

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

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

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

Includes index(es)/
Comprend un (des) index

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

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.

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	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The Canadian Patent Office

RECORD




Vol. VI.—No. 4.

APRIL, 1878.

{ Price in Canada \$2.00 per An
United States - \$2.50 "

CONTENTS.

INVENTIONS PATENTED.....	49
INDEX OF INVENTIONS.....	LIX
INDEX OF PATENTEES.....	LIX
ILLUSTRATIONS.....	59

INVENTIONS PATENTED.

No. 8479. Improvements on Lamp Burners. (Perfectionnements aux becs des lampes.)

Erans H. Jenkins, Dayton, Ohio, U.S., 28th February, 1878, for 5 years
Claim.—The cap D, the throat A, having one side at its top bent in and corrugated, or perforated, the division plate B so arranged as to provide air passages on one side of it and the wick pinions C.

No. 8480. Machine for Raising Bread. (Machine à faire lever la pâte.)

Henry Martin, Wallaceburgh, Ont., 28th February, 1878, for 5 years.
Claim.—The combination of the box A with the metallic pan B, and of the door C and slats GG.

No. 8481. Combined Looking-Glass, Comb-Case and Towel Rack. (Psyché, boîte à pince et porte-serviette combinés.)

Robert Soper, London, and Augustus Soper, Tilsonburg, Ont., 28th February, 1878, for 5 years.
Claim.—1st. The combination of the hinged frame AE, hinges DD; and rod C. 2nd. In combination with the above, the brackets KK, journals JJ, plungers IIII, coil spring P and roller G. 3rd. The combination of a frame AE, looking-glass B, comb-case F and towel-rack G.

No. 8482. Improvements on Self-Feeding Stoves. (Perfectionnements aux poêles à charbon.)

George R. Prowse, Montreal, Que., 28th February, 1878, for 5 years.
Claim.—1st. The combination of the stationary reservoir D with the portable reservoir G. 2nd. The reservoir D in combination with reservoir G, having slats K and M, flanges L, and movable bottom N. 3rd. The reservoir D in combination with portable reservoir G, having slot M and removable and replaceable bottom N. 4th. The removable cover I having joint H, in combination with the stationary reservoir D. 5th. The removable cover I in combination with the portable reservoir G. 6th. The stationary reservoir D in combination with the removable cover I having joint H, and with the portable reservoir G.

No. 8483. Improvements on Wash-Boards. (Perfectionnements aux planches à savonner.)

David J. George, Winona, Min., U.S., 22th February, 1878, for 15 years.
Claim.—The corrugated metallic plate B formed of a single piece of sheet metal, and provided at its lower end with a tubular enlargement g.

No. 8484. Improvements on Wind-Mill Pumps. (Perfectionnements aux pompes mues par le vent.)

John Huggill, Jr., Seaforth, Ont., 28th February, 1878, for 5 years.
Claim.—1st. The break wheel D, break E, break rod F, having returned end or crook K, threaded socket a, supporting shafts H, handle I and loop end J in combination with the frame GG; and shaft C of a wind mill pump, 2nd. The ties MM and swivel bolt N, in combination with the rods LL of a wind mill pump.

No. 8485. Machine for Rosing and Cutting Bark. (Machine à triturer et couper l'écorce.)

Samuel R. Thompson, Brookline, Mass., U.S., 28th Febr'y, 1878, for 5 years.
Claim.—1st. A bark cutting machine employing a rotary cutter a sieve or perforated partition located under said cutter, for the purpose of arresting

the coarser particles of bark and subjecting such particles again to the action of the cutter, 2nd. The combination of a rotary cutter and a curved sieve or perforated partition arranged to form a laterally converging space under said cutter, 3rd. The combination of a rotary cutter, a bed plate having a shoulder m and a curved sieve or perforated partition arranged to form a laterally converging space under said cutter and terminating in a shoulder m; 4th. A bark cutting machine employing a rotary cutter and a rising and falling feed roll, a hood or casing supported on the bed of the machine, arranged to cover the cutter and feed roll, and provided with slots in which the journals of the feed roll may rise and fall; 5th. The back plate provided with the movable gate or partition, 6th. The combination of the gate or partition, the hood or cover and the bed plate with the cutter and feed roll; 7th. In combination with the bed plate M, the hinged extension I and means as described for supporting said extension at any desired inclination; 8th. In combination with the bed plate M, the endless apron and means for driving the same 9th. The feed roll a' combined with the blocks adapted to rise and fall independently and provided with the double conical bearings; 10th. The rotary cutter composed of the longitudinally grooved cylinder or body A; and the detachable rods or blocks a, each provided with a series of detachable teeth a', 11th. The combination of the grooved cylinder or body A, the rods or blocks a having teeth a' and means for securing the blocks in the cylinder.

No. 8486. Improvement in Vehicle Wheels. (Perfectionnement dans les roues des voitures.)

Thomas H. King, San Francisco, Cal., U.S., 28th February, 1878, for 5 years.
Claim.—1st. The metallic wheel hub G having its lateral bearing faces, and the flanges B rigidly secured to the axle, and having similar bearing faces to receive the lateral thrust, 2nd. The metallic wheel hub G having the lateral bearing faces grooved or toothed, and the rigid flanges B upon the axle having corresponding bearing faces, in combination with the anti-frictional balls or rollers E, with their supporting frame or spiler. 3rd. The convex elastic disc H secured to the hub C and extending behind the flange B or the axle collar so as to exert a constant lateral pressure, and serve as a dust cap, 4th. The hub C having the tapering corrugated notches to receive and hold the spoke J against lateral strains; 5th. The hub mortise I having at its bottom the lip or projection K to receive a corresponding slot in the end of the spoke, and assist in holding the spoke; 6th. The anti frictional balls or rollers E, having grooves for the reception of an elastic substance to prevent noise and rattling; 7th. The axle or spindle A having the thrust bearing ring or flange D, to be used with the anti-frictional vertical bearing rollers.

No. 8487. Improvements in Curtain Fixtures. (Perfectionnements dans les ajustages des rideaux.)

Josiah Nesbitt and Alexander Anderson Toronto, Ont., 4th March, 1878, for 5 years.
Claim.—1st. A disc or plate C provided with an arm or lever F and a slotted bearing a, and eccentrically pivoted upon the bracket A, in combination with the bearing pin b carrying the roller H. 2nd. A reel or spool D secured to the end of the roller H by the bearing pin b and having one or more tits d on its surface, the said bearing pin b resting on the bearing a, made on the eccentrically pivoted disc C and through the arm F, operated by the cord E in such a manner that the tit d can be moved from the lip c, or allowed to drop against it, in order to move the blind or allow it to remain stationary, as may be required, 3rd. A roller H with a slot h cut in it to receive the window blind, in combination with metallic clips G, shaped as shown.

No. 8488. Improvements on the Manufacture of Chromates of Potash and Soda. (Perfectionnements dans la fabrication des chromates de potasse et de soude.)

Charles S. Gormon, Irvine, Scot., 4th March, 1878, for 5 years.
Claim.—1st. The manufacture of chromate of potash or chromate of soda by the process conducted as described, wherein a secondary process of furnacing at a comparatively low temperature is employed after or in combination with process of furnacing conducted at about a red heat, as ordinarily used, 2nd. The manufacture of chromate of potash or chromate of soda by the process conducted as described, wherein a furnacing at a very high temperature is followed by a secondary furnacing at a comparatively low temperature. 3rd. The use in the manufacture of chromate carried on in the manner mentioned, of the secondary process of furnacing at a low temperature employed as described.

No. 8489. Improvements in Washing Machines. (*Perfectionnements dans les machines à laver.*)

Truman Austin, Virginia, Nev., U.S., 4th March, 1878, for 5 years.

Claim.—1st. The rotating cylinder A so mounted as to be supplied with steam or water, and having the fixed buckets D together with an interior series of supporting rollers for clothes; 2nd. The bars or rollers formed in two parts, and having the conical ends E fitting into conical adjusting sockets at each end for the purpose of holding the parts together; 3rd. The conically ended two-part rollers D, having the receiving conical sockets at either end, and the operating screw G for the purpose of allowing the parts to separate or to close and secure them after the clothes are introduced.

No. 8490. Improvement in Stoves. (*Perfectionnement dans les poêles.*)

Edward Gurney and Charles Gurney, Hamilton, Ont., 4th March, 1878 for 5 years.

Claim.—In combination with base burning, self-feeding, cooking, parlour, wood and coal stoves or ranges of a ventilating ring B provided with openings *d*, or ventilating tops and bottoms of stoves constructed in the same manner, for the purpose of preventing the ground, necked or otherwise polished edges of the same from becoming tarnished.

No. 8491. Improvements on Tools for Metal Working Lathes and Planers. (*Perfectionnements aux outils de tours et raboteuses à métaux.*)

John Du Bois and Edwin F. Beugler, Williamsport, Pa., U.S., 4th March, 1878, for 5 years.

Claim.—1st. The combination of a stock or body, and a cutting blade or bit secured in or across the end of the same in an oblique and horizontal position; 2nd. A cutting blade B mounted obliquely and adjustably in the end of the stock or body A; 3rd. In combination with the stock A, the curved blade secured obliquely therein; 4th. A thin steel blade or cutter, and a stock or body adapted to hold the same and give it a firm support to its extreme cutting edge; 5th. The combination of a thin cutting blade, and a stock or holder, the blade being secured horizontally and adjustably to the stock, and sustained at its extreme cutting end thereby; 6th. The combination of a horizontal cutting blade, either curved or straight, with two clamping blocks or plates, one sustaining the blade on the under side to its extreme end, and the other bearing on top of the blade and extending nearly to its end; 7th. The combination of a stock or holder, and a blade or cutter secured obliquely in and across the end of the same, the outer faces of the two standing flush with each other, in order that the tool may be advanced across the end faces of shafting &c.; 8th. The combination of a cutting blade and a stock or holder, constructed with a forward nose or point to sustain the forward end of the same, the nose and blade having parallel vertical sides; 9th. The combination of the stock or holder A having an oblique head or socket, the blade B seated therein and the screw or equivalent fastening device; 10th. The combination of the stock A, the oblique blade B, blocks D b and screw C.

No. 8492. Improvements on Mining Machines. (*Perfectionnements aux machines à miner.*)

Francis M. Lechner and Joseph A. Jeffrey, Columbus, Ohio, U.S., 4th March, 1878, for 5 years.

Claim.—1st. The combination of the straight or chisel edged cutters *c*, with the notched cutters *c*; 2nd. The combination of a stationary screw and a detachable nut mounted in the sliding cutter carrier; 3rd. The combination with the screw K of a divided nut (O), its conical support, and the enclosing shell L; 4th. The shaft r and rope r in combination with the main frame and sliding cutter frame for withdrawing the cutters; 5th. The combination with the sliding frame which carries the cutter of a screw and nut for advancing the cutter, and a shaft and rope for withdrawing the same, with the mechanism which drives the cutter; 6th. A cutter frame, made hollow to conduct air from the driving engine and deliver it near the cutter; 7th. In scrapers operated in vertical planes to remove the cutting from the kerf or drift; 8th. A worm adjustable upon the driving shaft for actuating the feeding devices; 9th. The shaft F made adjustable for tightening the driving chain; 10th. The overhanging scraper-chain supports; 11th. The combination with the carriers, of the driving shaft E, adjustably supported between said carriers; 12th. The cutter bar provided with the projecting lugs *m* having their engaging faces formed in arcs of circles; 13th. The driving chain provided with friction rollers *m* adapted to engage with the lugs *m*.

No. 8493. Improvements on Washing Machines. (*Perfectionnements aux machines à laver.*)

Joseph O. Beupperland, Fall River, Mass., U.S., 4th March, 1878, for 5 years.

Claim.—1st. The combination with the case B of the rotary cylinder A, having the end brushes, the longitudinal spaced brushes, the prismatic rollers *h* arranged between them and the buckets L; 2nd. In a rotary washing machine, the cylinder A having the spaced strips provided with the tufts *f* and the prismatic rollers *h* between said strips; 3rd. The washing machine cylinder A having the buckets L, the end brushes, the longitudinal spaced brushes and the prismatic rollers between the latter; 4th. The combination with the vessel B having the U-bearings, and the cylinder A having the guide-gears J journalled in said bearings, and one of them provided with gear-wheel J of the independently journalled shaft I having a pinion *m* engaging the said gear wheel.

No. 8494. Improvements on Catches for Bags. (*Perfectionnements aux attache-sacs.*)

Richard Hensley and Dickson Anderson, Montreal, Que. 4th March 1878 for 5 years.

Claim.—1st. The pawl D in combination with and pivoted to the projections B of the plate A, plate A and string or band, &c., F; the pawl D having a cam form from the point 1 to point 2 and form of equal radius from

the point 2 to the point 3, in combination with the plate A having projections B and with string, &c., F; 3rd. The combination of the plate A having projections G with pawl F having surfaces from the points 1 to 2 and from the points 2 to 3 constructed as shown; 4th. The plate A having hole L in combination with the pawl D having surface constructed as shown and with string, &c., F; 5th. The plate A having projections B, said projections having holes L in combination with pawl D having surfaces as described; 6th. The plate A in combination with pawl D having surface constructed as shown, and with the string, &c., F.

No. 8495. Improvements on Car Wheels. (*Perfectionnements aux roues des wagons.*)

William Wilmington, Toledo, Ohio, U.S., 4th March, 1878 (Extension of Patent No. 2312), for 5 years.

No. 8496. Improvements on Coal Oil Stoves. (*Perfectionnements aux poêles à pétrole.*)

James Baulff, Ottawa, Ont. (Assignee of John A. Frey, Jersey, N.J. U.S., 6th March, 1878 (Extension of Patent No. 2308), for 5 years.

No. 8497. Improvements on Coal Oil Stoves. (*Perfectionnements aux poêles à pétrole.*)

James Baulff, Ottawa, Ont. (Assignee of John A. Frey, Jersey, N.J. U.S., 7th March, 1878 (Extension of Patent No. 2306), for 5 years.

No. 8498. Improvements on Potato-Diggers. (*Perfectionnements aux aratoires à patates.*)

Peter M. Bawtinhauer, Woodstock, Ont., 8th March, 1878 (extension of Patent No. 2152), for 5 years.

No. 8499. Improvement in Fog Alarms. (*Perfectionnements dans les signaux de brume.*)

Noah Woodward, (Assignee of Robert Booth and Lewis Smith) Sherbrooke, Que., 8th March, 1878, for 5 years.

Claim.—1st. The controlling mechanism G consisting of the spindle lever *c*, disc *f*, with stop piece *g* *h* and weighted lever K; 2nd. The combination of the steam cylinder A and its piston B, with the air cylinder E and its piston D; 3rd. In combination with the controlling mechanism G, a valve F, stop cock, slide valve, or equivalent devices, and cylinder A; 4th. In combination with the cylinders A and E, valve F and controlling mechanism G, the pivoted *p* and pins *m* and *n*; 5th. In combination with the cylinder A, valve F and controlling mechanism G, the stop cock lever *p*, pin *n* and disc *y*; 6th. In combination with the valve F, controlling mechanism G and cylinder A or E, the stop cock M; 7th. In combination with the stop cock M, the stop cock or valve N, 8th. In combination with the valve F, the stop cock or valve P; 9th. The combination of the cylinder A, or cylinder A and E, with their pistons, &c., the controlling mechanism G, valves F and P, stop cocks M and N, pivoted lever *p*, pin *n* and pin *m* or disc *y*, with a horn and reed or with a whistle.

No. 8500. Compound for Preserving and Renovating Cut Stone. (*Composé pour préserver et rafraîchir la pierre à taille.*)

Alexander McLean, Benjamin Morton and John W. G. Whitney, Toronto, Ont., 8th March, 1878, for 5 years.

Claim.—A preservative and renovative compound wash or paint, composed of Portland Cement, native cement, grey lime and plaster of Paris mixed, or other equivalent materials in a liquid composition of water sulphuric acid or spirits of salts and hydrochloric acid, or their equivalents.

No. 8501. Machine for Washing Clothes. (*Machine à laver le linge.*)

Edward S. Redfern and Charles Burns, Meaford, Ont., 8th March 1878 for 5 years.

Claim.—1st. A tube C having a flaring flange C₁ and a plunger D, worked by a rod E in the usual way in combination with a closed cylinder, 2nd. The perforated detachable mouthpiece, having a hinged valve H and connected into the end of the tube C provided with a plunger D, in combination with the closed cylinder A having spout B.

No. 8502. Improvement on Shutters. (*Perfectionnement des persiennes.*)

Asher Bijur, New York, U.S., 8th March, 1878, for 5 years.

Claim.—1st. The combination of the slats with a slat rod and adjusting mechanism arranged at one end of the slats, at the inside of the shutter frame, so as to be entirely out of sight; 2nd. The combination of a shutter frame having a recessed stile, with slats turning in a perforated supporting frame and with adjusting mechanism applied to the pivots at one end of the slats and fitted into the recess of the stile, so as to be enclosed thereby; 3rd. The combination of a shutter frame having recessed stile, with slats a slat carrying frame and a balanced adjusting mechanism, applied to the pivots at one side of the slats, the adjusting and balancing mechanism being fitted into the recessed stile and enclosed by the same and the slat carrying frame; 4th. The combination of slats B, mortised frame C and balanced slat rod D, pivoted to fixed and recessed crank arms of the slat pins outside of perforated detachable frame C.

