Sprague Mower.



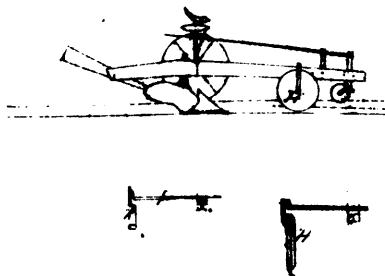
No. 1818. Page's Bracket Shelf and Clothes Drier.



No. 1819. Smith's Milk Pan Cooler.



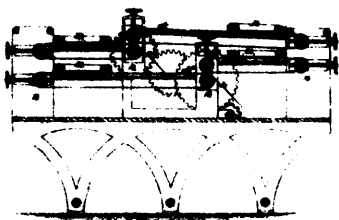
No. 1820. Appleton's Sewing Machine.



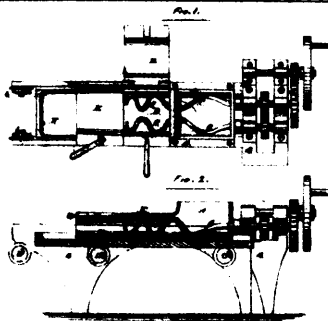
No. 1821. Marr's Plough Guide and Holder.



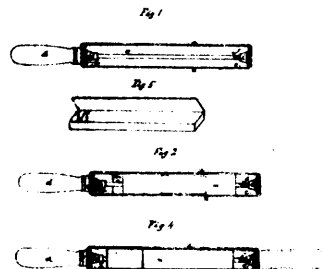
No. 1822. Rich's Saw Sharpener and Finisher.



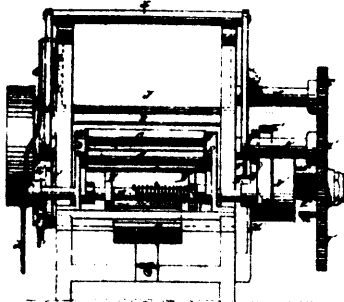
No. 1823. Damant's Machine for flattening out the dough and paste for biscuits, etc.



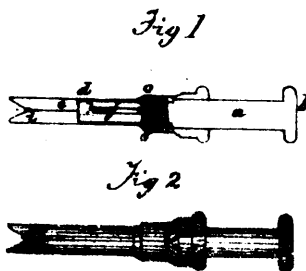
No. 1824. Damant's Dough Mixers.



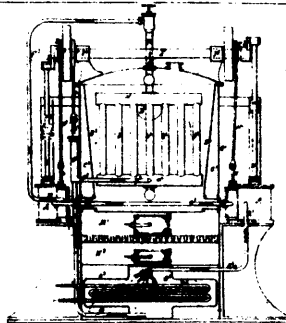
No. 1826. Howard's Razor Strip.



No. 1827. Schoolfield's Machine for making Cigar Bunches.



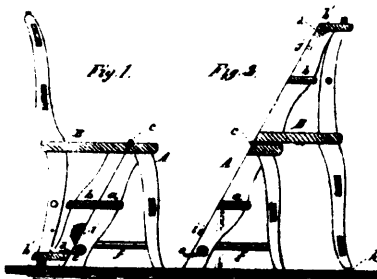
No. 1828. Henderson's Sewing Machine Needle Threader.



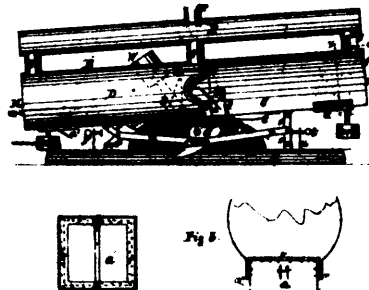
No. 1829. Mills' Mode of Generating Steam.



