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CONTENTS.

INVENTIONS PATENTED.....	23
INDEX OF INVENTIONS.....	XXXI
INDEX OF PATENTEES.....	XXXI
ILLUSTRATIONS.....	33

INVENTIONS PATENTED.

No. 12,152. Improvements on Straw Cutters.

(*Perfectionnements aux hache-paille.*)

Addison Reynolds, Burlington, Mich., U. S., and John Richards, Windsor, Ont., 23rd December, 1880; for 5 years.

Claim.—1st. The shape of the slide B with the front presser guard B₁, in a machine for cutting straw or other food for cattle. 2nd. The adjustable cast metal guard attached to the back of the slide. 3rd. The adjustable rubber or coil spring C₁, in combination with the wooden spring. 4th. The combination of the slide adjustable guard, and adjustable rubber or coil spring, in a machine for cutting straw, hay, or other food for cattle.

No. 12,153. Improvements in Buggy Tops.

(*Perfectionnements aux soufflets des voitures.*)

Edward N. Heney, Montreal, Que., 23rd December, 1880; for 15 years.

Claim.—1st. The combination of the shifting rail A having pin B, with the socket E, having pinching screw F, and a connecting device to side of seat or seats. 2nd. The combination of the shifting rail A, sockets E E₁, connecting device C, having pin B attached thereto. 3rd. The combination of the back rail K, also forming stud M, with shifting rail A. 4th. The socket E E₁, having splits G, lugs H, and bolts and nuts I, in combination with pin B and shifting rail A.

No. 12,154. Improvements on Skates. (*Perfectionnements aux patins.*)

Charles Brewster, Montreal, Que., 23rd December, 1880; (Extension of Patent No. 5,680).

No. 12,155. Improvements in Railway Springs. (*Perfectionnements aux ressorts des chemins de fer.*)

Richard Vose, New York, U. S., 23rd December, 1880; for 5 years.

Claim.—1st. A steel spiral coil, in combination with, and having in its interior, one or two conically-shaped cones, the longitude of which is less than that of the spiral coil. 2nd. An exterior helical coiled spring, in combination with the interior conically-shaped coil spring, one or more, the length of which is less than that of the exterior coil, which interior coil or coils serve as an auxiliary to the exterior coil, forming thereby a graduated metal spring. 3rd. A cap or covering for the ends of springs, composed of the holder I, having the rimmed lip *k*, with sloping conical sides *a a'*, with or without an outer covering cap. 4th. A spring for railway cars and other purposes having, in combination, an outer and an inner coil, the inner coil confined in a holder I, which has at its bottom, the recess *u*, for the holding in place and preventing lateral motion of the interior coil. 5th. An outer spiral coil and an inner rubber cone, one or more, of the cup C, so that the rubber cone is prevented from coming in contact with the outer coil.

No. 12,156. Improvements in Neck Yokes.

(*Perfectionnements aux jougues.*)

John L. Babb, Greenland, W. V., U. S., 23rd December, 1880; for 15 years.

Claim.—The combination of the yokes A A, composed of the side bars *a a*, and end bars E E, secured together by means of bolts, the connecting bars B B provided with universal joint connections, and the bar C attached to the bars B.

No. 12,157. Improvements on Piston Packing. (*Perfectionnements aux garnitures de pistons.*)

Charles C. Jerome, Chicago, Ill., U. S., 23rd December, 1880; for 5 years.

La m.—1st. A metallic packing ring provided with a single lap-joint, the inner portion of the ring being partly severed at one or more points. 2nd. A metallic packing ring, provided with flat annular bearings on its opposite sides and formed with a single lap-joint, the inner portion of the ring being severed at one or more points. 3rd. A metallic packing ring, having its inner or wearing faces sub-divided into two or more sections, which are connected by an outer portion of the ring. 4th. The combination, with a packing-cone and follower, of a series of metallic packing rings, each provided with flat annular seats on their front and rear sides. 5th. The combination with a packing cone and follower, of a series of metallic packing rings, formed with a single lap-joint and with the converging end of the ring cut away, to form lubricating grooves between the adjacent rings. 6th. The packing cone G, provided with an outwardly projecting flange or collar H, in combination with the annular groove I, formed between the stuffing box and gland.