No. 8503. Improvements on a Folding Chair. (*Perfectionnements a un pliant.*)

Edwin S. Pratt, Buffalo, N.Y., U.S., 8th March, 1878, for 5 years.

Claim.—1st. The double slotted arm D; 2nd. In folding chair, a seat composed of a series of slats secured transversely, said seat being pivoted to the chair frame and adapted to move rearward and downward by a guide, when the chair is folded together; 3rd. The combination with the standards A and legs B, pivoted together by the bolts *b*, of the bolt *b* hollow cylinder C, slats F, transverse piece *f* and the round *a*; 4th. The folding chair consisting essentially of the connected standards A, legs B, double slotted arm D, secured to the legs B by the bolt *b*, and to the standard A by the rosette bolts *d*, hollow round C with the slats F, arranged between the round *a* and the chair back E.

No. 8504. Improvements in Stoves.*(Perfectionnements dans les poêles.)*

John W. Elliott, Toronto, Ont., 8th March, 1878, for 5 years.

Claim.—1st. The internally projecting air pockets B overlapping the fire pot J, and so formed that the air of the room is admitted through an aperture in the lower end of each pocket, and after becoming heated escapes through a hole in the top of the said pocket B, re-entering the room; 2nd. A three way valve I provided with a projection i and placed at the junction of the downwardly inclined pipes M m, in combination with the valve L having a hole O through it; 3rd. The ash pan E provided with a column D having a hole through it, in combination with the poker F; 4th. The lever G connected to the fire pot J and grate K, in combination with the plate H.

No. 8505. Potato Bug Gatherer. *(Appareil à cueillir la chrysome à patates.)*

Alexander Gibson, Burford, Ont., 8th March, 1878, for 5 years.

Claim.—1st. The combination of the adjustable tray in two parts A B and the arrangement of the upper or top edge thereof C D; 2nd. The arrangement and combination of the wire frame E H; 3rd. The combination of the wire or rod H, with the pin F and screw I, also the arrangement and combination of the holes G; 4th. The combination of the adjustable cross piece K, with the handle of the paddle; 5th. The peculiar construction and combination of the various parts.

No. 8506. Improvements on Sewing Machines. *(Perfectionnements aux machines à coudre.)*

Louis Côté, St. Hyacinthe, Que., 8th March, 1878, for 5 years.

Claim.—1st. The foot, in combination with the guides or their equivalent; 2nd. The method of placing the guide or guides on the top of the ether, so that the leather shall pass under them, whilst the strap lies between the guides or the equivalent.

No. 8507. Improvements on Anchors.*(Perfectionnements aux ancres.)*

Charles E. Marshall, Boston, Mass., U.S., 8th March, 1878, for 5 years.

Claim.—The combination of the forked or mortised shank A A² and the swinging fluke B.

No. 8508. Improvement on Sled Poles.*(Perfectionnement des timons de traîneaux.)*

John P. Lawson, Chandler's Valley, Pa., U.S., 8th March, 1878, for 5 years.

Claim.—The combination of the strap E and the screw bolt and nut e, with the pole A and roller B.

No. 8509. Improvements on Steam and other Motors. *(Perfectionnements aux machines à vapeur et autres.)*

Edward Baines, Toronto, Ont., 8th March, 1878, for 5 years.

Claim.—1st. The valve E or its equivalent operated by suitable mechanism, and arranged to admit steam or other operating medium to the cylinder of an engine, say, during that portion of the stroke indicated on the crank diagram, from 1 to 2 and from 3 to 4; 2nd. The valve E or its equivalent arranged to permit the steam or other operating medium of an engine or motor to pass from one side of the piston to the other, producing an equilibrium of pressure on each side of the piston, during that portion of the revolution of the crank indicated say from 2 to 3 and 4 to 1; 3rd. The process of utilizing the exhaust steam or other operating medium of an engine or motor, the said process consisting in exhausting the steam from one side of the piston to the other, at or before the termination of the piston's stroke for the purpose of reducing the amount of live steam necessary to be supplied to the cylinder on the next stroke; 4th. The valve J placed on the exhaust side of an engine or motor, for the purpose of preventing the admission of air or other matter into the cylinder or connections, and for the purpose of retaining heat in the cylinder, condenser and connections, and also for the purpose of obtaining hot feed water, or for the purpose, if desirable, for exhausting a portion of the steam into the boiler or elsewhere; 5th. A chamber B into which steam or other expansive matter is expanded from the generator through a variable pressure valve, before it is admitted to the engine or motor; 6th. A condenser having pipes or chambers through which the feed water drawn from said condenser is passed for the purpose of re-heating the feed water before passing it into the boiler; 7th. The combination of generator with variable expansion valve, expansion chamber, engine or motor with valve E or its equivalent, condensing and heating chamber, waste pipe and exhaust pipe, provided with a valve J or its equivalent; 8th. The waste pipe K, condensing chamber C² and hot well E, arranged in connection with the exhaust pipe of an engine provided with the valve J, for the purpose of obtaining a supply of hot water from the condensation of the exhaust steam.

No. 8510. Process for Manufacturing Felted Surgeon's Splints. *(Procédé de fabrication des éclisses de chirurgie feutrées.)*

David Ahl, Newville, Pa., U.S., 8th March, 1878, for 5 years.

Claim.—Treating the felted blank in a solution of shellac and alcohol, then drying and puncturing it, then treating it in an acid bath, then washing it in cold or warm water, then softening it in boiling water, and moulding it in the desired form.

No. 8511. Improvements in Horse Shoes.*(Perfectionnements dans les fers à cheval.)*

Isaac N. Lilly, Chicago, Ill., U.S., 8th March, 1878, for 5 years.

Claim.—1st. A horse shoe provided with dovetailed seats for the calks, in combination with calks provided with dovetailed shanks corresponding to said seats; 2nd. The shoe A provided with seats B and E having dovetailed

grooves therein, in combination with the calks C and F provided with dovetailed shanks and a fastening device by means of which the calks are secured to prevent slipping laterally; 3rd. The shoe A provided with dovetailed seats for the calks in combination with the dovetailed calks C and F provided with recesses or depressions on one side, and the fastening ribs D and G struck up into the said depression.

No. 8512. Antifriction Bearing for Shafts and Axles. *(Coussinet à antifriction pour les arbres et les essieux.)*

Thomas H. King, San Francisco, Cal., U.S., 8th March, 1878, for 5 years.

Claim.—1st. The rollers E mounted in series alternating with each other so as to form an annular alternate bearing for the shaft, axle or pin; 2nd. The ring F having the pins G projecting from opposite sides, each set alternating with those upon the opposite side of the ring for the purpose of retaining the rollers in their relative positions; 3rd. The case, box or bushing B with the flanges C and the central flange or flanges D to serve as a thrust bearing and form an independent groove for each set of rollers; 4th. The case or box B with its permanent flange C in combination with the removable flange C and its threaded rim acting as a bushing to the outer one, and receiving the wearing contact of the rollers, being removable as described; 5th. The method of forming a steadying centre consisting in the flanges CC made convex, or having the plane of their faces projected slightly beyond that of the pulley.

No. 8513. Improvements in Gas Burners.*(Perfectionnements dans les becs à gaz.)*

George P. Sheffield, Ontario, and George W. McKee, Brooklyn, N.Y., U.S., 8th March, 1878, for 5 years.

Claim.—1st. In combination with a gas burner of the construction of the base or stem A consisting of the opening d, flanges F G, valve seat c corrugated valve E, auxiliary tube B having level top to fit the roof of the regulating cap C; 2nd. In combination with a gas burner of the construction of the regulating cap C consisting of the annular recesses f f¹, the A-shaped inner roof, openings g, &c., for regulating the flow of gas from the outside; 3rd. In combination with the bulb or reservoir D of the annular projecting ring i on its lower end, and which is made to be inserted in the recess f of the cap C and secured thereto by the edge of the same being bent or spun over it; 4th. In combination with a gas burner, of the arrangement of attaching a reflector J by means of its being secured to the wires I, the lower ends of said wires being inserted in the holes a b c, in the flanges F G; 5th. In combination with a gas burner, of the arrangement of attaching a shade K by means of bent wires h h¹, their lower ends being inserted in the holes a b c when the reflector is not in use, and the shade resting on their bent tops; 6th. A gas burner consisting of the combination of the stem or base A with the flanges F G, and provided with the openings a b c for shade and reflector supports, valve E, auxiliary tube B, regulating cap C, and provided with recesses f f¹, openings g, &c., A-shaped inner roof, the annular ring i on the lower end of bulb D; 7th. The combination of the cap C and bulb D with annular ring i, constructed so that the bulb can be turned within the recess of the cap, without disturbing the position of the cap after it is regulated, for the purpose of adjusting the flat side of the flame to a wall when the burner is placed near it, by simply turning the said bulb.

No. 8514. Adjustment of Carriage Poles and Shafts. *(Mode d'ajustage des limons et limonnières de voitures.)*

William T. Cleveland, Richmond, Que., 8th March, 1878, for 5 years.

Claim.—The combination frame, together with the telescopic pole f and socket s, pin p, braces K K K K, main rod I, adjustment attachment bars g g, set screws j j and revolving eyes h h.

No. 8515. Improvements on Horse Collar Pins. *(Perfectionnements aux chevilles des colliers de cheval.)*

Louis Dion et Arthur Dion, St. Thomas, Que., 8th March, 1878, for 5 years.

Résumé.—L'arrangement et la combinaison du tenon E et K et la rainure H et M.

No. 8516. Improvements in Wooden Pumps.*(Perfectionnements dans les pompes en bois.)*

William R. May, McClemons, Mich., U.S., 8th March, 1878, for 5 years.

Claim.—A tapered plug D having the foot valve E hinged thereon, and the bail F attached to it, in combination with a metallic cylinder C inserted into the tubing B of a wooden pump.

No. 8517. Improvement on Hydrant Valves.*(Perfectionnement des valves de bornes-fontaines.)*

Franklin B. Stevens, Joseph L. Bond, Port Huron, Mich., U.S., and Charles McKenzie, Sarnia, Ont., 8th March, 1878, for 5 years.

Claim.—The improved hydrant valve consisting of the casing A, valve plate B constructed with or without the arch b and bearing b¹ b², cut off valve C, waste valve D, having extension d and projecting nipple F.

No. 8518. Heel Nailing and Trimming Machines. *(Machine à cheville et parachever les talons.)*

Charles W. Glidden, Lynn, Mass., U.S., 8th March, 1878, for 5 years.

Claim.—1st. A heeling machine provided with mechanism to nail a heel to a shoe, the last spindle, and last spindle adjusting mechanism, to automatically change the position of the last spindle to permit the application of the main body of the heel and then of the blind top lift; 2nd. The nailing spindle, last spindle, adjusting mechanism and connecting lever to operate then in unison; 3rd. The combination of the following instrumentalities, viz. the trimming shaft, its arms, the trimming lever connected with the carriage, the loose gear-wheel provided with internal teeth 19, clutching mechanism

to engage such gear wheel, and a continuously rotating shaft and loose pinion, and friction devices to operate the loose pinion; 4th. The combination of a trimming shaft, its loose gear-wheel and clutching mechanism, to engage the wheel and rotate the trimming-shaft at suitable intervals; 5th. The combination of a trimming-shaft, a loose gear-wheel, clutching mechanism to engage them, and a pawl holding device, to hold the pawl of the clutching mechanism from contact with the loose gear-wheel; 6th. The pawl holding device, trimming shaft and its fixed arm, in combination with a stop, to arrest the motion of the trimming shaft as the pawl-holder removes the pawl from engagement with the loose gear of the trimming shaft; 7th. The continuously rotating shaft, its loose pinion, and friction devices, combined with devices to adjust and regulate the amount of friction between the friction-devices and loose pinion according to the resistance offered to the movement of the trimming mechanism; 8th. The combination with the toggle-joint, and nailing spindle, of a shouldered lever, and a connected treadle to lift it in order that the link may be operated to straighten the toggle joint; 9th. The combination with a treadle and teeth located at its fulcrum, of a gear and cam or equivalent to break the toggle joint off and lower the nailing spindle; 10th. The combination with the connecting lever located between the nailing spindle and last spindle adjusting-mechanism, of a hand lever to permit the connecting lever to be disconnected from the nailing spindle.

No. 8519. Improvements on Ticket Registers. (*Perfectionnements aux registres des billets.*)

Benjamin C. Pole, Washington, D. C., U. S., 12th March, 1878, for 5 years.

Claim.—1st. A sealed-up ticket register, provided upon its interior surface with a coating of transfer composition or its equivalent, in combination with a ticket receipt enclosed therein, having upon it a coating of transfer-composition of a different color, for recording the action of stamping, writing or marking; 2nd. A built up cover, case or sheath D folded to form a pocket prepared with transferring composition, in colors and stripes, secured to a back G and provided with a ticket receipt F which has a drawing tag or string I to draw, turn over, injure, or remove a color-check; 3rd. A writing ticket register, provided with manifold paper or transfer composition, for recording the action of writing, marking or stamping, divided into divisions A₁, A₂, A₃ or more, having perforations a₁ with gaps a₂ and a₃, overlapping paper a₄ and a₅ folded and sealed, forming a tearing piece a₇ and ticket receipt A₂ with color-check or checks; 4th. A writing ticket register provided with a double seal d₁ and d₂, double transfer composition D₃, D₄, single or double ticket register F with color changing drawing strip I, eyelet G₁ or equivalent, and hard back G; 5th. A writing ticket register holder, provided with tearing edges C₄, gaps C₃, openings C₁ and C₂.

No. 8520. Improvements on Anchor Catheders. (*Perfectionnements aux bossoirs d'ancre.*)

John W. Dearman, Maitland, N. S., 12th March, 1878, for 5 years.

Claim.—1st. In combination with the cathed A, the chain wheel C having peripheral ratchets D and heads E, having pawls G engaging therewith and provided with levers H mounted on a frame B, bolted to the cathed, operating the chain to hoist the anchor from the hawse hole for stowage; 2nd. In combination with frame B of the lever L operated thereto, connecting rod M and pivoted disk N having a central aperture whereby the fid J is latched and tripped; 3rd. The combination in a frame B of the ratchet chain wheel C operated by pawls and levers G H mounted on shaft F for hoisting the anchor, and a tripping device consisting of the pivoted and perforated latching disk N, connecting rod M and pivoted lever L and a chain-stopper K.

No. 8521. Machine to Facilitate the Cutting out of Dresses. (*Machine pour faciliter la taille des robes.*)

Eliza A. Godkin, Elizabethtown, Ont., 12th March, 1878, for 5 years.

Claim.—A dress model shaped as shewn, and made of card-board or other similar material lettered at different points, perforated with three rows of holes which are numbered in a dark rule, also made of card-board or other similar material, divided into inch spaces numbered, with which model and rule by following the directions printed on the model dresses may be laid out, and cut according to measurements, and the process of cutting out so as to obtain a correct fit greatly facilitated.

No. 8522. Combination of Wheels for Counting Time Past and Future. (*Combinaison de roues pour compter le temps passé et future.*)

James I. Bogue, Montreal, Que., 12th March, 1878, for 5 years.

Claim.—The combination of wheels, one or more of which being divided on both sides or edges into three hundred and sixty-five notches, the application of knobs or handles dividing the same on the face of circumference (or spherical face) thereof, the application of clasps, catches or lockers and balance weights, and also the application of words, letters, figures and rules or indicators on the face of the circumference (or spherical face) of said wheels.

No. 8523. Improvement on Plaiting Machines. (*Perfectionnement des machines à plisser.*)

James G. Brown and George T. Cooke, Stratford, Ont., 12th March, 1878, for 5 years.

Claim.—The combination of the stand A and bars B with knife C and press-board D.

No. 8524. Improvements on Steam Engine Lubricators. (*Perfectionnements aux graisseurs de machines à vapeur.*)

William Stafford, Montreal, Que., 12th March, 1878, for 5 years.

Claim.—1st. The combination of the screw C in cover e and bearing on valve d; 2nd. The combination of the inner vessel or filter g having a perforated bottom or sides h; 3rd. The combination and arrangement of the cup f, valve screw c, cap e and vessel or filter g.

No. 8525. Improvements on Shovel Handles. (*Perfectionnements aux manches des pelles.*)

Barnabas A. Higgins, Farmington, Me., U. S., 12th March, 1878, for 5 years.

Claim.—1st. Shaping a blank square at the portion to be separated by kerf D and below the crotch, and the portion below the same rounded previous to bending the blank in a former, to the required form; 2nd. A handle for shovels, &c., having the side portions a b and a portion below the crotch rectangular in cross-section, the portions a b bent to receive the hand bar E interveningly.

No. 8526. Improvements on Washing Machines. (*Perfectionnements aux lavuses mécaniques.*)

George Buchanan, Washington, Pa., U. S., 12th March, 1878, for 15 years.

Claim.—1st. The combination of the box A, plates or supports C C₁, stirrups D D, brackets G G and base or stool E; 2nd. The traveller consisting of the sides I I and perforated end pieces I I₁, and mounted upon rollers a a; 3rd. The removable weight J, in combination with the traveller I I and the rubber or other packing b; 4th. The plate H provided with round pin h and pointed pin h₁; 5th. In combination with a rocking box, the perforated block L moving upon rollers and provided with interior removable blocks L₁.

No. 8527. Art of Lining and Covering Wells. (*Art de murailles et couvrir les puits.*)

Charles James, Port Colborne, Ont., 12th March, 1878, for 5 years.