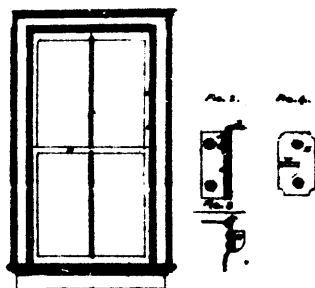
No. 1830. Prall's Device for supplying Locomotives with water.



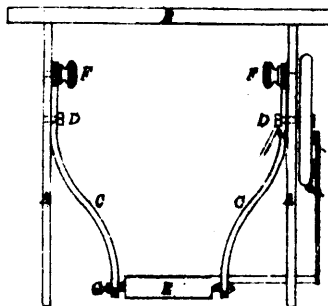
No. 1831. Green's Chair and Step Ladder Combined.



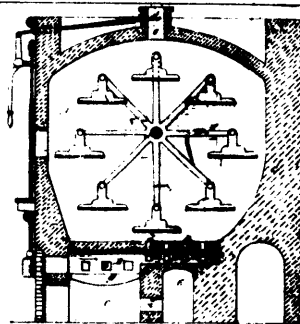
No. 1832. Patric's Machine for Compressing Air.



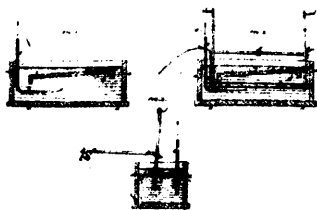
No. 1833. Hanna's Sash Fastener.



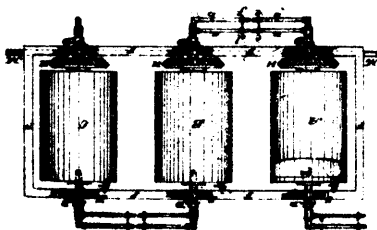
No. 1834. Osborne's Sewing Machine Treadle.



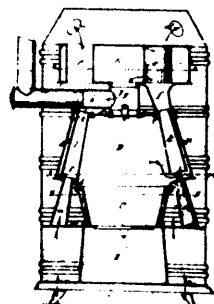
No. 1835. McKensie's Baker's Oven.



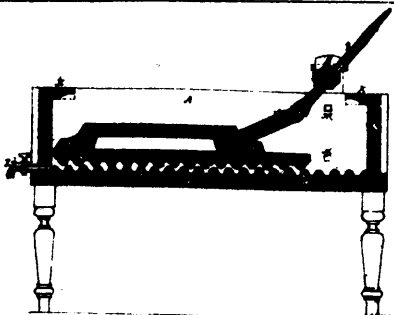
No. 1836. Young's Process for the treatment of Natural Petroleum.



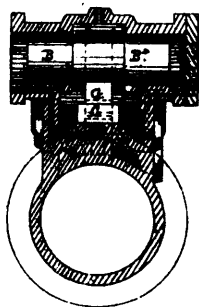
No. 1837. Young's Process for the Manufacture of Carbonate of Soda.



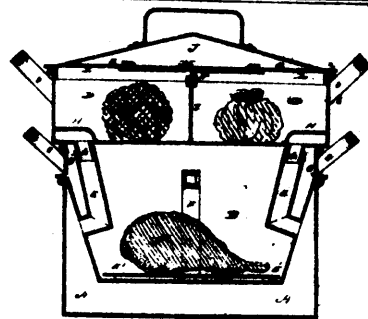
No. 1838. Kassar's Hot Air Furnace.



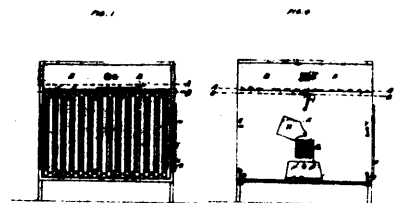
No. 1839. Demers' Clothes Washing Machine.



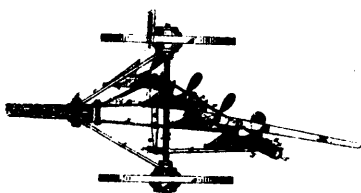
No. 1840. Blake's Valve for direct acting Steam Engines.