No. 12,158. Improvements on Washing Machines. (*Perfectionnements aux machines à laver.*)

Robert Campbell, Wooster, Ohio, U. S., 23rd December, 1880; for 5 years.

Claim.—The box B, and the removable cover C, having bearings T, for the journals of the beater, and the lid L, hinged to the cover and provided with the catch O, in combination with the beater and the pivoted wash-board.

No. 12,159. Improvements in Stock Cars. (*Perfectionnements aux chars à bestiaux.*)

John R. McPherson, Jersey, (Assignee of Albert N. Steventon and Thomas F. McGrath, Newark), N. J., U. S., 23rd December, 1880; (Extension of Patent No. 5,577).

No. 12,160. Improvements in Stock Cars. (*Perfectionnements aux chars à bestiaux.*)

John R. McPherson, Jersey, (Assignee of Albert N. Steventon and Thomas F. McGrath, Newark), N. J., U. S., 24th December, 1880; (Extension of Patent No. 5,577).

No. 12,161. Manufacture of Paper Pulp. (*Fabrication de la pâte à papier.*)

John T. Averill and Herbert M. Carpenter, St. Paul, Min., U. S., 31st December, 1880; (Extension of Patent No. 6,352).

No. 12,162. Improvements on Vehicle Hubs. (*Perfectionnements aux moyeux des roues.*)

Francis Culham, Blenheim, Ont., 31st December, 1880; for 5 years.

Claim.—The combination of the nut A A, the box or hub B, the flange C C, the flange D D, the cap E, the recess F F, the collar G G, the oil hole H and the plating of silver or granite iron enamelling, or any other suitable material.

No. 12,163. Improvements in the Means of Decorating Celluloid. (*Perfectionnement dans le moyen de décorer la cellulose.*)

Robert A. Bacon and Nathan Hart, New York, U. S., 31st December, 1880; for 15 years.

Claim.—1st. The process of decorating surfaces composed wholly or in part of celluloid or its equivalent by the application of aniline or equivalent colours dissolved in carbolic acid and ether. 2nd. The process of decorating surfaces, composed wholly or in part of celluloid or its equivalent, by the application of aniline or equivalent colours dissolved in carbolic acid and alcohol, and applied as described. 3rd. The process of decorating surfaces composed wholly or in part of celluloid or its equivalent, by the application of aniline or equivalent colours, dissolved in carbolic acid and ether and alcohol, and applied as described.

No. 12,164. Improvements on Ploughs. (*Perfectionnements aux charrues.*)

Malcolm McLean, Guelph, Ont., 31st December, 1880; for 5 years.

Claim.—1st. A sectional plough beam A composed of two iron plates connected together. 2nd. The plough standard C, provided with a recess to receive the plate D and pivoted thereon, in combination with the sectional plough beam A, secured thereto by the bolt B, passing through the plates B, D, and plough standard C. 3rd. The jointer L, provided with a plate N, in combination with the sectional plough beam A, secured thereto by the bolt M, passing through the plates N O, and jointer L. 4th. The block K bolted between the plates A, in combination with the bolt E passing through a hole in the said block and through a lateral slot in the cross piece F. 5th. The device casting I, bolted between the plates A, and having a longitudinal slot through it, in combination with the standard of the regulating wheel J.

No. 12,165. Improvements on Machinery for Cutting Pile Fabrics. (*Perfectionnements aux appareils à tisser les tissus à poils.*)

Reuben H. Plass and Myron H. Chapin, New York, U. S., 31st December, 1880; for 5 years.