Claim.—The combination of the center frames a a with keys c c and formation A A.

No. 8528. Improvements on Shovels and Tongs. (*Perfectionnements aux pelles et aux pincettes.*)

George W. Whelan, Sun Prairie, Wis., U. S., 12th March, 1878, for 5 years.

Claim.—1st. The combination of the tong arm A sliding endwise in the hollow handle D, of the shovel arm B and interposed spring d; 2nd. The combination of the tong A slotted as described, and provided with a guard or thumb piece C, the shovel B having a spring d, and the handle D having a bolt or rivet e.

No. 8529. Improvements on Hoists. (*Perfectionnements aux élévateurs.*)

John Beatty, Montreal, Que., 12th March, 1878, for 5 years.

Claim.—1st. The gates G counterbalanced to slide vertically in inclined grooves or ways H in the posts A, and by the rising and falling of the platform by pivoted detents O and lugs N or their equivalents; 2nd. The weights I counterbalancing the gates G sliding in inclined vertical grooves or channels J in the posts A and operated by the ascent and descent of the platform, by the detents P and lugs N, or their equivalent, for lifting the gates.

No. 8530. Improvements on Digging Machines. (*Perfectionnements aux scarificateurs d'agriculture.*)

Thomas C. Darby, Chelmsford, Eng., 12th March, 1878, for 5 years.

Claim.—1st. The combined arrangement of digging machine, consisting of a steam boiler and engine A, propelling legs G ranged along one side of the machine, movable rod H for varying the position of the fulcrums of these legs, and a series of digging forks O worked together with the legs; 2nd. The construction of steam digging machines with a row of digging spades or forks O, ranged along one of the longer sides of the implement, so that the machine when at work travels sideways ever the hand whilst it can be moved endwise when travelling over roads; 3rd. The combined arrangement of supporting and propelling legs G with movable fulcrums I and rod H for varying the position of the fulcrums for supporting and propelling agricultural implements; 4th. The combined arrangements of supporting and propelling legs G and digging spades or forks O working therewith; 5th. The construction of agricultural implements to be worked by steam power with a horizontal boiler A and engine similar to an ordinary portable agricultural engine, and arranged to be moved sideways over the land when at work, and endways when travelling over roads.

No. 8531. Improvements in Rotary Harrows. (*Perfectionnements dans les herses rotatoires.*)

William T. Nichols, Chicago, Ill., U. S., 12th March, 1878, for 5 years.

Claim.—1st. The cross-bars e provided with inclined lugs or arms e₁, in combination with the spirally-wound metallic strips F; 2nd. The screw or spiral rotary scarifiers E in combination with shafts C jointed and adjustable at their inner ends; 3rd. The rotary screw-scarifiers E in combination with the slide D, shaft C jointed thereto, and stop pin d; 4th. The cam I attached to one end of a revolving scarifier E, in combination with the pivoted lever K provided with pin K and distributing slide of the seeder; 5th. The upright guard frame O attached to the rear of the main frame and arranged in front of the driver.

No. 8532. Improvements on Lubricators. (*Perfectionnements aux graisseurs.*)

John T. Cody, Cincinnati, Ohio, U. S., 12th March, 1878, for 5 years.

Claim.—1st. The combination of the glass-vessel A having one or more recesses or notches a and a circular groove b, the metallic screw-threaded collar C having one or more projections c, to fit said notch or notches, and the split ring E; 2nd. In combination with the perforated stem D of the vessel, the adjusting-screw G having an aperture g, a sunken screw-driver head, and an elastic gasket H under the same.

No. 8533. Improvements on Ear Mufflers.*(Perfectionnements aux oreillères.)*

Chester Greenwood, Farmington, Me., U. S., 12th March, 1878, for 5 years.
Claim.—1st. The elastic metallic body A provided with the pads F F, the frames C of the pads being formed of wire having the beads or angles $x x z z$; 2nd. The spring body A pivotally connected at the ends to lugs G, hinged to the pad frame C formed of wire having the beads or angles $x x z z$; 3rd. The spring body A constructed of two parts slidingly adjustable, having the pads F.

No. 8534. Improvement in Carpet Sweepers.*(Perfectionnement dans les balayeuses de tapisserie.)*

Henry A. Gore and Edward W. Walker, Goshen, Indiana, U. S., 12th March, 1878, for 5 years.

Claim.—1st. The combination of the levers B, driving wheels C and friction wheels G; 2nd. The combination of the spring e and levers B.

No. 8535. Contrivances for Conducting Grain to the Eye of a Millstone.*(Appareil pour amener le grain à l'aillard d'une meule.)*

John G. Kirkby, Wingham, Ont., 12th March, 1878, for 5 years.

Claim.—The dropper socket A, valve C, conductor D and index E.

No. 8536. Machine for Driving Millstones.*(Machine à mettre les meules de moulins en mouvement.)*

Albert Cunningham, Milwaukee, Wis., U. S., 12th March, 1878, for 5 years.

Claim.—1st. The combination of a mill spindle, a grinding stone suspended thereon by a bail or balancer and an intermediate driving sleeve pivoted to the spindle in such manner as to have a universal motion thereon, and provided with trunnions engaging with the bail; 2nd. The combination of the driving sleeve B, spindle A, block F and pivots a a; 3rd. The combination of the spindle A, the stone H suspended thereon by the bail B, the block F pivoted upon the upper end of the spindle and the driving sleeve B pivoted at its upper end to the block and provided at its lower end with trunnions d entering recesses in the bail; 4th. The combination of a mill spindle, a grinding stone having at or near or above its centre a bearing on said spindle and a separate pivoted driving sleeve extending and transmitting power from the upper end of the spindle directly to the lower part of the stone.

No. 8537. Improvement in Meters and Motors.*(Perfectionnement dans les compteurs et moteurs.)*

Henry B. Hayes, Woburn, Mass., U. S., 12th March, 1878, for 5 years.

Claim.—1st. The mode of operating the valves of a reciprocating piston by power generated from the travelling piston and stored and automatically released and applied to the valves governing the inlet and outlet passages; 2nd. The combination with the valves regulating the inlet and outlet passages of a spring or its equivalent in which power is stored by the movement of the piston, and devices operated by the piston, for releasing the spring and transmitting its power to the valves; 3rd. The combination of the piston, its valves and latches for holding the same, devices for operating said latches and releasing the valves at the end of the stroke, and spring weights or equivalent devices in which power is accumulated by the movement of the piston arranged to operate the valves when released; 4th. The combination of the cylinder, its reciprocating piston, hollow piston-rods extending into the inlet and outlet pipes communicating with two passages in the piston, and valves constructed to open each passage on opposite sides of the piston alternately; 5th. The vitreous cylinder of uniform diameter combined with a reciprocating piston, valves and operating devices.

No. 8538. Improvements on Grain Reducing Machines.*(Perfectionnements aux machines à réduire le grain.)*

Sweeting Miles, Closter, N. J., U. S., 12th March, 1878, for 5 years.

Claim.—The combination with the toothed cylinder C of the series of circular revolving cutters d, working between the teeth of said cylinder.

No. 8539. Improvements in Ice-Scrapers.*(Perfectionnements dans les chasse-neige.)*

Télesphore F. Goulette, Montreal, Que., 12th March, 1878, for 5 years.

Claim.—1st. In combination with a curved plate secured to a frame, raised or lowered at will, a shoe removably attached thereto, and running on the inside of the rail; 2nd. In combination with a curved plate used as an ice scraper, a shoe removably attached thereto, and projecting down below the surface of the rail, on the outside of it.

No. 8540. Improvements on Spring Beds.*(Perfectionnements aux lits à ressorts.)*

Philip Mudge, Ingersoll, Ont., 12th March, 1878, for 5 years.

Claim.—1st. The springs B having an arm b, to hook in the coil of next spring in alignment; 2nd. The springs B having a hooked end to receive the hooked end of the arm b, of the springs B; 3rd. The combination of the springs B having arm b, springs B having a hooked end connected and arranged as set forth.

No. 8541. Machine for Adjusting Carriage Bodies while being Ironed.*(Machine à assujétir les caisses de voitures pour les ferrer.)*

William Potter, Gananoque, Ont., 12th March, 1878, for 5 years.

Claim.—1st. The screw A, arm B, brace C, support D, extension bar E and hook F.

No. 8542. Improvements on Door Fastenings.*(Perfectionnements aux fermetures des portes.)*

John G. Phillips, Bangor, Me., (Assignee of Charles R. Arnold, Bloomingdale, N. Y.), U. S., 14th March, 1878, (Extension of Patent No. 6830,) for 5 years.

No. 8543. Improvements in Saws.*(Perfectionnements dans les scies.)*

William Firstbrook, Toronto, Ont., 14th March, 1878, for 5 years.

Claim.—A rip saw A having teeth B separated by spaces C and arranged so that each tooth in the saw serves the double purpose of cutting and clearing tooth.

No. 8544. Improvements on Window-Sash Regulators.*(Perfectionnements aux arête-croisées.)*

William Thomson, Toronto, (Assignee of Francis Munn, Strathroy,) Ont., 14th March, 1878, for 5 years.

Claim.—1st. The bracket A with a base plate, having rounded ends and gracefully formed jaws A¹ with slotted bearings B, in combination with the stationary spindle C, clock spring D and cylinder form case E; 2nd. The spindle C having a longitudinal slot, to receive the end d of the spring D, in combination with the cylinder form case E having a slotted opening e, to receive the end of the spring D and end q of the tape G; 3rd. The friction roller H held in the ferrule and let into the sash K, for the purpose of permitting the sash K to work easily within the window frame.

No. 8545. Improvements in Gas Burners.*(Perfectionnements dans les becs à gaz.)*

Francis D. Bliss, New-Haven, Ct., U. S., 14th March, 1878, for 5 years.

Claim.—The combination of a main and an auxiliary jet of a plug cock which controls only the main jet, and a screw plug within the main plug; in combination with the tapered plug cock and its spring of a cap which is connected to the plug, and incloses its projecting end and its spring.

No. 8546. Improvements in Fire-Escapes.*(Perfectionnements dans les appareils de sauvetage d'incendie.)*

Constantino Fugazzi and Frank Fugazzi, Philadelphia, Pa., U. S., 14th March, 1878, for 5 years.

Claim.—1st. A safety-waist attachment, the same consisting of the belt A provided with the eye B and pockets c d; 2nd. The safety rope, the same consisting of a length of rope provided with an attaching hook, and a spike at opposite ends; 3rd. The crane F and eye G, in combination with the rope B and its connecting spike f.

No. 8547. Improvements on Lamp Burners.*(Perfectionnements aux becs des lampes.)*

Francis Holt, Thomas Brintnall and William T. Rae, Newark, N. J., U. S., 14th March, 1878, for 5 years.

Claim.—1st. A wick tube made of a single piece of metal and provided with openings at or near its center and at a point below the flame for preventing the heat from communicating with the oil reservoir; 2nd. A wick tube C provided with the openings a and having the metal above and below said openings made bulged or flaring outward; 3rd. The combination of a perforated or slotted wick-tube C and an exterior hood G, said hood extending slightly above the perforations, but falling short of the point of combustion sufficiently to prevent the downward conduction of heat, an air passage being formed around the wick tube at the terminus of the hood; 4th. A lamp burner with air spaces in the wick tube whereby the heating of the metal of such wick tube is cut off from the oil reservoir.

No. 8548. Combined Apparatus for the Production of Gas and Generation of Steam.*(Appareil combiné pour la production du gaz et de la vapeur.)*

John H. Needles, Toronto, Ont., 16th March, 1878, for 5 years.

Claim.—1st. The combination in one bench of one or more gas retorts, one or more steam boilers and one or more furnaces, whereby one or more fires serve to heat the retort or retorts and boiler or boilers; 2nd. A bench consisting of horizontal gas retorts B B, heated by central furnace C, vertical retorts D heated by a side furnace or furnaces C₁, and the boiler A wholly or partly within the bench heated from either or all of the furnaces; 3rd. In combination with a vertical retort D having a bottom outlet pipe G, the removable tapering bucket P having a perforated bottom and inserted therein, to form an intermediate chamber U; 4th. In combination with the vertical retorts D, the inserted removable buckets P having a perforated bottom and stand pipe T.

No. 8549. Improvements on Saw Files.*(Perfectionnements aux limes à scies.)*

Eben M. Boynton, New York, U. S., 20th March, 1878, for 5 years.

Claim.—1st. The file provided with one or more notches m to admit the teeth of a saw, whereby the file is adapted for use, both as a file and as a set; 2nd. A saw file, having its two ends flattened and rounded.

No. 8550. Apparatus for Drawing off or Decanting Fluids.*(Appareil à tirer ou transvaser les liquides.)*

Aron Bernstein, Friednan, Prussia, 20th March, 1878, for 5 years.

Claim.—1st. The handle a with its axle and toothed wheel g, in combination with the pipes h i k l n o p and measuring vessels z₁ z₂; 2nd. The handles a b c with their pipes h i k l n o p, in combination with the pipes n and r; 3rd. The measuring vessels z₁ z₂, in combination with the screw u and valve v; 4th. The handles a b c with their axles and toothed wheels, in combination with the racks and catches z₁ z₂ z₃ z₄ z₅ z₆, and toothed wheel S with index and dial; 5th. The stopper P, in combination with the pipes p and q.

No. 8551. Improvements in the Manufacture of Belting. (*Perfectionnements dans la fabrication des courroies.*)

Amadee Spadone, Jersey, N.J., U.S., 20th March, 1878, for 5 years.

Claim.—1st. A belt composed of a rubber coated fabric, folded or constructed with two or more plies, and provided with metallic strips (preferably of tempered steel), arranged longitudinally between the plies, and caused to adhere to the inner rubber coating of the adjacent surfaces; 2nd. A belt composed of a rubber coated fabric, folded or constructed with two or more plies, and provided with metallic strips (preferably of tempered steel) arranged longitudinally between the plies, and covered with a wrapped or braided fabric or rubber cement, or both, and caused to adhere to the inner rubber coating of the adjacent surfaces; 3rd. An endless belt composed of a rubber coated fabric, and provided with a strip of metal (preferably of tempered steel) arranged spirally.

No. 8552. Improvements in Steam Exhausts. (*Perfectionnements dans les soupapes d'expiration.*)

George S. Brainerd, St. Albans, Vt., U.S., 20th March, 1878, for 5 years.

Claim.—1st. One or more fixed or permanent blast nozzles C C, in combination with one or more separate and independent adjustable nozzles F F; 2nd. The plates B and D, one fixed and the other movable, working or sliding upon each other and each provided with one or more blast nozzles C C and F F, the nozzles F F corresponding with the ports or passages E E in the plate B, said ports being opened or closed entirely or partially by the motion of the plate D, which may be adjusted at pleasure; 3rd. In combination with the fixed and movable plates B and D, and the stud or arm c, the set screws d d working in the slots e e or their equivalents, to retain and limit the motion of the upper plate D.

No. 8553. Improvements on Spring Hinges. (*Perfectionnements aux pentures à ressort.*)

James Spruce, Waterbury, Ct., U.S., 20th March, 1878, for 5 years.

Claim.—1st. In a hinge composed of two or more leaves, the combination therewith of a spiral spring around the pintle, its two ends bearing upon the respective leaves of the hinge, and a collar projecting from the knuckles of each part into the respective ends of the spring, and between the spring and the pintle; 2nd. In a hinge composed of two or more leaves, the combination therewith of a spiral spring around the pintle, its two ends bearing upon the respective leaves of the hinge, and a collar within the spring at each end, and loose upon the pintle.

No. 8554. Improvements on Sash Fasteners. (*Perfectionnements aux arrête-croisées.*)

Stephen Rush, Tyrone, Pa., U.S., 20th March, 1878, for 5 years.

Claim.—1st. The combination of the casing, the division plate forming two compartments therein, a vibrating lever or bolt mounted in one of the compartments, and a spring for preventing accidental withdrawal of the bolt when shot, mounted in the other compartment; 2nd. The combination of the casing, the vibrating lever mounted therein, either end of which is adapted to constitute a bolt, its shaft, the cam or projection on the shaft, a spring acting on the cam and a handle or key for controlling the vibration of the lever; 3rd. The combination of the casing, its division plate, the shaft rocking in bearings in the casing, the cam mounted thereon, the spring acting on the cam, and a plate carried by the shaft or cam, between which and the division plate the spring is confined to prevent lateral displacement thereof.

No. 8555. Improvements on Harvesters. (*Perfectionnements aux moissonneuses.*)

John J. Dewey, Lake, Minn., U.S., 20th March, 1878, for 5 years.

Claim.—1st. The combination of the elevating cylinder with the platform of a harvester; 2nd. The inner or upper shell D made of parallel strips, in combination with the elevating cylinder and platform of harvester; 3rd. The concave surface C, in combination with the inner shell formed of strips the elevating cylinder and a harvester platform; 4th. The curved opening or space, through which the grain is elevated, formed by the bands forming the inner shell D and the opposite concave surface C, which are spread apart at the top to form a receptacle H I for the grain; 5th. The combination of the receptacle, the band and opposing concave surface, with the elevating cylinder or its equivalent, and the platform of a harvester; 6th. The binder's tables L L, in combination with the receiver, the bands and opposing surface, the cylinder and the platform of a harvester; 7th. The binder's platform K, in combination with the binder's tables, the receiver, the bands and opposing surface, the cylinder and the platform of a harvester; 8th. The binder's seat J adjustably connected to the frame by means of the perforated arms h and screws f; 9th. The arrangement of the gearing b F d, to operate the cylinder and apron or their equivalents; 10th. A cylinder elevator made to extend forward of the line of cut; 11th. A cylinder elevator, or its equivalent, made to revolve in the direction shown i e, towards the standing grain at the top and from it at the bottom.