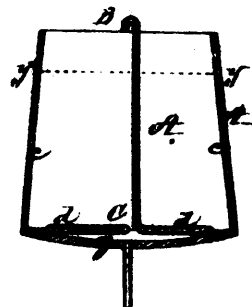
No. 1841. Bollard's Cooking Utensil.



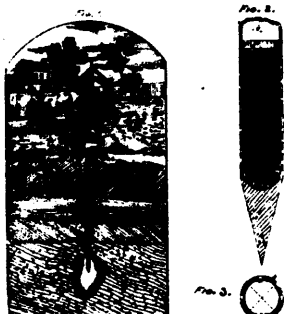
No. 1842. Pettet's Bee-Hive.



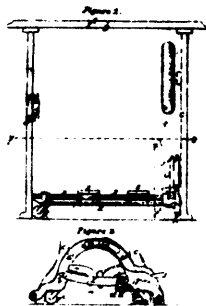
No. 1843. Walton's Gang-Plough.



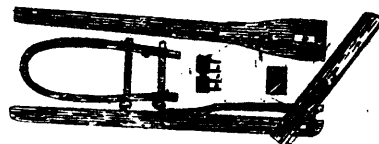
No. 1844. Carter's Manufacture of Writing Ink.



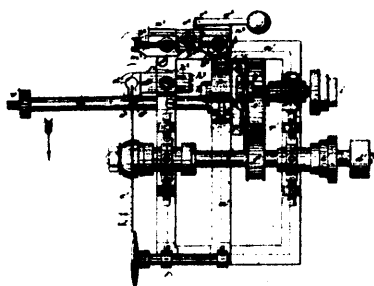
No. 1846. McFarland's Point for Drive Walls.



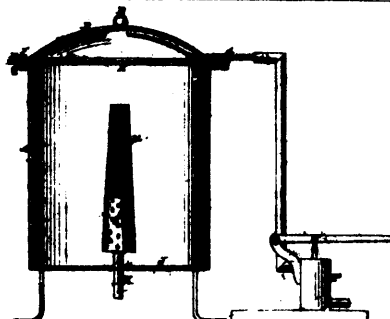
No. 1847. Proctor's Castor attachment for Sewing Machines.



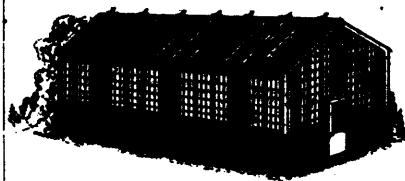
No. 1848. Ney's Horse Fork.



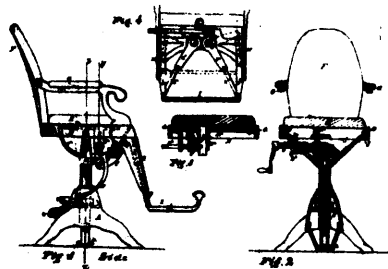
No. 1849. Hy's Improvements on Saw Mill Machinery.



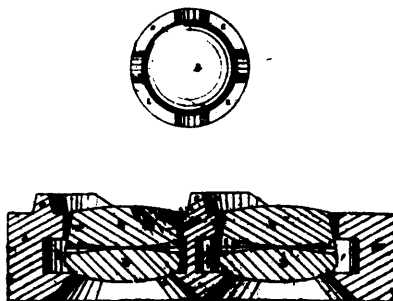
No. 1850. Sinclair's Apparatus for Filtering Liquids.



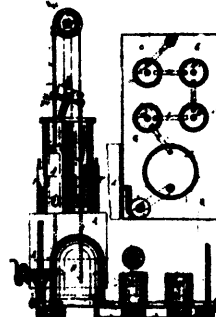
No. 1851. Fleasanton's Method of Accelerating the Growth of Plants and Animals.