Claim.—1st. The combination of an endless band knife mechanism for operating said knife, means for feeding material to the knife, rollers for stretching the fabric laterally before it is subjected to said knife, and mechanism for operating said rollers. 2nd. The combination of an endless band knife, mechanism for operating the same, rollers for feeding material thereto, rollers arranged at an angle to each other and capable of adjustment at different angles, for the purpose of stretching the material laterally before it is subjected to the knife, and mechanism for driving the said feeding and stretching rollers. 3rd. The combination of the endless band knife A, its supporting pulleys and guides, and the rollers G supported on shafts, arranged in outer pivotal bearings and inner adjustable bearings. 4th. The combination, in a machine for cutting material, of a knife and rollers, for feeding material thereto, provided with pins or fingers, eccentrics for adjusting the said pins or fingers outwardly, and springs for adjusting them inwardly. 5th. The combination of an endless band knife for separating material, means for imparting motion thereto, a cross knife or cutter for dividing the material longitudinally after it leaves said band knife, and means for feeding material to said knives. 6th. The combination with an endless band knife and mechanism for operating the same, of an emery wheel and a pulley, deriving motion from said knife, whereby a rotary motion is imparted to said emery wheel, in approximately the same plane as that of the motion of the knife. 7th. The combination with an endless band knife and mechanism for operating the same, of a pulley deriving motion from said knife, and an emery wheel rotated by said pulley acting on one side of the knife, and a stationary bed or base piece acting upon the other side thereof.

No. 12,166. Improvements on Door Knobs. (*Perfectionnements aux boutons des portes.*)

William H. Gonne, Chatham, Ont., George W. Oliver, M. Hidden and Frank H. Blackman, Bay City, Mich., U. S., 31st December, 1880; for 5 years.

Claim.—1st. The combination of the notched spindle B, plate E, engaging with said notches, and set screw d. 2nd. The combination of the knob A, rivet h, spindle B, bolt K and slot L.

No. 12,167. Improvements on Steam Boiler Injectors. (*Perfectionnements aux injecteurs des machines à vapeur.*)

Looren E. Hogue and Wallace E. Macdonald, Sandy Lake, Pa., U. S., 31st December, 1880; for 5 years.

Claim.—The combination of three or more sets of grading tubes B E, the two or more sets of tubes I J, the steam chambers A H, the water chambers D F, the valves K and the stop cocks L, with each other.

No. 12,168. Improvements in Steam Engines. (*Perfectionnements dans les machines à vapeur.*)

James N. Lauder and Nathan P. Stevens, Concord, N. H., U. S., 31st December, 1880; for 5 years.

Claim.—The valve A, provided with the standards G G, and the auxiliary valve seat E, in combination with the valve C and lifter springs D.

No. 12,169. Improvement in the Process of Manufacturing Paper. (*Perfectionnement dans les procédés de fabrication du papier.*)

John Manning and Charles W. Knowles, Windsor, N. S., 31st December, 1880; for 5 years.

Claim.—In the manufacture of paper, the combination of anhydrous gypsum with the paper pulp.

No. 12,170. Improvements on Wire Sewing Machines. (*Perfectionnements aux machines à coudre au fil métallique.*)

The Wagner Wire Sewing Machine Company, (Assignee of Jacob Wagner, jr., and Louis Wagner,) Chicago, Ill., U. S., 31st December, 1880; for 5 years.

Claim.—1st. The method of manufacturing wire sewed brooms, which consists in securing separate cross wires or stitches to the retaining band consecutively and continuously, during the binding of the band upon the broom. 2nd. The method of manufacturing wire-sewed brooms, which consists in severing each successive stitch from the same continuous wire thread, and clinching it around the band in consecutive order, until the entire breadth of the broom has been traversed or sewed. 3rd. The combination, with a re-