No. 8556. Improvements in Road-Scrapers. (*Perfectionnements dans les éboueurs de chemins.*)

Houston C. Robb, (Assignee of Isaac Robb and Bennami Selph,) Lynchburg, Ohio, U.S., 20th March, 1878, for 5 years.

Claim.—1st. The concave shovel A having a scraping edge A₁ and pivoted within the frame D, in combination with the semi-circular angle iron runners C C; 2nd. A rotating scraping shovel A provided with notched plates M M and stops N N, in combination with the bar H operated by the levers J J and handle L.

No. 8557. Improvements in the Gear of Buggies. (*Perfectionnements dans les trains des voitures.*)

William H. Morrison, Canning, Ont., 20th March, 1878, for 5 years.

Claim.—1st. A malleable cast iron head block A, in combination with a single or double reach B made of even tube or pipe, and provided with malleable cast iron mountings, the whole arranged to form a running gear of a buggy or similar vehicle; 2nd. A malleable cast iron head block A, recessed to receive the nut G used to secure the king bolt H.

No. 8558. Improvements on Pumps. (*Perfectionnements aux pompes.*)

Garrett W. Low and David K. Dean, Erie, Pa., U. S., 20th March, 1878, for 5 years.

Claim.—1st. The oscillating arm S₁, in combination with the lever h₁ having a movable fulcrum C; 2nd. The combination of the lever h₁, the oscillating arms S₁ and G₁ and the piston rod d; 3rd. The segments a a a having the interior faces f f, and so constructed and arranged that a part of each segment projects beyond a part of its adjacent segments, to form water tight joints; 4th. The segments a a a, in combination with the elastic ring C, disc e, valve z and pump stock a₁ and ring i; 5th. The pins S S S, in combination with segments a a a, disc e, elastic ring C and pump stock a₁; 6th. The rod d and the socket g, in combination with the bolt e, disc e and nut h.

No. 8559. Improvements on the Treatment of Ores. (*Perfectionnements dans le traitement des minerais.*)

Farnham M. Lyte, London, Eng., 20th March, 1878, for 5 years.

Claim.—1st. The treatment of mixed ores containing lead, silver and zinc, so as to effect the separation of the lead and silver, and also recover the zinc in the metallic state; 2nd. The production of precipitated lead in the form of bricks, and the conversion into bricks of the crude oxide of zinc, excess of lime being prevented; 3rd. The modification of the improved process, where employed for treating silver ores.

No. 8560. Improvements on Treating Ores. (*Perfectionnements dans le traitement des minerais.*)

Farnham M. Lyte, London, Eng., 20th March, 1878, for 5 years.

Claim.—1st. The improved method of treating ores and metallic residues, by the process of sulphatation; 2nd. The treatment of the sulphated material with hot brine, or other chloride solutions, by preference acidulated; 3rd. The recovery of lead and silver from these solutions, by precipitation with zinc; 4th. The recovery of zinc, as rough oxide, under the special conditions of hot precipitation, previous elimination of sulphuric acid, and precautions to avoid the presence of any lime or calcium salts.

No. 8561. Improvements in Roller Skates. (*Perfectionnements aux patins à roulettes.*)

Alfred J. Peerless, Toronto, Ont., 20th March, 1878, for 5 years.

Claim.—1st. A two roller skate, one roller of which is mounted in adjustable bearings, and the other roller mounted in fixed bearings; 2nd. The combination of a flat faced roller, mounted in an adjustable frame with a convex faced roller revolving on fixed bearings; 3rd. The roller frame E provided with concave bearing face E₁ and half-round bearings e e, in combination with the brackets F and G and the pin H; 4th. The foot board A of a roller skate mounted on two rollers, one of which is self-adjusting to the angle of the foot board, and the other rotating in fixed bearings, but provided with a rounded face, to correspond with the lateral motion of the adjustable roller; 5th. The foot plate J with side flanges and lower projection J₁, in combination with the foot board A provided with a series of holes to receive said projection.

No. 8562. Improvement in Cook Stoves. (*Perfectionnement dans les poêles de cuisine.*)

William J. Copp, Hamilton, Ont., 20th March, 1878, for 5 years.

Claim.—In combination with a cook stove of any kind, of a reversible or duplex shelf D attached thereto in front, as shown by bars C or brackets C₁, or to sides or rear of stove.

No. 8563. Improvement on Horse Shoes. (*Perfectionnement des fers à cheval.*)

Harry B. Cornish and Charles P. Hunt, River-Falls, Wis., U.S., 20th March, 1878, for 15 years.

Claim.—The combination of the calks having arc-shaped dove-tail tapering tongues, with the arc-shaped dove-tail tapering grooves in the horse-shoes.

No. 8564. Improvements on Grain Separators. (*Perfectionnements aux séparateurs des grains.*)

Thaddeus C. Histed, Frank Seaton and James M. Champion, Salina, Kas., U.S., 20th March, 1878, for 5 years.

Claim.—1st. A drum for inclosing the fan of a fanning mill, composed of boards c arranged to overlap each other; 2nd. The combination of the screw conveyor, and rotating riddle; 3rd. The brushes i placed in the conveyor through f; 4th. The curved deflector d₁ for directing the fan blast to the rotating riddle F; 5th. The combination of the perforated screen G and the vibrating shaft G; 6th. The screen H composed of the three parallel sieves O O₁ having between them air passages; 7th. The vibrating shaft t and pins K₁, in combination with the shoe I for giving it percussive movement; 8th. The screens r u v, boxes L M and chute K in combination, for separating grain into different grades; 9th. The screen w and valve N for conducting the grain passed by the screen v to chute K; 10th. The hopper D having the removable side piece e.

No. 8565. Combination Bath and Wash Tub. (*Baignoire-cuvette.*)

John H. Jones, Sarnia, Ont., 20th March, 1878, for 5 years.

Claim.—The combination or arrangement of the metallic top or upper portion A with the wooden wash tub B and the flexible support C.

No. 8566. Improvements on Saw Mill Carriages. (*Perfectionnements aux charriots des scieries.*)

Henry Hiscock, Mount Forest, Ont., 20th March, 1878, for 5 years

Claim—1st The two parallel rack bars D having a reciprocal movement lengthwise in a frame G carrying a shaft F having a cog pin in E interlocking the bars D which on alternate ends, are provided with clamps J for securing the log endwise 2nd In combination with the frame G the ratchet drum K on shaft F lever L having pawls M and springs N, for retaining the bars D fixedly when the clamps J are holding the log 3rd The knee standards A provided with slides R having pawls S for elevating the bars D 4th In combination with the knee standard A the dog T connecting rod I lever V and segment rack W for holding the log by dogging.

No. 8567. Improvements on Threshing Machines. (*Perfectionnements aux machines à battre.*)

Francis W. Glen, Oshawa, Ont., 20th March, 1878, for 5 years.

Claim—In case hardening the point C₁ of a threshing machine cylinder and concave tooth C.

No. 8568. Improvement on Weather Strips. (*Perfectionnement des bords des portes.*)

David O. Hink, Maryville, Miss., U.S., 20th March, 1878, for 5 years.

Claim—A weather strip provided with an extension slide, clamped between the drop and spring.

No. 8569. Improvements on Blind Fixtures. (*Perfectionnements aux outillages des rubans.*)

Thomas H. Stanton, London, Ont., 20th March, 1878, for 5 years.

Claim—1st The combination of the cords J K L, hooks A B F and roller I provided with enlarged turned ends O P, 2nd In combination with the above the cord I, hooks C D E and roller G provided with enlarged turned ends M N

No. 8570. Improvements on Steam Boilers. (*Perfectionnements aux chaudières à vapeur.*)

William H. Wilson, William C. Harris and Rollin D. Rockwell, Westfield, N.Y., U.S., 20th March, 1878, for 5 years.

Claim—1st The combination of the annular base A and the segmental sections D D₁ constructed so as to receive the magazine G and suitably connected together at the top, and to the base at the bottom 2nd The combination of the annular base A with the sections D D₁ the steam pipes a and nipples b b and top connections, and the magazine G.

No. 8571. Improvements on Handles for Saws. (*Perfectionnements aux manches de scies.*)

Eben M. Boynton, New York U.S. 20th March 1878, for 5 years.

Claim—1st A cross-cut saw handle consisting of a common hand saw handle D and an upright handle E secured thereto, 2nd A saw handle provided with an internal chamber to receive files and similar tools, and with a screw cap or equivalent device for closing its end; 3rd In combination with a saw provided with ears g, the handle D provided with hole g and the handle E provided with the bolt F washer h and hook i 4th A saw handle provided with an extension rod or bolt F K expanding and contracting by screwing together endwise, 5th The slotted bolt or tang F provided with the lip l and the threaded hole in its upper end, the washer h mounted on the bolt, and the non-rotating handle E provided with the internal bolt or screw K.

No. 8572. Improvements on Gas Apparatus. (*Perfectionnements aux appareils à gaz.*)

William Smith, Pittsburgh, Pa., U.S., 20th March, 1878, for 15 years.

Claim—1st The combination of a series of vertical retorts having deflecting ribs, forming the central flue and side flues, with a series of channelled and perforated side walls, and central flue chamber, 2nd The longitudinally grooved and perforated tile lining for gas retort furnaces, 3rd The flask shaped gas-retort provided with the neck and oil inlet, and adapted to be set vertically; 4th In combination with the flask-shaped vertical retorts, the covers or bearing blocks arranged thereunder

No. 8573. Improvements on Reaping Machines. (*Perfectionnements aux moissonneuses.*)

John Pattison, Dorking, Ont., 20th March, 1878, for 5 years

Claim—1st The combination with, and the application of swivel gear to the working or driving parts of reaping and mowing machines, 2nd The star knuckle marked O separately, as well as in combination with the working parts of reaping and mowing machines.

No. 8574. Improvements on a Child's Waggon. (*Perfectionnements à une voiture d'enfant.*)

Frank X. Reno (Assignee of Abbott Q. Ross), Cincinnati, Ohio, U.S., 20th March, 1878, for 5 years.

Claim—1st The combination of a toy galloping horse mounted upon a carriage, and intermediate means between the horse and the propelling devices of the carriage whereby the galloping of the horse will cause the propulsion of the carriage or vice versa, 2nd The combination of the galloping horse, the wheels of the carriage, mechanism of transmitting the motion from one to the other, and propelling means under the control of the rider, 3rd The combination of the galloping horse, the rems for actuating it, the wheels of the carriage and intermediate mechanism for transmitting motion from the horse to the wheels; 4th The shafts B united in front to form a tongue.

No. 8575. Improvements on Grain Separators. (*Perfectionnements aux séparateurs de grains.*)

James Donnelly, Columbus, Ohio, (Assignee of Edward S. Clark, Buffalo, N.Y.) U.S., 22nd March, 1878, for 5 years.

Claim—1st The wings of a fan for fanning mills made in sections D and D₁, the section D of each wing being stationary on the arms, and the section D₁ adjustable thereon, 2nd The stationary curved grid-screen J placed in front of the fan above the lower set and in rear of the upper set of the movably screen in the shoe, 3rd The springs K for supporting and adjusting the shoe.

No. 8576. Improvements on Vehicles. (*Perfectionnements aux voitures.*)

Sebastian Göttinger and Abel A. Crosby Roundout, N.Y., U.S., 22nd March, 1878, for 5 years.

Claim—A vehicle constructed with U shaped springs arranged in pairs with the fold of one spring opposite to the fold of the other, and the ends of the springs secured to the sills of the body, and to the side bars or other supporting devices.

No. 8577. Improvements in Stringing Sleigh Bells. (*Perfectionnements dans l'onglage des grelots.*)

Frank Armstrong, Bridgeport, Ct., U.S., 22nd March, 1878, for 5 years.

Claim—1st A series of hinged metallic plates with bells attached thereto, and provided with suitable end fastenings, 2nd The plates a, when made in two parts, and connected at their overlapping ends by the shank of the bell, or other rivet.

No. 8578. Improvements on Millstone Dressing Machines. (*Perfectionnements aux machines à rhabiller les meules.*)

Samuel E. Griseom, Pottsville, Pa., (Assignee of Thomas McFeely, Union, Ind.) U.S., 22nd March, 1878, for 5 years.

Claim—1st The combination of the bed-plate B provided with a projection h and adapted to the surface of the stone, with the guide base A connected to the said projection, 2nd The combination of the bed-plate of a millstone dressing machine with the base plate A adapted to be both tilted vertically and adjusted horizontally on the said bed-plate.

No. 8579. Improvements on Millstone Dressing Machines. (*Perfectionnements aux machines à rhabiller les meules.*)

Samuel E. Griseom, Pottsville, Pa., (Assignee of Thomas McFeely, Union, Ind.) U.S., 22nd March, 1878, for 5 years.

Claim—1st The carriage bed pivoted to the sliding frame B and adapted to be inclined in respect to the same for dressing furrows, 2nd The combination of the bed B, its ears Q and slotted standard G with the bed D hung to the ears Q provided with screws K and nuts F adapted to the standards; 3rd The combination of the pivoted bed D with carriage C and its operating mechanism carried by, and adapted to rock with the bed

No. 8580. Improvements on Glass Vessels. (*Perfectionnements aux vases de verres.*)

Daniel W. Norris, Elgin, Ill., U.S., 22nd March, 1878, for 5 years.

Claim—1st An incased glass vessel for containing and transporting liquids, having an elastic metallic rim extending under the edges of the bottom for the purpose of furnishing a support for the vessel without extending right through the bottom when the incased vessel is raised, 2nd The combination of a glass vessel, paper side case, and metal top covering; 3rd In combination with an incased glass vessel, a glass neck or collar around the supply or discharge orifice, having external screw threads, a metal covering around the periphery of the collar, and having screw threads and a screw cap ring, or nozzle adapted to overlap the metal covering, 4th The combination of the lifting ball or handle and the inclosing case with a screw neck and a cap or ring screwing or otherwise secured around said neck, and lapping over the top covering whereby, in lifting the vessel, the whole or a portion of the weight is supported by the screw neck; 5th In combination with the incased glass vessel herein described, the supplemental wooden bottom, 6th The combination with a glass vessel, of a fixed metal cover provided with ears for the carrying ball.

No. 8581. Attachment for Bridling Brushes. (*Appareil à servir les pinceaux.*)

Charles Boeckh, Toronto, Ont., 22nd March, 1878, for 5 years.

Claim—An independent and adjustable bridle for paint, whitewash and other brushes, formed by a stout wire band C, in combination with plates D D to allow of their adjustment upon the screws E used to secure the bridle to the handle B.

No. 8582. Improvements in Lanterns. (*Perfectionnements dans les lanternes.*)

Alfred L. Baron, Evan F. Cash and David Rankin, Bellaire, Ohio, U.S., 22nd March, 1878, for 5 years.

Claim—1st The method of counterbalancing the air currents in a lantern by admitting fresh air taken from above the outer globe through connecting chambers into the cone, and fresh air through the sides of the base to points above the cone, the two currents being kept separate and apart; 2nd The combination of the air chamber C between the two globes, the air chamber C₁ between the double walls of the upper part of the base, and the air chamber C₂ between the top of the oil reservoir and the diaphragm above it, said air chamber being closed except for the entrance of air above the outer globe and for the exit of air into the interior of the cone; 3rd In combination with upper base A of a lantern, of the air chamber C₂ in the same, the openings J J₁ made through the side of such upper base; 4th The combination of the openings J J₁ and the perforated disc N; 5th The com-

bination of the openings J J₁, the disc N and the air chamber C¹ C² C₃, 6th. The combination of the base A A₁, the oil reservoir B and the opening J J₁ extending through the air chamber C² without openings into said air chamber; 7th. The convex top O, in combination with its supports, the open space q and the flange t top of the metallic chimney K₂, 8th. The metallic chimney K₂; 9th. The combination of the metallic chimney K₂, the metallic air deflector S and the clips h. 10th. The combination of the metallic chimney K₂ having attached thereto the clips h and the inner globe or chimney to form the adjusted space between the bottom of the chimney K₂ and the top of the inner globe; 11th. The combination of the outer globe and the inner globe or chimney, of about the same height, the clips h and the metallic chimney K₂. 12th. The combination of the screw threaded plug D₁ having shoulder a, the screw threaded opening D, the air chamber C₁, the diaphragm b and the opening J or J₁; 13th. The perforated supporting plate N; 14th. The combination of the cone H, the deflector H₁ and the perforated supporting plate N; 15th. The air duct c (Figure 6) placed immediately beneath the supporting plate, and the air chamber C₁ between the globes. 16th. In supporting plate G perforated in part and imperforated in part. 17th. The base plate B₁. 19th. The neck B₂. 20th. The openings E with walls a₁ b₁ d₁. 21st. The combination of the openings E, with the air chamber C₂ and air duct C₁; 22nd. The combination of the openings E with the supporting plate G; 23rd. The combination with one of the openings E of the lighting or match hole I. 24th. A lantern having an outer and inner globe or chimney and an air chamber between them and a connecting air duct leading directly to the interior of the cone; 25th. The combination with the air chamber A between the globes, of an air duct D₁ D₂ D₃ D₄ or D₅ for conveying the air to the interior of the cone.