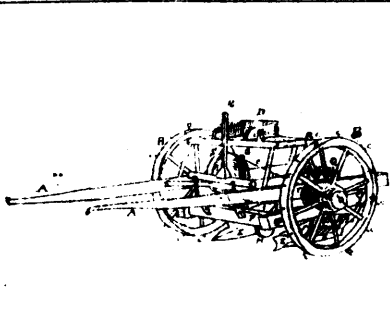
No. 1852. White's Dentist's Chair.



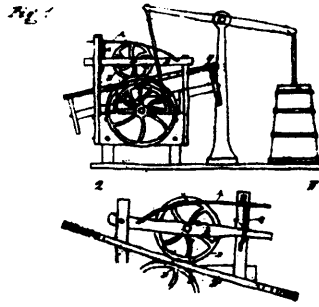
No. 1853. French's Vault Light.



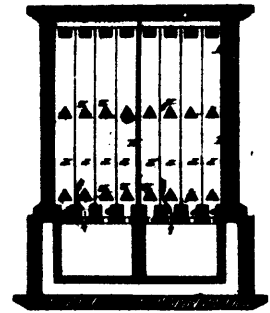
No. 1854. Homage's Machine for Generating and Purifying Ozone.



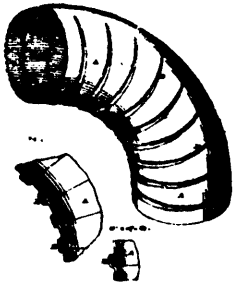
No. 1855. Bentley's Machine for Harvesting Beans.



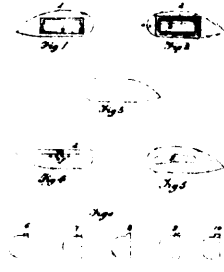
No. 1856. Bolton's Spring regulating the friction of Machinery worked by animal power.



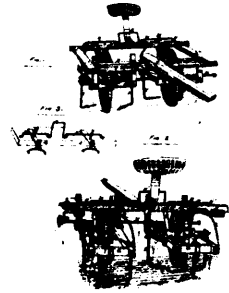
No. 1857. Gould's Bee-Hive.



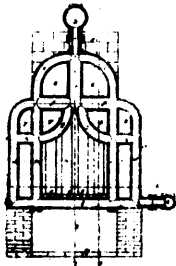
No. 1859. Dickmann's Pipe Elbow.



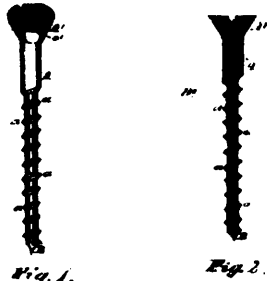
No. 1860. Edson's Sewing Machine Shuttle.



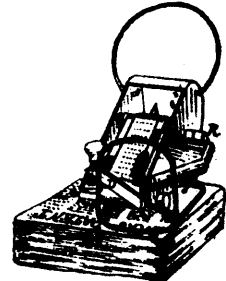
No. 1861. Wade's Improvements on Cultivators.



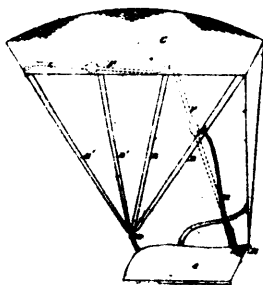
No. 1862. Mills' Steam Generator.



No. 1863. Lingenfelter's Wood Screw.



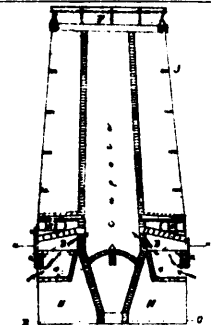
No. 1864. Dick's Masting Machine.