ciprocating needle bar and a stitching needle secured thereto, of the broom clamp, or carriage moving intermittently forward across the path of the needle. 4th. The combination, with a reciprocating needle bar and a stitching needle secured thereto, of the broom clamp or carriage moving intermittently forward across the path of the needle, and pivoted tension guides. 5th. A broom machine provided with guides to hold the band wires, said guides pivoted so that as the band is being formed about the broom, they will bend the wire, thereby causing it to be drawn tightly about the broom. 6th. The combination, with the pivoted guides H H' and with the clamp, of bell cranks or stops H⁵ H⁵, engaging with said guides and clamp. 7th. In a pivoted wire guide, the combination, with a perforated sleeve, of a grooved rod entering and adapted to turn in said sleeve, whereby the said wire is locked. 8th. In a wire guide pivoted as described, the combination, with a tapering rod provided with a longitudinal groove, of a sleeve correspondingly perforated to receive said rod. 9th. The combination, with the horizontally movable clamp, of perforated guides for the band wire, whereby the perforations in said guides may be brought in line with each other to thread the wire and then turned to form the loop by the broom being pressed against it, as the clamp with the broom is being fed to the stitching needle. 10th. A needle bar provided with a longitudinal groove or perforation, and mechanism to reciprocate it, in combination with a perforated or grooved needle, whereby the wire is fed in a direct line and intermittently to the broom. 11th. A needle bar for sewing machines provided with longitudinal grooves or perforations guiding the wire to a needle. 12th. A sewing machine needle provided with a longitudinal perforation extending from end to end, said perforation forming a passage for the stitching wire or thread. 13th. The needle provided with the central longitudinal perforation or wire passage, and the point C formed at one side of said central longitudinal perforation. 14th. The combination, with a needle bar and needle, and devices for reciprocating the same, of a feeding cam lever, secured to said bar, and operated so as to hold the stitching wire during the forward, and release it during the backward movement of the bar and needle, whereby said wire is automatically fed through the material to form the stitch. 15th. A reciprocating needle bar longitudinally grooved and perforated, and provided with a friction cam, whereby the wire fed through said needle bar is prevented from slipping, when the bar is moving forward to feed it. 16th. A reciprocating needle bar, in combination with an open end perforated or slotted needle having said perforation or slot in line with and contiguous to said needle bar, whereby the wire is fed in a direct line to the broom to form the stitch in the same. 17th. A perforated or grooved needle bar having secured thereto and operating in said groove, a friction cam lever, in combination and contiguous with the groove or perforation in the needle bar. 18th. The combination with a needle bar having an automatically operating friction cam, of a supporting frame upon which said bar reciprocates, provided with a contiguous groove or perforation, and with one or more friction cams. 19th. The combination with the needle bar and its cam lever, of a bevelled plate secured to a stationary support, for operating said lever, so that it will be held from contact with the stitching wire during a portion of the forward movement of the bar and its needle, whereby said bar and needle will slide over the wire and cover the projecting end of the same. 20th. The combination, with the needle bar C and its needle, of the cam lever I, adjustable bevelled plate C' and cam levers C, D. 21st. The combination, with the reciprocating blocks and the binding arm or lever pivoted thereto, of the operating lever and cams. 22nd. The combination, with the reciprocating blocks and the shear arm or lever pivoted thereto, of operating lever and cams and the cutting blade. 23rd. The combination, with the cutting and clinching levers e, levers G G', bell crank G G' and cam wheel B₃, of a rod engaging with said wheel and connecting the bell cranks together, whereby the cutting and clinching levers are simultaneously operated to sever and clinch the stitching wire. 24th. The combination, with the lever e, levers G G' and lever G₂, of the bell cranks G G' pivoted to the levers G G' and to the supporting frames, and adjustably secured to levers G G₂, whereby the up and down stroke of the cutting and clinching levers may be varied. 25th. The combination, with the sliding blocks E' E₂, and the levers e₃ e₄ e₅, pivoted as described, of a lever E₃ connecting said levers. 26th. The blocks E' E₂ and levers e₃ e₄ e₅, connected to the blocks and with each other, in combination with the cutting levers E' E₂ and levers G G', bell cranks G G', lever G₂ and cam wheel B₃. 27th. The combination of clamp for holding a broom to feed it to sewing mechanism with an adjustable supporting plate carrying a part of said mechanism, and to which said clamp is attached, whereby the clamp and said plate may be simultaneously adjusted for brooms of differing thicknesses. 28th. The combination, with cutting and clinching levers e₁, block E₁ and lever e₃, of the sliding plate E, lever F, pivoted to the frame and to the lever e₃, and actuating mechanism, whereby the entire cutting and clinching mechanism is adjusted simultaneously with the clamp to articles of differing thicknesses and maintained in the proper position to sever and clinch the stitching wire. 29th. The combination, with the reciprocating blocks, the binding arm or lever pivoted thereto, and operating levers and cams, of the broom clamp or carriage. 30th. The combination, with a clamp and cutting and clinching mechanism, of a reciprocating needle carrying a stitching wire. 31st. The combination, with the reciprocating blocks, the bending arm or lever operating levers, and a reciprocating needle of the broom clamp or carriage. 32nd. The combination, with the reciprocating blocks, the bending arm or lever, operating levers and cutting blade, of a reciprocating needle and broom clamp or carriage. 33rd. The combination, with the reciprocating blocks, the bending arms or levers, cutting blades and operating levers, of a sliding and supporting plate, a broom clamp or carriage engaging with said plate, and a reciprocating needle. 34th. In a broom clamp or carriage, the combination, with a stationary jaw, of a movable jaw operating toward and from the stationary jaw and in a line parallel with the face of the same and an operating lever. 35th. In a clamp having a rigid jaw, a parallel horizontal sliding jaw, a transverse sliding jaw and an actuating lever connected with the horizontal jaw, and detachably connected with the transverse jaw, and operating said jaws independently or simultaneously to vary the thickness or breadth, or both of the articles held in said clamp. 36th. The combination, with a sliding jaw a₂, of a lever 6 secured to the shaft 5, and provided with a sliding block 9 engaging with pawl and with the gear wheel 14, a rod 10 and a handle 11. 37th. In levers for operating the jaws of a clamp, the slotted and recessed sleeve 6 secured to the shaft 5, rod 10 secured at its upper end to the handle 11, provided with lug 12 and, at its lower end, with a sliding block 9, recessed and provided with a pin 13, engaging with the notched flange of the wheel 14 and with pawl E. 38th. The combination, with the sliding clamp or feeder of a sewing machine, of an eccentric journal, secured upon the main shaft and connected with the bar A₃ and with said clamp or feeder.