No. 8583. Improvements on Cultivators.

(Perfectionnements aux cultivateurs.)

Moses Johnson and Moses C. Richardson, Lockport, N.Y., U.S., 22nd March, 1878, for 5 years.

Claim.—1st. The beam A, connecting bars a and wings B, 2nd. The braces D secured by bolt or bolts T to beam A, and bars a connecting with the wings B; 3rd. The wings B, braces D, and bolt or bolts T; 4th. The oblong metallic strip J, and standard C, 5th. The braces D loosely connected with the wings B and removably connected with the beam A.

No. 8584. Improvements on Boiler Furnaces.

(Perfectionnements aux fourneaux des chaudières.)

Mary A. Hunter and Lewis J. Ahnon, Saint-John, (Executrix and Executor of the will of James Hunter, Lancaster, N. B., deceased,) 26th March, 1878, (Extension of Patent No. 1624), for 5 years.

Claim.—The combination of the furnaces E F, combustion chamber B and culvert C, constructed and arranged relatively to each other and to the chimney D and boilers A.

No. 8585. Improvements on Horse Rakes.

(Perfectionnements aux râtaux à cheval.)

Alfred H. DeLaney, Peterborough, Ont., 29th March, 1878, for 5 years.

Claim.—The use of the hinge joints H H h h in the position seth forth, the levers K and L, which, combined in action, assist the dumping, drop the teeth and lock the rake, for gathering its load; the elongated holes D D, in wooden axle B, the use of the roller M and of lever L and the pressed sheet iron seats S.

No. 8586. Stone Dressing Machine.

(Machine à polir la pierre.)

Hugh Shearer, Westminster, Eng., Donald R. McGregor and George B. M. Wynn, Leith, Scot., (Assignees of Joseph E. Holmes, London, and Walter Dayton, Westminster, Eng.,) 30th March, 1878, (Extension of Patent No. 2200,) for 5 years.

No. 8587. Improvements on Horse Rakes.

(Perfectionnements aux râtaux à cheval.)

Alexander Howell, Brantford, Ont., 30th March, 1878, for 5 years.

Claim.—1st. The thimbles F and straps G; 2nd. The rake casting N having case O formed on it, and wheel or ratchet Q and pawl P working in case O with lever X; 3rd. Rake casting K and levers R and W; 4th. The application of the hollow shaft D for an axle.

No. 8588. Improvement on Casting Car Wheels.

(Perfectionnement dans le collage des roues de wagons.)

William Wilmington, Toledo, Ohio, U. S., 30th March, 1878, for 5 years.

Claim.—The method of casting car wheels from two different qualities of metal by pouring in, first, the superior metal to form the tread and flange of the wheel, and afterwards the inferior metal to form the central parts of the wheel, and regulating the inflow of both by radial passages, whereby circulating currents and the homogeneous mixture of the two metals avoided at the tread, and the proper disposition of the two metals in the car wheels is secured.

No. 8589. Improvements on Carriage Jacks.

(Perfectionnements aux chèvres à voitures.)

Thomas Hazard, Wilmington, Ohio, U. S., 30th March, 1878, for 5 years.

Claim.—1st. The combination with the upright B furnished with the anti-friction roller C, of the recessed sliding standard D and the eccentric lever F, pivoted to said standard back of the center of its head and operating to raise said standard; 2nd. The combination with the sliding standard, operated by the eccentric lever pivoted thereto, of the rack H and adjustable bracket I.

No. 8590. Improvements on Harvesting Machines.

(Perfectionnements aux moissonneuses.)

William Russell, Dundas, Ont., 30th March, 1878, for 5 years.

Claim.—1st. The trip dog M, wedge N, wedge race and latch O. 2d. The combination of the tappet J, self-tripper L, trip lever G, link H and wedge N.

No. 8591. Machine for Rivetting Stove-pipes.

(Machine à river les tuyaux de poêles.)

Thomas Boardman, Charlottetown, P. E. I., 30th March, 1878, for 5 years.

Claim.—1st. The combination of an apertured arm and a series of rollers for carrying rivets. 2d. The combination with the arm c of the disc o and ring q, each provided with a V-shaped groove. 3rd. The combination of the arm c, follower s, apertured arm k and cam roller d. 4th. The combination of the adjustable bracket m with grooved disk o.

No. 8592. Improvements on Paper Files.

(Perfectionnements aux serres-papier.)

William H. Waller, Ottawa, Ont., 30th March, 1878, for 5 years.

Claim.—1st. The combination of a plate A having longitudinal slots B and transverse slots C, the shaft D passing centrally through the plate A and slots B, and the tapes F passing through the slots C and winding on the shaft. 2nd. The provision to the shaft D of a friction nut L, sliding loosely in a slot H in the plate A for retaining the tension of the tapes.

No. 8593. Improvements on Tombs.

(Perfectionnements aux cercueils.)

James Chittock, Cleveland, Ohio, U. S., 30th March, 1878, for 10 years.

Claim.—A coffin vault or tomb made of plastic material, the lid and door being united by a tongue and groove joint cemented together, and reinforced by said cement extending into and hardening in holes leading into the groove.

No. 8594. Improvements on Refrigerators.

(Perfectionnements aux garde-manger.)

John A. Kunkel, Jersey, N.Y., U. S., 30th March, 1878, for 5 years.

Claim.—1st. The combination of the casing A, the perforated vertical and horizontal partitions B and C forming the chamber D E and F with the sliding drawers having their sides perforated to coincide with the perforations in the vertical partitions. 2nd. The combination with the casing A and vertical partition B having a series of perforations a, of the sliding drawers having in their sides a series of perforations provided with elastic packing d and coinciding with the perforations in the vertical partition only when the drawer is closed. 3rd. The combination of the two opposite perforated walls of a refrigerator chamber, the two interior perforated slides E E, rigidly connected by brace rods H, links G and hinged door B₁. 4th. The combination of the two perforated slides E E rigidly connected so as to move together, with the opposite perforated walls of a refrigerator chamber.

No. 8595. Improvements on Musical Instruments.

(Perfectionnements dans les instruments de musique.)

Alexander R. Koerber, Toronto, Ont., 30th March, 1878 for 5 years.

Claim.—1st. The wind chest C having separate treble and base compartments in combination with independently acting bellows. 2nd. The wind chest C divided into series of compartment c corresponding with the central or accompaniment notes, which compartments are connected by air passages to both independent air bellows, and the admission of air controlled by valves in such manner that the notes corresponding to the said compartments may be played as treble or base notes; 3rd. The travelling cams H, in combination with valves G, wind passages I E, bellows B B₁ and the subdivided wind chest. 4th. The wind inlet valves K operated from the front of the instrument in any suitable manner and arranged for the purpose of suddenly admitting air to the bellows, in order that the performer may subdue the sound of the notes connected therewith.

No. 8596. Improvements on Doors and Gates.

(Perfectionnements aux portes et ports-cochers.)

Charles T. Sweet, Cumberland, Ohio, and Edwin J. Davis, East Galway N. Y., U. S., 30th March, 1878, for 5 years.

Claim.—1st. The combination with a door or gate fastening, of a vibrating support pivoted to the door or gate. 2nd. The combination with a door or gate of a vibrating support, a ratchet bar and a guide. 3rd. The combination with a door or gate having a horizontal bearing c, of a vibrating support C and latch D; 4th. A guided vertically vibrating support and a face, combined with a door or gate having a horizontal bearing; 5th. The combination with a gate or door, having a horizontal bearing, of a vibrating notched support pivoted to the post B.

No. 8597. Improvements on Stump Elevators.

(Perfectionnements aux arrache-souches.)

August Dunnebach, Jacob Landen, Lansing, Mich., and Moses C. Younglove, Cleveland, Ohio, U.S., 30th March, 1878, for 5 years.

Claim.—The combination of gears D D C C with the sproket E and ratchet B, when made as described.

No. 8598. Improvements on Ovens and Oven Doors for Stoves. (*Perfectionnements aux fourneaux et aux portes des fourneaux de cuisine.*)

William C. Davis, Cincinnati, Ohio, U.S., 30th March, 1878, for 5 years.
Claim.—1st. A door for ovens of stoves and ranges constructed of two thicknesses of metal A B, inclosing a chamber which is filled with plaster of Paris or equivalent non-conducting material; 2nd. The register C or its equivalent in combination with the chambered and filled oven door having an air ingress opening; 3rd. The oven door constructed as described and having a register, in combination with the oven of a stove provided with egress openings communicating with exit flues of the stove

No. 8599. Improvements on Waggon Springs. (*Perfectionnements aux ressorts des voitures.*)

William H. Haylock, Alonzo Benedict and John Higgins, Jonesville, N.Y., U.S., 30th March, 1878, for 5 years.
Claim.—The combination with side bars C divided in the middle, of the flexible plate D and spring E, connected at each end to the side bar sections and at the middle to each other.

No. 8600. Improvements on Pen-Holders. (*Perfectionnements aux porte-plumes.*)

Joseph Reckendorfer, (Assignee of Joseph Hoffman and Cines W. Boman.) New York, U.S., 30th March, 1878, for 5 years.
Claim.—1st. A pen-holder formed of a single piece of sheet metal coiled into a pen-holder with outer barrel and inner nib, with a tongue on the one part engaging the other part, in such manner as to prevent the expansion of the outer barrel at the nib end, while leaving the nib free to yield. 2nd. A pen-holder formed of a single piece of sheet metal, coiled into a scroll or volute with walls of double thickness throughout its length, the inner fold constituting the nib piece, being connected with the outer fold by a tongue or locking piece, to prevent said outer fold from spreading; 3rd. A pen-holder made from a blank, with or without the locking tongue a or its equivalent.

No. 8601. Improvement on Steam Exhausts. (*Perfectionnement des soupapes d'aspiration.*)

George S. Brainerd, St. Albans, Vt., U.S., 30th March, 1878, for 5 years.
Claim.—1st. A sleeve having one or more relief discharge nozzles, in combination with the exhaust nozzle; 2nd. An exhaust nozzle for locomotives or other engines, surrounded by a hollow cone and having lateral ports communicating with the cone; 3rd. The combination of a movable cone B having the inwardly projecting sleeve C, with the nozzle A, each being provided with one or more ports.

No. 8602. Die and Swage for Making King Bolts. (*Matrice et étampe pour faire les chevilles ouvrières.*)

William Harris, London, Ont., 30th March, 1878, for 5 years.
Claim.—1st. The die C shaped to the outside of the saddle of the king bolt, to shape the outside of the saddle, and which die may be used either

In a solid piece of metal or in tongues A, or other similar improvement; 2nd. The die C shaped to the inside of the saddle E of the king bolt to shape such lasta; 3rd. The combination of the die C and swage D, for shaping the saddle; 4th. The application of the die C and swage D respectively, and of the combination of them to tongue A, for the formation of the saddles of king bolts by hand labour.

No. 8603. Improvement on Oil Tanks. (*Perfectionnements aux réservoirs à huile.*)

Ephraim A. Smead, Tioga, Pa., U.S., 30th March, 1878, for 5 years.
Claim.—1st. The trough e, for connecting the measures together, and having the holes g through it; 2nd. The combination of the pump c located inside the tank and adapted to raise the oil from the bottom of the tank into the measures with the tube h, connected therewith, whereby the tank may be filled or emptied through the tube. 3rd. The combination of the pump a valve that is operated from the outside of the tank, and a tube h; 4th. The combination of the pump c having the valves l Q, the pipe or tube h with the measures d, whereby the measures and tank may be filled from the barrel

No. 8604. Machine for Washing Clothes. (*Machine à laver le linge.*)

Patrick H. Cooney, Erie, Pa., U.S., 30th March, 1878, for 5 years.
Claim.—1st. The base plate E provided with enlargements and screw sockets H, in combination with the uprights C G having foot pieces and the bolts f f, for attaching said parts together; 2nd. The springs F, in combination with the bolt f f and hook f which are provided with lugs t, which act as harbs and retain said spring upon said parts f f f. 3rd. In combination with the circumferentially grooved roller B, the guard plate G with spring lugs g entering said grooves. 4th. The bolts f f and hook f having lugs t, 5th. The end pieces C with spaces c, for receiving the ends of the guard piece G, in combination with said guard piece G; 6th. The bed piece E with end piece E₁, in combination with the lugs h h and jam nuts e₁; 7th. The combination, within a washing machine, of the corrugated roller A, circumferentially grooved roller B, guard piece G, with spring lugs g, base piece E with enlargements H, uprights C attached by bolts f f to said bed piece, tension springs F and hooks f, and variable end piece E₁.

No. 8605. Improvements in Horse Rakes. (*Perfectionnements dans les râteliers à cheval.*)

Thomas Galloway and John Larzen, Oshawa, Ont., 30th March, 1878, for 5 years.
Claim.—1st. The tooth-socket B provided with upper and lower slots and bearing B₁. 2nd. The combination with the sockets B, of the capping pieces C provided with the cupped ends, and secured by screw or bolt to the axle A, or its equivalent; 3rd. The rake teeth D₁ having the butt end D, in combination with the sockets B and capping pieces C.

No. 8606. Improvements in Cross-Cut Saws. (*Perfectionnements aux scies de travers.*)

Silas Toles, Southwood, Ont., 30th March, 1878, for 5 years.
Claim.—The shaped and arrangement of the teeth marked A B C.

List of Patents issued up to 18th April, 1878, but not yet Officially published in the Patent Office Record.

- No. 8607. W. Burtis, New York, U.S.A., "Seal Bolt for Car Doors," 30th March, 1878.
- No. 8608. S. A. Jenks, Lincoln, (Assignee of A. R. Sherman, Natick, R.I., U.S.A.), "Hydraulic Gate Operating Mechanism," 30th March, 1878.
- No. 8609. S. B. Ferguson, Hallowell, Ont., "Cow Stanchion," 30th March 1878.
- No. 8610. S. Selden and M. Griswold, Erie, Pa., and J. S. Crump, Westfield, N.Y., U.S.A., 30th March, 1878.
- No. 8611. E. M. and A. Boynton, New York, U.S.A., "Saw," 30th March, 1878.
- No. 8612. W. F. Diehl and L. H. Packard, Montreal, Que., "Ice Creeper," 30th March, 1878.
- No. 8613. L. C. Bourgeois, (Assignee of F. Genio, Montreal, Que.) "Process for Manufacturing Paper Pulp from Straw, &c.," 30th March, 1878.
- No. 8614. D. Manbeck, Des Moines, Iowa, U.S.A., "Medical Compound," 30th March, 1878.
- No. 8615. G. T. Smith, Minneapolis, Minn., U.S.A., "Flour Dressing Machine," (Extension of Patent No. 2257,) 30th March, 1878.
- No. 8616. G. T. Smith, Minneapolis, Minn., U.S.A., "Flour Dressing Machine," (Extension of Patent No. 2257,) 30th March, 1878.
- No. 8617. G. T. Smith, Minneapolis, Minn., U.S.A., "Flour Dressing Machine," (Extension of Patent No. 2258,) 30th March, 1878.
- No. 8618. G. T. Smith, Minneapolis, Minn., U.S.A., "Flour Dressing Machine," (Extension of Patent No. 2258,) 30th March, 1878.
- No. 8619. G. T. Smith, Minneapolis, Minn., U.S.A., "Flour Dressing Machine," (Extension of Patent No. 2409,) 30th March, 1878.

- No. 8620. G. T. Smith, Minneapolis, Minn., U.S.A., "Flour Dressing Machine," (Extension of Patent No. 2409,) 30th March, 1878.
- No. 8621. I. Perkins, Seaford Street, Eng., "Packing Rings and Wearing Surfaces," (Extension of Patent No. 2430,) 30th March, 1878.
- No. 8622. C. E. Patric, Springfield, Ohio, U.S.A., "Seeding Machine," (Extension of Patent No. 2217,) 6th April, 1878.
- No. 8623. G. B. Stock, Toronto, Ont., "Draw-head and Shaft Attachment for Carriages," (Extension of Patent No. 2219,) 6th April, 1878.
- No. 8624. C. W. Volney, Brockville, Ont., "Nitro Glycerine Apparatus," (Extension of Patent No. 2242,) 6th April, 1878.
- No. 8625. I. Fréchet, St Hyacinthe, Que., "Shingle Mill," (Extension of Patent No. 2239,) 6th April, 1878.
- No. 8626. E. S. Hampton, Detroit, Mich., U.S.A., "Dish Washer," 8th April, 1878.
- No. 8627. T. Draper, Petrolia, Ont., "Pump," (Re-issue of Patent No. 8370,) 8th April, 1878.
- No. 8628. J. Charlton, Philadelphia, Pa., U.S.A., "Shaft Couplings," (Extension of Patent No. 2473,) 8th April, 1878.
- No. 8629. O. Low, Chelsea, Mass., U.S.A., "Process for Treating Wool," 8th April, 1878.
- No. 8630. E. J. Worcester, (Assignee of V. F. Prouty, Worcester, Mass., U.S.A.), "Machine for Grinding Cutters of Mowers and Reapers," 8th April, 1878.
- No. 8631. C. E. Brown, Jackson, Mich., U.S.A., "Bed Bottom," (Extension of Patent No. 8108,) 8th April, 1878.
- No. 8632. C. E. Brown, Jackson, Mich., U.S.A., "Bed Bottom," (Extension of Patent No. 8108,) 8th April, 1878.