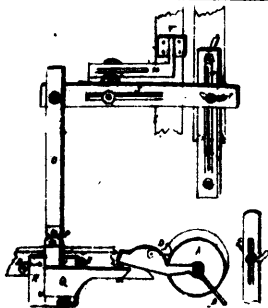
No. 1865. Lingenfelter's Carriage Top support.



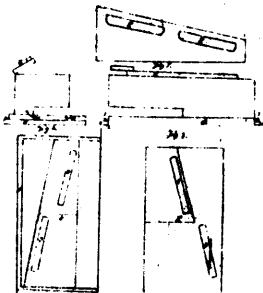
No. 1866. Hunter's Combination Railroad rails.



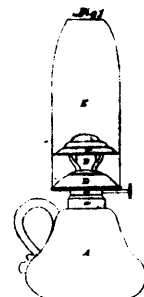
No. 1867. Fratello's Perpetual Draw Lime Kiln.



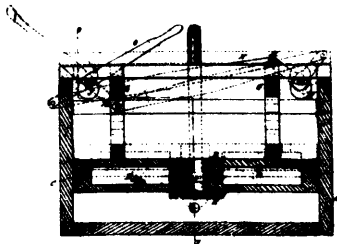
No. 1868. Ansell's Machine for Sawing Glap-Boards.



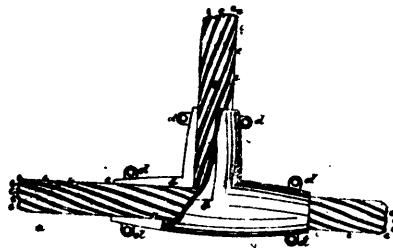
No. 1869. Hardy's Improvements on Melodions.



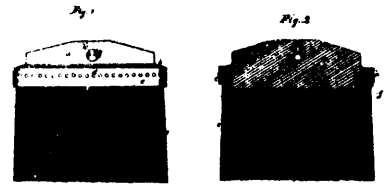
No. 1870. Collins' Improved Lamp.



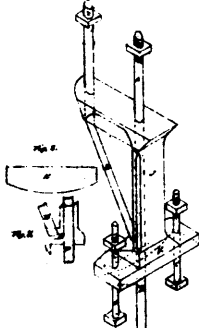
No. 1871. Grochan's Railway Pump.



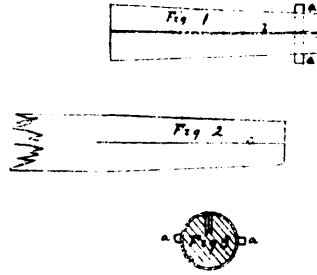
No. 1873. Ode's Lightning Rod.



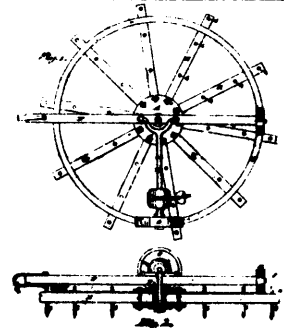
No. 1874. White's Brush.



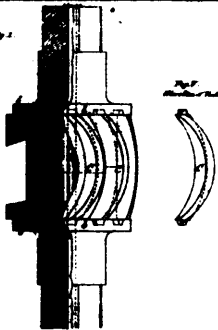
No. 1875. Shears' Iron Sled Knee.



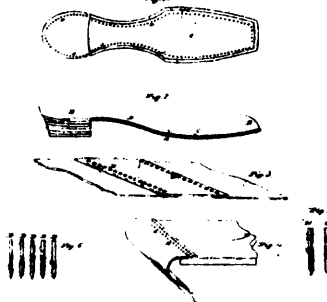
No. 1876. Pierce's Corn Broom with detachable handle.



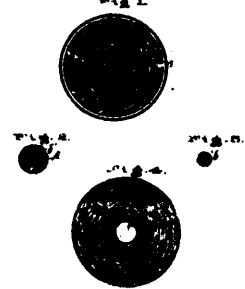
No. 1877. Burdick's Rotary Harrow.