whereby the material to be sewed is intermittently and automatically fed to said mechanism. 39th. The combination, with the sliding clamp or feeder of a sewing machine, of an actuating eccentric connected with said clamp or feeder, and adjustably connected with bar *A*₃, whereby the length of the forward stroke of said feeder is varied and the relative time of the stroke with the stitching mechanism maintained. 40th. The combination, with the clamp *A*₄ and ratchet bar 26, of a sliding block 27 mounted upon, and engaging with, said bar and provided with mechanism to reciprocate it and move the clamp intermittently forward. 41st. The clamp *A*₄, sliding block 27, pawl 28 and mechanism to operate the same, in combination with an L-plate 41, spring plate 42 and lug 44, whereby the clamp is automatically disengaged. 42nd. The clamp *A*₄, sliding block 27, pawl 28 and mechanism to operate the same, in combination with an L-plate 41, spring plate 42, bent arm 43, said plate 41 engaging with the arm and releasing the pawl. 43rd. A broom provided with a wire band for holding the stitches secured thereto by having its free ends twisted or wound about each other, at a right angle to the length of the broom. 44th. A broom having its encircling band secured thereto by twisting the free ends together, said ends being turned into the body of the broom, whereby the broom will present the appearance of having a continuous wire band.

No. 12,171. Improvements on Overalls. (*Perfectionnements aux pardessus*).

William Carter, Toronto, Ont., 31st December, 1880; for 5 years.

Claim.—1st. As a new article of manufacture, an overall with a piece of material sewn to the fly,

No. 12,172. Improvements in Paper Bag Machines. (*Perfectionnements aux machines à sacs de papier*).

William C. Cross, Boston, Mass., U. S., 31st December, 1880; for 5 years.