No. 8633. J. H. Trickey, Hamilton, Ont. "Automatic Spring Catch for Securing together Blocks of Stone, &c.," 9th April, 1878.

No. 8634. Lyman English, (Executor of D. Smith, J. S. Fox, J. P. Luke and J. Luke, all of Oshawa, Ont., and A. Smith, Winnipeg, Man.) (Assignees of C. E. Haynes, Boston, Mass., U. S. A.) "Spring Clothes Washer," 11th April, 1878.

No. 8635. D. Charlesworth, Egmondville, Ont., "Middlings Purifier," 12th April, 1878.

No. 8636. C. Johnston, Rochester, N. Y., U. S. A., "Lubricating Oil," 12th April, 1878.

No. 8637. J. D. Brunton, Kentish Town, Eng., "Machinery for Cutting, Dressing, Planing and Shaping Stone," 12th April, 1878.

No. 8638. F. C. L. G. Susemihl and H. H. Hewitt, Detroit, Mich., U. S. A., "Journal Oil Box Lid," 12th April, 1878.

No. 8639. W. H. Sanford, Moncton, N. B., "Apparatus for Washing Clothes," 12th April, 1878.

No. 8640. T. C. Phillips, Strathroy, Ont., "Refrigerator," 12th April, 1878.

No. 8641. G. I. Stevens, Brooklyn, N. Y., U. S. A., "Process for Preparing Kalsomine or Distemper Paint," 12th April, 1878.

No. 8642. J. H. Tackaberry, Tilbury East, Ont., "Spring Buggy Top," 12th April, 1878.

No. 8643. R. M. Rose, Brooklyn, N. Y., U. S. A., "Sewing Machine Attachment," 12th April, 1878.

No. 8644. J. A. Moore, Indianapolis, Ind., U. S. A., "Cabinet Desk," 12th April, 1878.

No. 8645. S. V. King, Hamilton, Ont., "Thimble Skein," 12th April 1878.

No. 8646. G. W. Williams, Boston, Mass., U. S. A., "Ironing and Washing Table," 12th April, 1878.

No. 8647. T. Newbigging, A. Kay and R. I. Creelman, Georgetown, Ont., "Knitting Machine," 12th April, 1878.

No. 8648. B. D. Washburn, Boston, (Assignee of H. A. Wilbur, Somerville, Mass., U. S. A.) "Sash Pulley," 12th April, 1878.

No. 8649. A. W. Sangster and E. M. Jewett, Buffalo, N. Y., U. S. A., "Ozone Machine," 12th April, 1878.

No. 8650. J. B. Andrews, Jersey City, N. J., U. S. A., "Draft Apparatus for Stoves, &c.," 12th April, 1878.

No. 8651. F. G. Shepard, Battle Creek, Mich., U. S. A., "Straw Elevator for Grain Separators," 12th April, 1878.

No. 8652. J. W. Hyatt, Newark, N. J., U. S. A., "Flexible Cylinder," 12th April, 1878.

No. 8653. N. Adams and L. D. Mott, Ottawa, Ont., "Spring Bed Bottom," 12th April, 1878.

No. 8654. J. E. Ellison, Park Cross Street, Eng., "Ventilator for Buildings, Carriages, &c., &c.," 12th April, 1878.

No. 8655. W. W. Batchelder, New York, U. S. A., "Percussion Torch for Lighting Gas," 12th April, 1878.

No. 8656. L. Anderson, Corseley, Ont., "Music Transposing Board," 12th April, 1878.

INDEX OF INVENTIONS.

Alarms, fog, N. S. Woodward.....	8199
Anchors, C. E. Marshall.....	8507
" cutheads, J. W. Dearman.....	8520
Bags, catches for, R. Hensley et al.....	8491
Bark rossing, S. R. Thompson.....	818.
Bath and tub, J. H. Jones.....	8565
Bearing, shaft, T. H. King.....	8512
Beds, spring, P. Mudge.....	8540
Bells, stringing sleigh, F. Armstrong.....	8577
Belting manufacture, A. Spadone.....	8551
Blind fixtures, T. H. Stanton.....	8569
Boller furnaces, M. A. Hunter et al.....	8584
" steam, W. H. Wilson et al.....	8570
Bolts, making king, W. Harris.....	8602
Boots and shoes, C. W. Glidden.....	8518
Bread raising, H. Martin.....	8180
Brushes, bridling, C. Boeckh.....	8581
Bug gatherer, potato, A. Gibson.....	8505
Boggles, gear of, W. H. Morrison.....	8557
Burners, gas, F. D. Bliss.....	8545
" G. P. Sheffield et al.....	8513
" lamp, F. Holt et al.....	8547
Carriage holding, W. Potter.....	8541
Chair, folding, E. S. Pratt.....	8503
Chromates of potash, C. S. Gorman.....	8488
Comb case, R. & A. Soper.....	8481
Cultivators, M. Johnson et al.....	8583
Curtain fixtures, J. Nesbitt et al.....	8487
Die and swage, W. Harris.....	8602
Digging machines, T. C. Darby.....	8530
Door fastenings, J. G. Phillips.....	8542
" and gates, C. T. Sweet et al.....	8596
Dresses, cutting, E. A. Godkin.....	8521
Ear mufflers, C. Greenwood.....	8583
Engine lubricators, W. Stafford.....	8524
Files, paper, W. H. Waller.....	8592
" saw, E. M. Boynton.....	8549
Fire escapes, C. & F. Fugazzi.....	8546
Fluids, decanting, A. Bernstein.....	8550
Furnaces, boiler, M. A. Hunter et al.....	8584
Gas apparatus, J. H. Needles.....	8518
" W. Smith.....	8572
Gates and doors, C. T. Sweet et al.....	8596
Glass, looking, R. & A. Soper.....	8481
" vessels, D. W. Norris.....	8580
Grain reducing, S. Miles.....	8538
" separators, J. Donnelly.....	8575
" T. C. Husted et al.....	8564
Handles for saws, E. M. Boynton.....	8571
" shovel, B. A. Higgins.....	8525
Harrows, rotary, W. T. Nicols.....	8531
Harvesters, J. J. Dewey.....	8555
Harvesting machines, W. Russell.....	8590
Heel nailing, C. W. Glidden.....	8518
Hinges, spring, J. Spruce.....	8553
Holsts, J. Beatty.....	8529
Horse collar pins, L. & A. Dion.....	8515
" shoes, H. B. Cornish et al.....	8563
" I. N. Lilly.....	8511
Ice scrapers, T. F. Goulette.....	8539
Jacks, carriage, T. Hazard.....	8589
King-bolts, making, W. Harris.....	8602
Lamp burners, E. H. Jenkins.....	8479
Lanterns, A. L. Baron, et al.....	8582
Lathes, tools for, J. DuBols et al.....	8491
Lubricators, J. T. Cody.....	8532
" engine, W. Stafford.....	8524
Meters and motors, H. B. Hayes.....	8537
Millstone, conducting grain to, J. G. Kirkby.....	8335
" dressing, S. E. Griscom.....	8578
" driving, A. Cunningham.....	8536
Mining machines, F. M. Lechner et al.....	8492
Motors, steam, E. Baines.....	8509
Musical instruments, A. R. Koerber.....	8595
Oil tanks, E. A. Smead.....	8603
Ores, treatment of, F. M. Lyte.....	8560
Pea-holders, J. Beckendorfen.....	8560
Planing machines, J. G. Brown et al.....	8523
Planers, tools for, J. DuBols et al.....	8491
Poles and shafts, W. T. Cleveland.....	8514
" sled, J. P. Lawson.....	8508
Potash, chromates of, C. S. Gorman.....	8488
Potato diggers, P. M. Bawtinhimer.....	8498

Pumps, G. W. Low et al.....	8558
" windmill, J. Hugill, Jr.....	8484
" wooden, W. R. May.....	8516
Rack, towel, R. & A. Soper.....	8481
Rakes, horse, A. Howell.....	8587
" A. H. DeLaney.....	8585
" T. Galloway et al.....	8605
Reaping machines, J. Pattison.....	8573
Refrigerators, J. A. Kunkel.....	8594
Registers, ticket, B. C. Polo.....	8519
Road scrapers, H. C. Robb.....	8556
Sash fasteners, S. Rush.....	8534
" regulators, W. Thomson.....	8544
Saw handles, E. M. Boynton.....	8571
" mill carriages, H. Hiscock.....	8566
" W. Firstbrook.....	8543
" cross cut, S. Toles.....	8606
Sewing machines, L. Col6.....	8506
Shafts and poles, W. T. Cleveland.....	8514
Shovel handles, B. A. Higgins.....	8525
" and tongs, G. W. Whelan.....	8528
Shutters, A. Bijur.....	8502
Skates, roller, A. J. Peerless.....	8561
Soda, chromates of, C. S. Gorman.....	8488
Splints, felted, D. Ahl.....	8510
Springs, waggon, W. H. Haylock et al.....	8599
Steam apparatus, J. H. Needles.....	8548
" exhausts, G. S. Brainerd.....	8552
Stone dressing, H. Shearer et al.....	8586
" preserving, A. McLean et al.....	8500
Stove ovens, W. C. Davis.....	8598
" pipes, rivetting, T. Braidman.....	8591
Stoves E. & C. Gurney.....	8490
" J. W. Elliott.....	8504
" coal oil, J. Balliff.....	8496
" cook, W. J. Copp.....	8497
" self-feeding, G. R. Prowse.....	8462
Stump elevators, A. Dunnebache et al.....	8597
Sweepers, carpet, H. A. Gore et al.....	8534
Tanks, oil, E. A. Smead.....	8603
Threshing machines, F. W. Glen.....	8507
Time counting wheels, J. I. Bogue.....	8522
Tombs, J. Chittcock.....	8593
Tongs and shovels, G. W. Whelan.....	8528
Tub and bath, J. H. Jones.....	8565
Valves, hydrant, F. B. Stephens et al.....	8517
Vehicles, S. Gilzinger et al.....	8576
Vessels, glass, D. W. Norris.....	8580
Waggon, child's, F. X. Reno.....	8574
Wash-boards, D. J. George.....	8483
Washing machine, E. S. Redfern et al.....	8501
" G. Buchanan.....	8526
" J. O. Beuperland.....	8493
" P. H. Cooney.....	8604
" T. Austin.....	8489
Weather strips, D. O. Hink.....	8568
Wells, lining, C. James.....	8527
Wheels, car, W. Wilmington.....	8495
" casting,.....	8588
" for counting time, J. I. Bogue.....	8522
" Vehicle, T. H. King.....	8486

INDEX TO PATENTEES.

Ahl, David, felted splints.....	8510
Almon, L. J., et al., boiler furnaces.....	8581
Anderson, A., et al., curtain fixtures.....	8487
" D., et al., catches for bags.....	8494
Armstrong, F., stringing sleigh bells.....	8576
Arnold, C. R., door fastening.....	8542
Austin, T., washing machines.....	8489
Balliff, J., coal oil stoves.....	8496
Baines, E., steam motors.....	8509
Baron, A. L., et al., lanterns.....	8582
Bawtinhimer, P. M., potato-diggers.....	8498
Beatty, J., holsts.....	8529
Beuperland, J. O., washing machines.....	8493
Benedict, A., et al., waggon springs.....	8599
Bernstein, A., decanting fluids.....	8550
Baugler, E. F., et al., lathes and planers.....	8491
Bijur, A., shutters.....	8502

Bliss, F. D., gas burners.....	8545	Johnson, M., et al., cultivators.....	8588
Boardman, T., rivetting stove-pipes.....	8591	Jones, J. H., bath and tub.....	8565
Bogue, J. I., time counting wheels.....	8522	King, T. H., anti-friction bearing.....	8512
Boman, C. W., et al., pen-holder.....	8600	“ “ vehicle wheels.....	8450
Bond, J. L., et al., hydrant valves.....	8517	Kirkby, J. G., conducting grain to a millstone.....	8435
Booth, R., et al., fog-alarm.....	8490	Koerber, A. R., musical instruments.....	8595
Boynton, E. M., saw files.....	8519	Kunkel, J. A., refrigerators.....	8591
“ “ saw handles.....	8571	Lawson, J. P., sled poles.....	8508
Brainerd, G. S., steam exhausts.....	8552	Lechner, F. M., et al., mining machines.....	8492
Brintnall, T., et al., lamp burners.....	8547	Lilly, I. N., horse shoes.....	8611
Brown, J. G., et al., plaiting machines.....	8523	Low, G. W., et al., pumps.....	8553
Buchanan, G., washing machines.....	8526	Lyte, F. M., treatment of ores.....	8559
Burns, C., et al., “ “.....	8501	McFeely, T., millstone dressing.....	8578
Cash, E. F., et al., lanterns.....	8582	McGregor, D. R., et al., stone dressing.....	8550
Champion, J. M., et al., grain separators.....	8564	McKee, G. W., et al., gas burners.....	8518
Chittock, J., tombs.....	8593	McKenzie, C., et al., hydrant valves.....	8517
Clark, E. S., grain separators.....	8575	McLean, A., et al., preserving stone.....	8500
Cleveland, W. T., poles and shafts.....	8514	Marshall, C. E., anchors.....	8507
Cody, J. T., lubricators.....	8532	Martin, H., raising bread.....	8480
Cooke, G. T., et al., plaiting machines.....	8523	May, U. R., wooden pumps.....	8516
Cooney, P. H., washing machine.....	8604	Miles, S., grain reducing.....	8538
Copp, W. J., cook stoves.....	8582	Morrison, H. C., gear of buggies.....	8537
Cornish, H. B., et al., horse shoes.....	8563	Morton, B., et al., stone preserving.....	8500
Côté, L., sewing machines.....	8506	Mudge, F., spring beds.....	8540
Crosby, A. A., et al., vehicles.....	8576	Munn, F., window sash regulators.....	8544
Cunningham, A., driving millstones.....	8536	Needles, J. H., gas and steam.....	8546
Darby, T. C., digging machines.....	8530	Nesbitt, J., et al., curtain fixtures.....	8487
Davis, E. J., et al., doors and gates.....	8596	Nichols, W. T., rotary harrows.....	8531
“ W. C., stove ovens.....	8598	Norris, D. W., glass vessels.....	8580
Dean, D. K., et al., pumps.....	8558	Pattison, J., reaping machines.....	8573
Dearman, J. W., anchor catheads.....	8520	Payton, W., et al., stone dressing.....	8590
Delaney, A. H., horse rakes.....	8585	Peerless, A. J., roller skates.....	8561
Dewey, J. J., harvesters.....	8555	Phillips, J. G., door fastenings.....	8512
Dion, L. and A., horse collar pins.....	8515	Polc, B. C., ticket registers.....	8519
Donnelly, J., grain separators.....	8575	Potter, W., carriage holding.....	8541
DuBols, J., et al., lathes and planers.....	8491	Pratt, E. S., folding chair.....	8503
Dunnebach, A., et al., stump elevator.....	8597	Prowse, G. R., self-feeding stoves.....	8482
Elliott, J. W., stoves.....	8504	Rac, W. T., et al., lamp burners.....	8547
Firstbrook, W., saws.....	8543	Rankin, D., et al., lanterns.....	8582
Frey, J. A., coal oil stoves.....	8496	Reckendorfer, J., pen-holders.....	8600
Fugazzi, C., and F., fire-escapes.....	8546	Redfern, E. L., washing machine.....	8501
Galloway, T., et al., horse rakes.....	8605	Reno, F. X., child's waggon.....	8574
George, D. J., wash boards.....	8483	Richardson, M. C., et al., cultivators.....	8583
Gibson, A., potato bug gatherer.....	8505	Robb, H. C., and I., road scrapers.....	8550
Gilzinger, S., et al., vehicles.....	8578	Rockwell, R. D., et al., steam boilers.....	8570
Glen, F. W., threshing machines.....	8507	Ross, A. Q., child's waggon.....	8574
Glidden, C. W., heel nailing.....	8518	Rush, S., sash fasteners.....	8554
Godkin, E. A., cutting dresses.....	8521	Russell, W., harvesting machines.....	8590
Gore, H. A., et al., carpet sweepers.....	8534	Seaton, F., et al., grain separators.....	8564
Gorman, C. S., chromates of potash.....	8488	Selph, B., et al., road scrapers.....	8556
Goulette, T. F., ice-scrappers.....	8539	Shearer, H., et al., stone dressing.....	8586
Greenwood, C., ear mufflers.....	8533	Sheffield, G. P., et al., gas burners.....	8513
Griscom, S. E., millstone dressing.....	8579	Smead, E. A., oil tanks.....	8608
Gurney, E., and C., stoves.....	8490	Smith, L., et al., fog alarm.....	8499
Harris, W., die and swage.....	8602	“ W., gas apparatus.....	8572
“ W. C., et al., steam boilers.....	8570	Soper, R., and A., looking-glass.....	8481
Hayes, H. B., meters and motors.....	8597	Spadone, A., belting manufacture.....	8531
Haylock, U. H., et al., waggon springs.....	8599	Spruce, J., spring hinges.....	8533
Hazard, T., carriage jacks.....	8588	Stafford, W., engine lubricators.....	8524
Hemsley, R., et al., catches for bags.....	8491	Stanton, T. H., blind fixtures.....	8569
Higgins, B. A., shovel handles.....	8525	Stevens, F. B., et al., hydrant valves.....	8517
“ J., et al., waggon springs.....	8599	Sweet, C. T., et al., gates and doors.....	8596
Hink, D. O., weather strips.....	8568	Thompson, S. R., bark rossing.....	8485
Hiscock, H., saw-mill carriages.....	8566	Thomson, W., window sash regulators.....	8544
Histed, T. C., et al., grain separators.....	8564	Toles, S., cross-cut saws.....	8606
Hoffman, J., et al., pen-holders.....	8690	Walker, E. W., et al., carpet sweepers.....	8531
Holmes, J. E., et al., stone dressing.....	8586	Walker, W. H., paper files.....	8592
Holt, F., et al., lamp burners.....	8547	Whelan, G. W., shovels and tongs.....	8528
Howell, A., horse rakes.....	8587	Whitney, J. W. G., et al., stone preserving.....	8500
Hugill, J., Jr., windmill pumps.....	8484	Wilmington, W., car wheels.....	8495
Hunt, C. T., et al., horse shoes.....	8563	“ “ casting wheels.....	8588
Hunter, M. A., et al., boiler furnaces.....	8581	Wilson, W. H., et al., steam boilers.....	8570
James, C., liming wells.....	8527	Woodward, N. S., fog-alarms.....	8499
Jeffrey, J. A., et al., mining machines.....	8492	Wyse, G. B. M., et al., stone dressing.....	8586
Jenkins, E. H., lamp burners.....	8479		

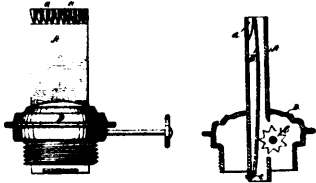
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

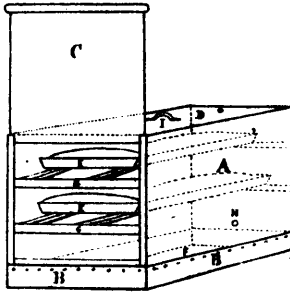
Vol. VI

APRIL, 1878.