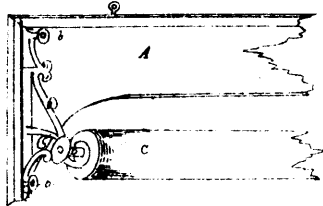
No. 1878. Oliver's Pattern for Gear Wheels.



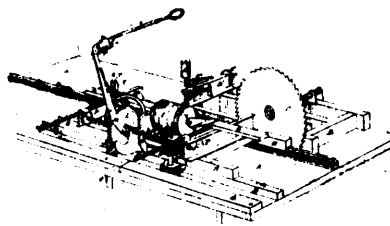
No. 1880. Oliver's Shoe Peg.



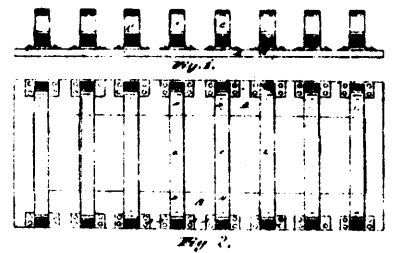
No. 1881. Murfy's Piston packing.



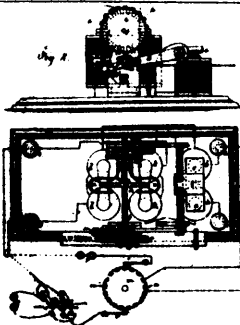
No. 1882. Campbell's Towel Hanger.



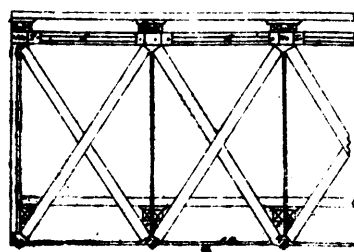
No. 1883. Pattee's Improvement in Circular Saw Mills.



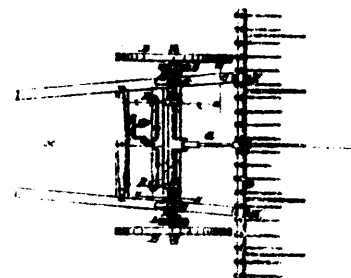
No. 1884. Briggs' Bed and Seat Spring bottom.



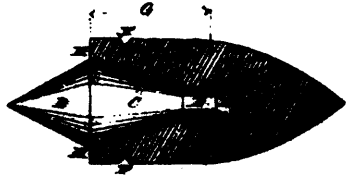
No. 1885. Hoovenbergh's Printing Telegraph.



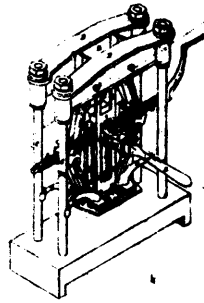
No. 1886. Anderson's Formation of Spans of Bridges.



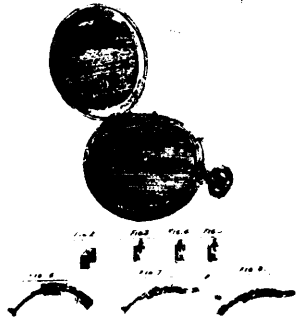
No. 1887. Ives' Combined Horse Hay Rake and Tedder



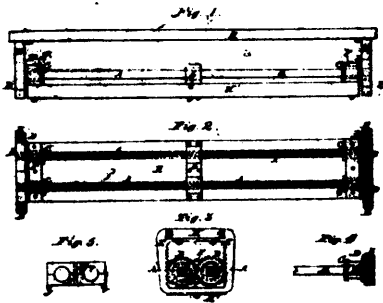
No. 1888. Haycock's Projectile for rifled Gun and Ordnance.