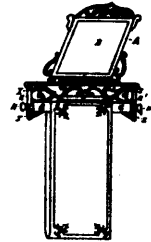
No. 4.



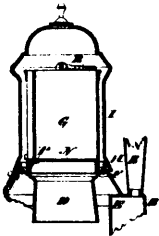
8479 Jenkins' Improvements on Lamp Burners.



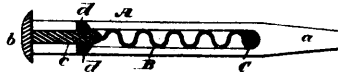
8480 Martin's Machine for Raising Bread.



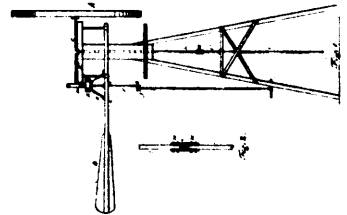
8481 Soper's Combined Looking-Glass, Comb-Case and Towel Rack.



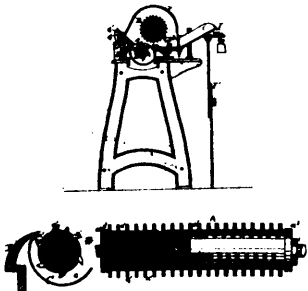
8482 Frowse's Improvements on Self-Feeding Stoves.



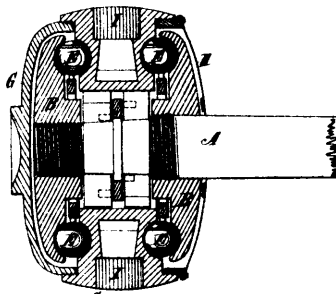
8483 George's Improvements on Wash-Boards.



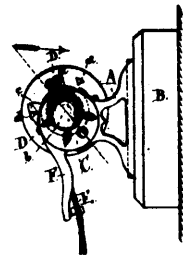
8484 Huggill's Improvements on Wind-Mill Pumps.



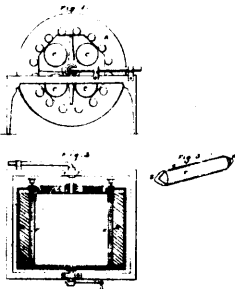
8485 Thompson's Machine for Roasting and Cutting Bark.



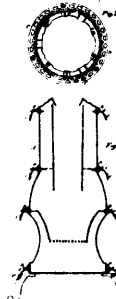
8486 King's Improvement in Vehicle Wheels.



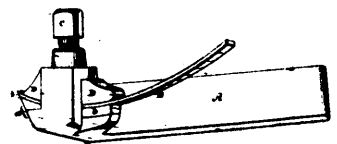
8487 Nesbitt & Anderson's Improvements in Curtain Fixtures.



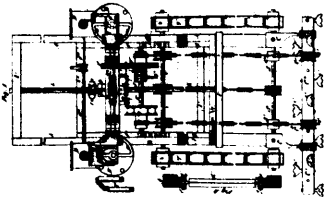
8489 Austin's Improvements in Washing-Machines.



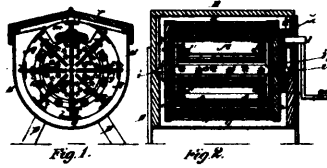
8490 Gurney's Improvement in Stoves.



8491 DuBois & Bengler's Improvements on Tools for Metal Working Lathes and Planers.



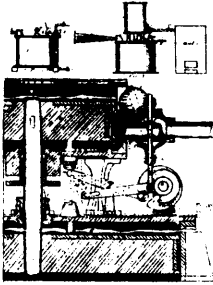
8492 Lechner & Jeffrey's Improvements on Mining Machines.



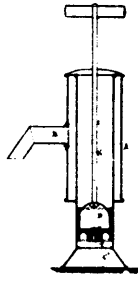
8493 Beuperland's Improvements on Washing Machines.



8494 Hemsley & Anderson's Improvements on Catches for Bags.



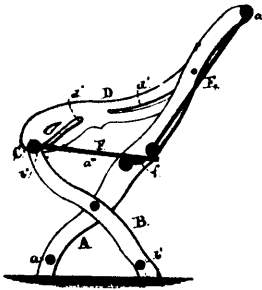
8499 Booth & Smith's Improvements in Fog Alarms.



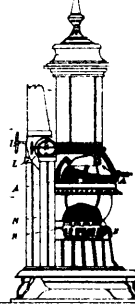
8501 Redfern & Burns' Machine for Washing Clothes.



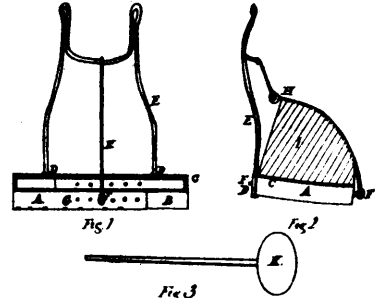
8502 Bliur's Improvement on Shutters.



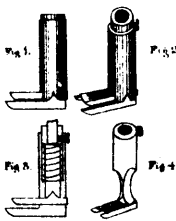
8503 Pratt's Improvements on a Folding Chair.



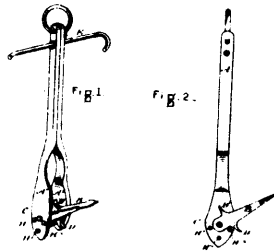
8504 Elliott's Improvements in Stoves.



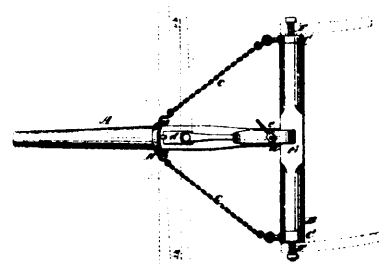
8505 Gibson's Potato Bug Gatherer.



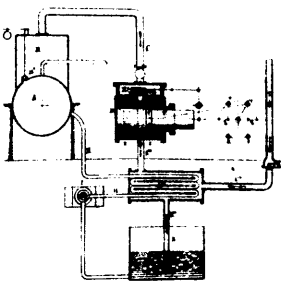
8506 Coté's Improvements on Sewing Machines.



8507 Marshall's Improvements on Anchors.



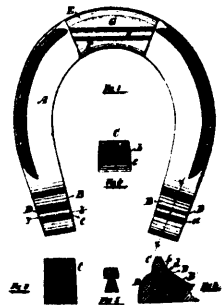
8508 Lawson's Improvement on Sled Poles.



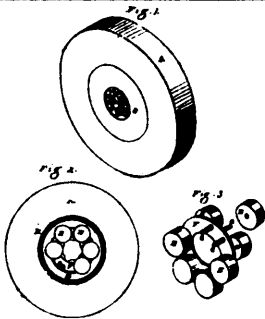
8509 Baines' Improvements on Steam and other Motors.



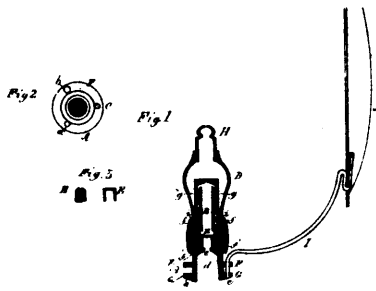
8510 Ahl's Process for Manufacturing Felted Surgeon's Splints.



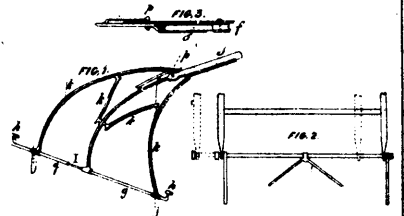
8511 L.Diy's Improvements in Horse Shoes.



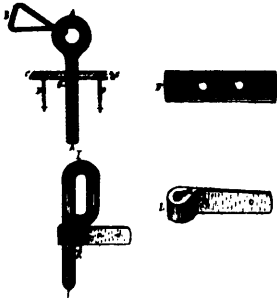
8512 King's Antifriction Bearing for Shafts and Axles.



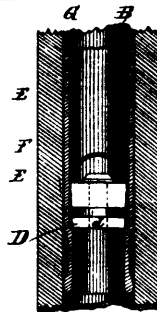
8513 Sheffield & McKee's Improvements in Gas Burners.



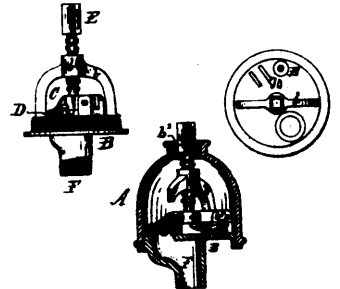
8514 Cleveland's Adjustment of Carriage-Poles and Shafts.



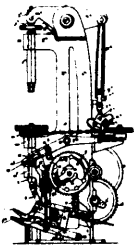
8515 Dion's Improvements on Horse Collar Pins.



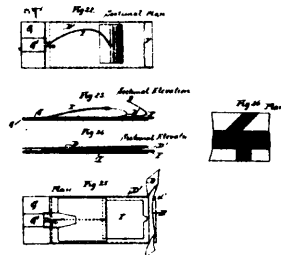
8516 May's Improvements in Wooden Pumps.



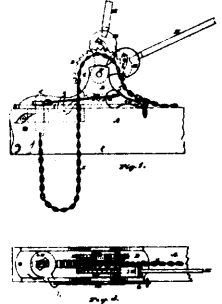
8517 Stevens, Bond & McKenzie's Improvement on Hydrant Valves.



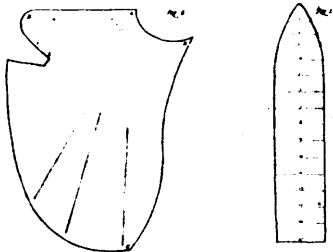
8518 Glidden's Heel Nailing and Trimming Machines.



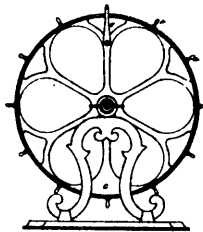
8519 Pole's Improvements on Ticket Registers.



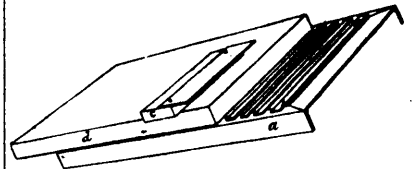
8520 Dearman's Improvements on Anchor Catheads.



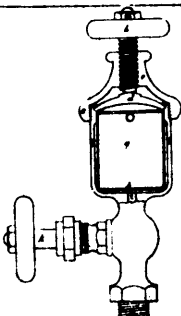
8521 Godkin's Machine to Facilitate the Cutting out of Dresses.



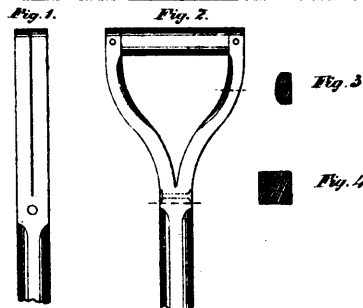
8522 Bogue's Combination of Wheels for Counting Time Past and Future.



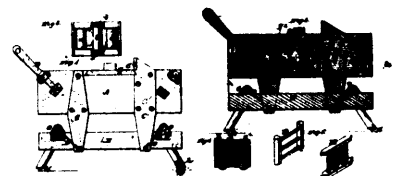
8523 Brown & Cooke's Improvement on Plating Machines.



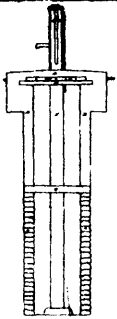
8524 Stafford's Improvements on Steam Engine Lubricators.



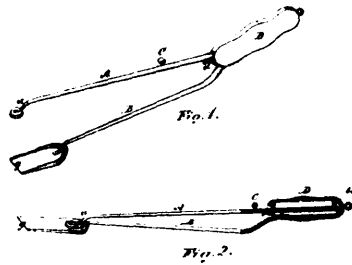
8525 Higgins' Improvements on Shovel Handles.



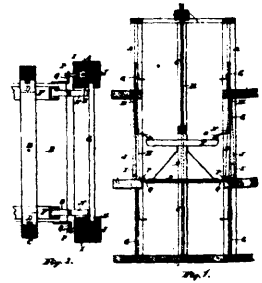
8526 Buchanan's Improvements on Washing Machines.



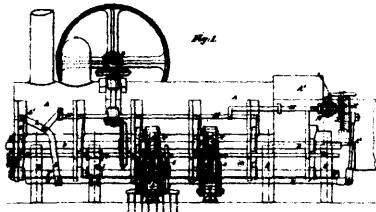
8527 James' Art of Lining and Covering Wells.



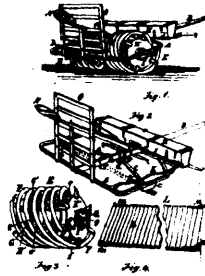
8528 Whelan's Improvements on Shovels and Tongs.



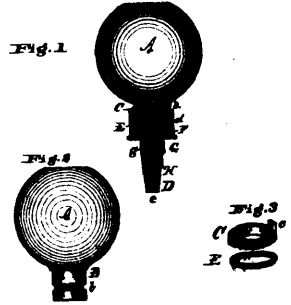
8529 Beatty's Improvements in Hoists.



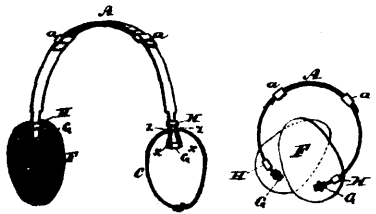
8530 Darby's Improvements on Digging Machines.



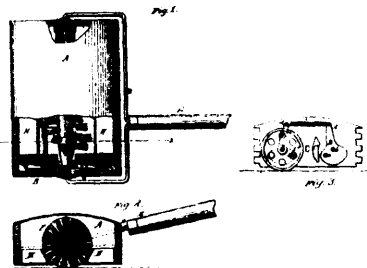
8531 Nichols' Improvements in Rotary Harrows.



8532 Cody's Improvements on Lubricators.



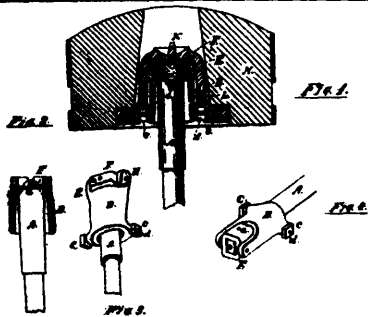
8533 Greenwood's Improvements on Ear Muffers.



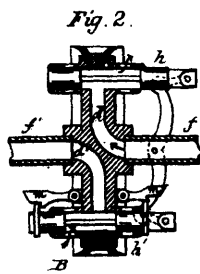
8534 Gore & Walker's Improvement in Carpet Sweepers.



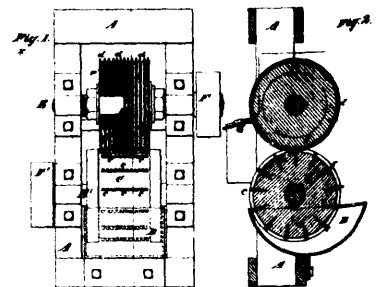
8535 Kirkby's Contrivance for Conducting Grain to the Eye of a Millstone.



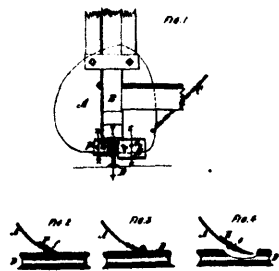
8536 Cunningham's Machine for Driving Millstones.



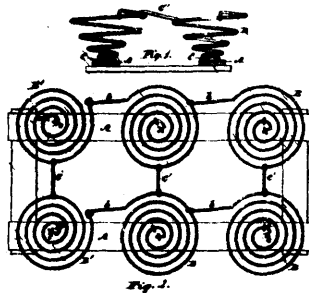
8537 Hayes' Improvement in Meters and Motors.