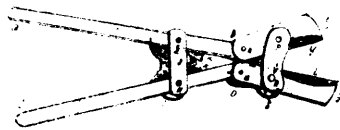
No. 1889. Boomer's Combined Lever and Screw Press.



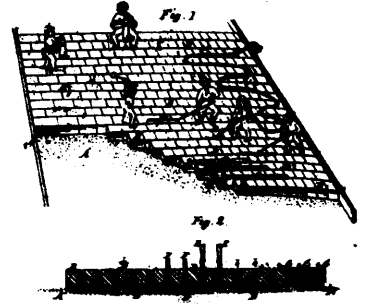
No. 1890. Eason's Watch Case Spring attachment.



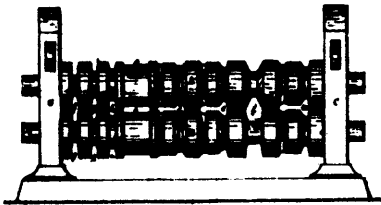
No. 1891. Saladee's Compound Torsional Springs for Vehicles.



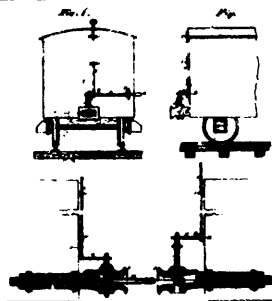
No. 1892. Rapson's Machine for Cutting and Trimming rivets and bolts.



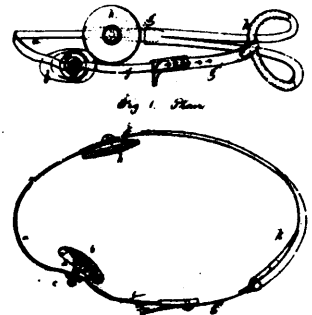
No. 1893. Morong's Method of Laying Wood pavements.



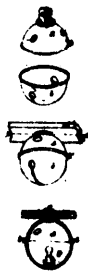
No. 1894. Chisholm's Rolls for utilising worn and crop ends and other parts of Railway T Rails.



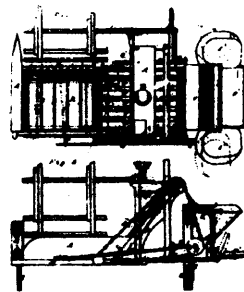
No. 1895. Jones' Car-Coupling.



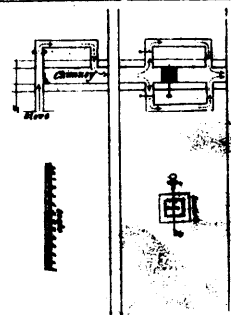
No. 1896. Sherman's Hernial Trusses.



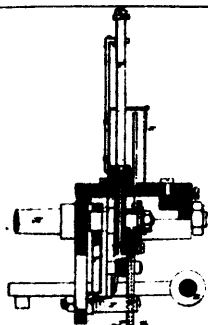
No. 1897. Nichols' Sleigh Bell.



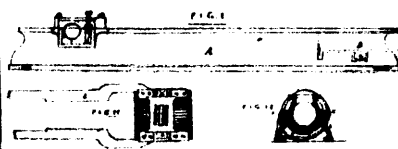
No. 1898. Rice's Grain Harvester.



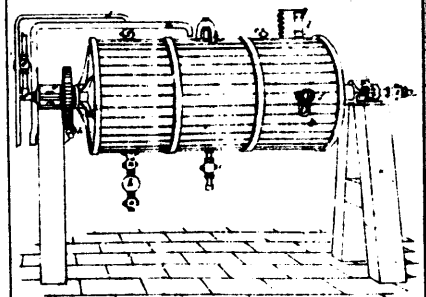
No. 1899. Blackin's Method of heating Buildings.



No. 1900. Kuhlmann's Pegging Machine.



No. 1901. Levey's Improvement in Steam Engines.



No. 1902. Smith's Process of treating wood for the Manufacture of Paper.