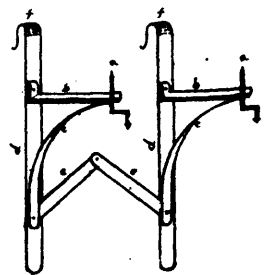
8538 Miles' Improvements on Grain Reducing Machines.



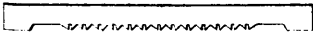
8539 Goulette's Improvements in Ice-Scrapers.



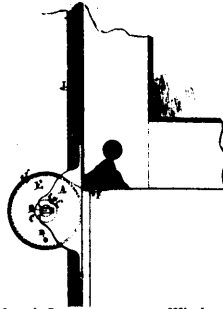
8540 Mudge's Improvements on Spring Beds.



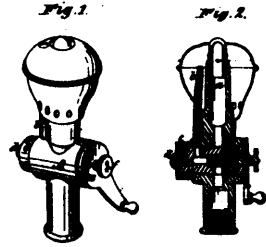
8541 Potter's Machine for Adjusting Carriage Bodies while being Ironed.



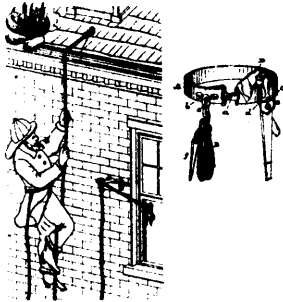
8548 Firstbrook's Improvements in Saws.



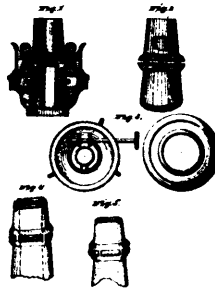
8544 Munn's Improvements on Window-Sash Regulators.



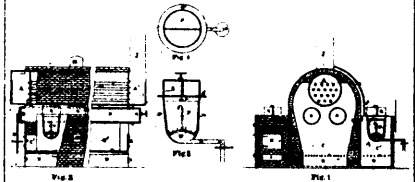
8545 Bliss' Improvements in Gas Burners.



8546 Fugazzi's Improvements in Fire-Escapes.



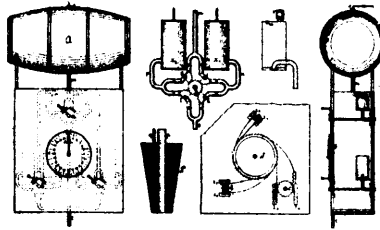
8547 Holt, Brintnall & Rae's Improvements on Lamp Burners.



8548 Needles' Combined Apparatus for the Production of Gas and Generation of Steam.



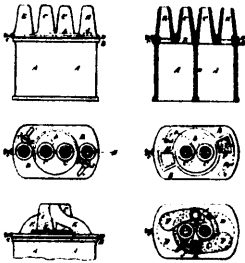
8549 Boynton's Improvements on Saw Files.



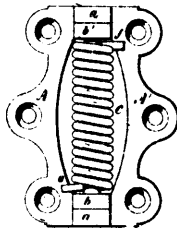
8550 Bernstein's Apparatus for Drawing off or Decanting Fluids.



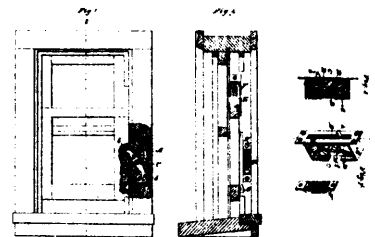
8551 Spadone's Improvements in the Manufacture of Belting.



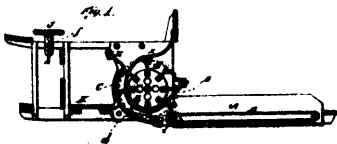
8552 Brainerd's Improvements in Steam Exhausts.



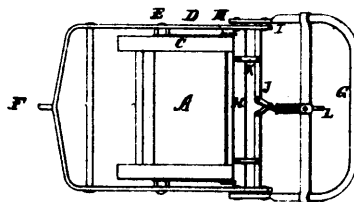
8553 Spruce's Improvements on Spring Hinges.



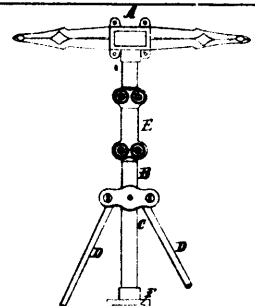
8554 Rush's Improvements on Sash Fasteners.



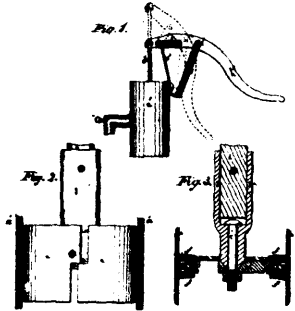
8555 Dewey's Improvements on Harvesters.



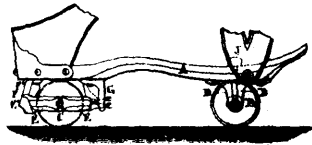
8556 Robb's Improvements in Road-Scrapers.



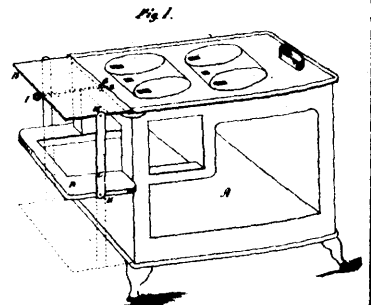
8557 Morrison's Improvements in the Gear of Buggies.



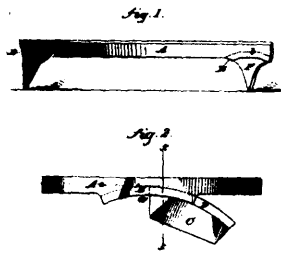
8556 Low & Dean's Improvements on Pumps.



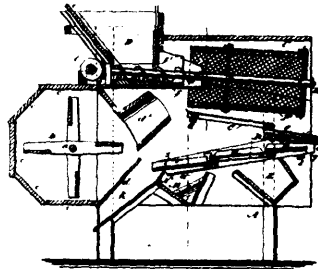
8561 Peerless' Improvements in Roller Skates.



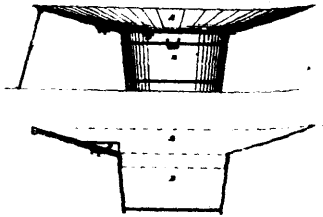
8562 Copp's Improvements in Cook Stoves.



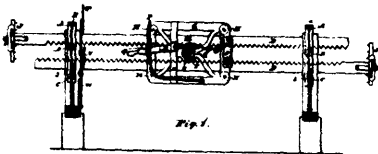
8563 Cornish & Hunt's Improvement on Horse Shoes.



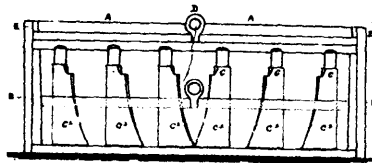
8564 Histed, Seaton & Champion's Improvements on Grain Separators.



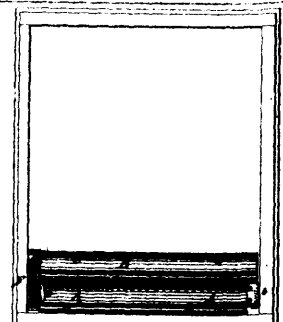
8565 Jones' Combination Bath and Wash Tub.



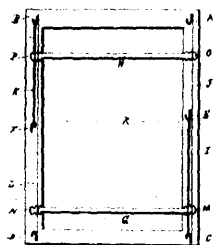
8566 Hiscock's Improvements on Saw Mill Carriages.



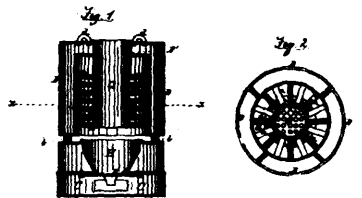
8567 Glen's Improvements on Threshing Machines.



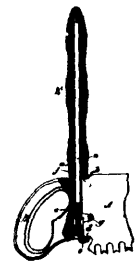
8568 Hink's Improvements on Weather Strips.



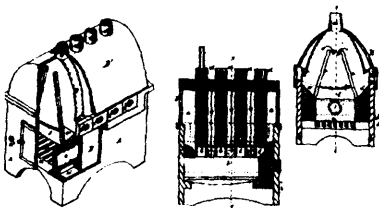
8569 Stanton's Improvements on Blind Fixture.



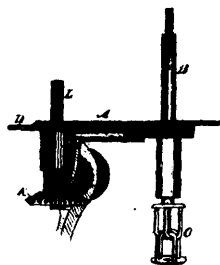
8570 Wilson, Harris & Rockwell's Improvements on Steam Boilers.



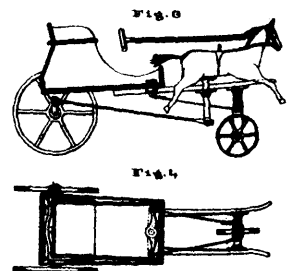
8571 Boynton's Improvements on Handles for Saws.



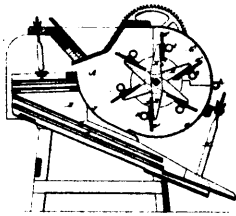
8572 Smith's Improvements on Gas Apparatus.



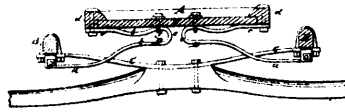
8573 Pattison's Improvements on Reaping Machines.



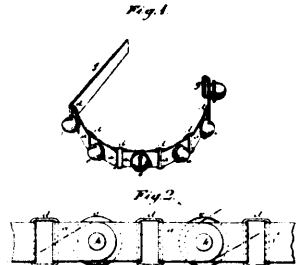
8574 Ross' Improvements on a Child's Wagon.



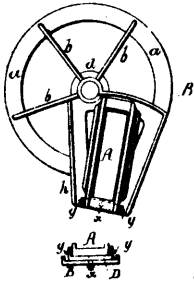
8575 Clark's Improvements on Grain Separators.



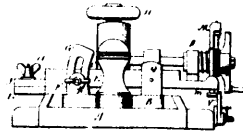
8576 Gilzinger & Crosby's Improvements on Vehicles.



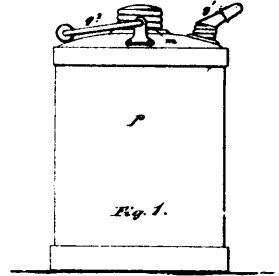
8577 Armstrong's Improvements in Stringing Sleigh Bells.



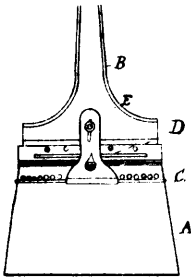
8578 McFeely's Improvements on Millstone Dressing Machines.



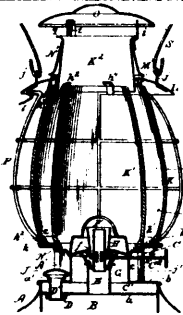
8579 McFeely's Improvements on Millstone Dressing Machines.



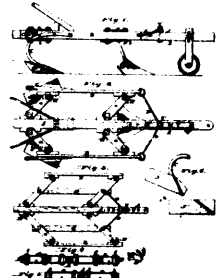
8580 Norris' Improvements on Glass Vessels.



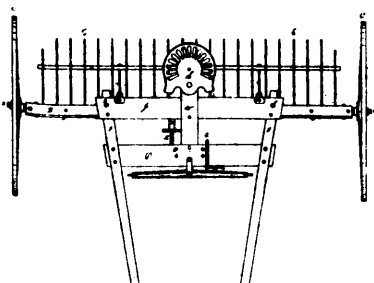
8581 Boeckh's Attachment for Bridling Brushes.



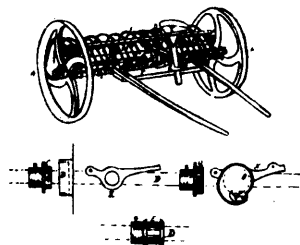
8582 Baron, Cash & Rankin's Improvements on Lanterns.



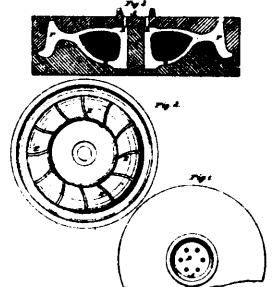
8583 Johnson & Richardson's Improvements on Cultivators.



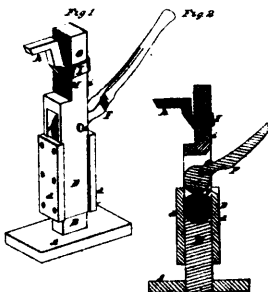
8585 DeLancy's Improvements on Horse Rakes.



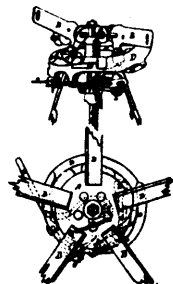
8587 Howell's Improvements on Horse Rakes.



8588 Wilmington's Improvement on Casting Car Wheels.



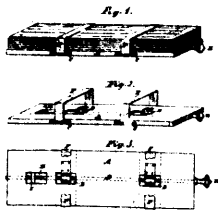
8589 Hazard's Improvements on Carriage Jacks.



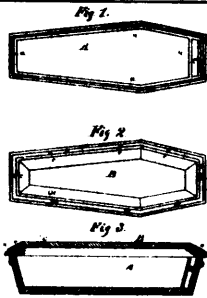
8590 Russell's Improvements on Harvesting Machines.



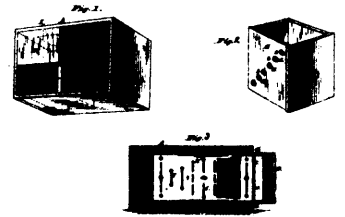
8591 Boardman's Machine for Rivetting Stove-Pipes.



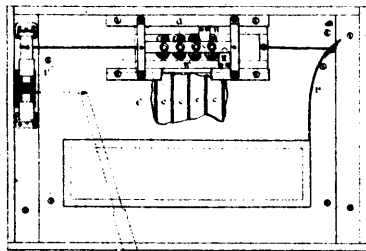
8592 Waller's Improvements on Paper Files.



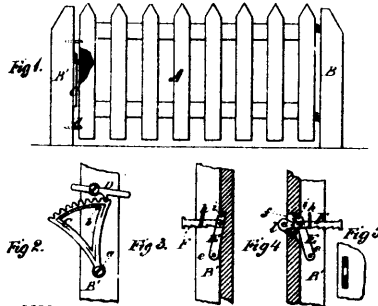
8593 Chittock's Improvements on Tombs.



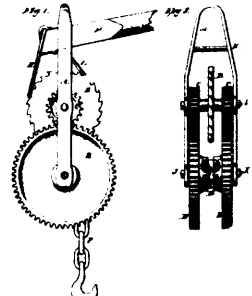
8594 Kunkel's Improvements on Refrigerators.



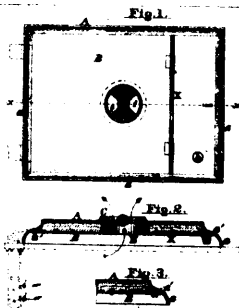
8595 Koerber's Improvements on Musical Instruments.



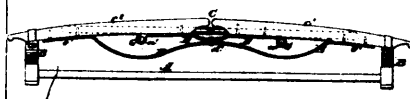
8596 Sweet & Davis' Improvements on Doors and Gates.



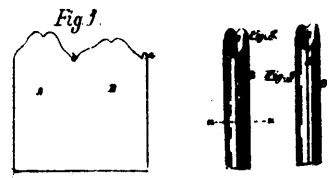
8597 Dannebach, Linden & Younglove's Improvements on Stump Elevators.



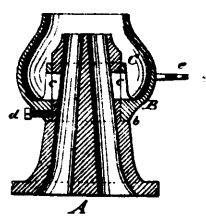
8598 Davis' Improvements on Ovens and Oven Doors for Stores.



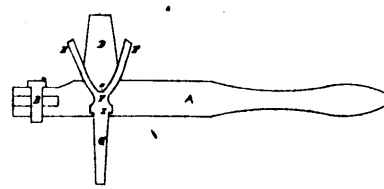
8599 Haylock, Benedict & Higgins' Improvements on Waggon Springs.



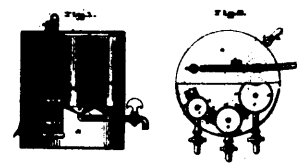
8600 Hoffman & Beman's Improvements on Pen-Holders.



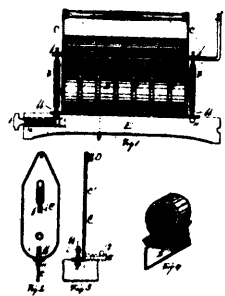
8601 Brainard's Improvement on Steam Exhausts.



8602 Harris' Die and Swage for Making King Bolts.



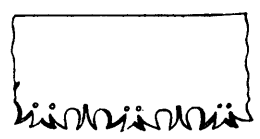
8603 Smead's Improvement on Oil Tanks.



8604 Cooney's Machine for Washing Clothes.



8605 Galloway & Lyson's Improvements in Horse Rakes.



8606 Toles' Improvements in Cross-Cut Saw Rakes.