Claim.—1st. The combination, with feeding mechanism and the guide bar or rod, of a reciprocating and vibrating carrier or holder, means for actuating the same to move as described, and a clamp or retaining jaw on said carrier, between which and the carrier passes and is retained that ply of the blank which is to be folded back to make the diamond fold. 2nd. The reciprocating and vibrating carrier and means for actuating the same to move as described, in combination with the clamp or retaining jaw mounted on said carrier, and the guide bar or rod provided with a recess, in which the free end of the clamp is received. 3rd. The combination of the reciprocating and vibrating carrier or holder, the clamping or retaining jaw on the same, the guide bar or rod, the feeding mechanism and the delivery rolls. 4th. In combination with the reciprocating and vibratory carrier, and the guide rod or bar, the spring closed clamping or retaining jaw hinged or pivoted to said carrier and the stops or projecting arms, which operate to open said jaw at either extreme of the vibratory movement of the carrier. 5th. In machinery for making the first or diamond fold of a satchel bottom paper bag, a reciprocating and vibrating carrier plate external to the blank provided at its front with a nipper or jaw to grasp that ply of the blank next to it, and at its rear with a transverse guide or folding edge over which said ply is folded by the vibrating movement of said plate, while the latter and the blank move forward together.

No. 12,173. Improvements in Spring Tooth Harrows. (*Perfectionnements aux herbes à dents élastiques*).

James W. Fenwick, Patterson, Ont., 31st December, 1880; for 5 years.

Claim.—A spring tooth harrow in which the teeth are rigidly attached to the tooth bar set in its frame.

No. 12,174. Improvements in Sash Locks. (*Perfectionnements aux arrêtes-croisées*).

Jacob B. Yealey, Indianapolis, Ind., U. S., 31st December, 1880; for 5 years.

Claim.—1st. The combination, with the pivoted check shank *B*, face plate *C*, and side case plates *A*₁, of the tumbler *D* cut away at *d*, and the horizontal end case plate *A*₂ with its stop *b*. 2nd. The combination, with the tumbler *D* of the check shank *B*, provided with the stop *b*, and the end case plate *A*₂ provided with the stop *b*. 3rd. The combination, with the pivoted check shank tumbler and key, of the face plate, provided with the cross bar *c* and recess *e*, and the flat steel spring *E*.

No. 12,175. Improvements on Weather Strips. (*Perfectionnements aux bourrelets des portes*).

Nelson Smith and Thomas P. Saunders, Adams, N. Y., U. S., 31st December, 1880; for 5 years.

Claim. A weather strip formed of a U-shaped piece bent around a bar *c*, the latter being made to project beyond the former at each end so as to enter inclined recesses in the jambs of the door casing.

No. 12,176. Improvements in Paper Bag Machines. (*Perfectionnements aux machines à sacs de papier*).

William C. Cross, Boston, Mass., (Assignee of Edgar B. Stocking, Washington, D. C.) U. S., 31st December, 1880; for 5 years.

Claim.—1st. In machinery for making satchel-bottom paper bags, a rotary point reversing carrier. 2nd. A rotary point reversing carrier, consisting of a rotary roll or cylinder provided with a jaw or jaws, to carry the folded front part of the diamond fold of a satchel bottom bag and to reverse its position so as to bring the rear point of the diamond to the front relatively to the feeder. 3rd. The combination, with the rotary point reversing carrier, of rotating rolls or cylinders, armed with nippers and folding devices, or the equivalent of the same, by which the blank is taken from the carrier and the last fold formed therein. 4th. In combination with the nipper cylinder, the safety lever intermittently operated, to bring the point of the blank into position to be grasped by the nippers. 5th. The combination of the rotary point reversing carrier, its fellow cylinder or roll provided with a fold-

ing blade, the nipper cylinder, and its fellow roll or cylinder provided with nipping or grasping and folding devices, and actuating mechanism for said members. 6th. The feeding rolls provided with paste ridges and corresponding out away portions, in combination with rotary folding mechanism, as cylinders *D E*, and devices carried by the same. 7th. In the combination of feeding and pasting mechanism, the rotary cylinders *D E F G*, folding and grasping or nipping devices carried by said cylinders, and mechanism for operating said devices. 8th. In machinery for making satchel bottom paper bags, the combination of the following elements: a rotary point reversing carrier, a grasping or nipping mechanism in advance of said carrier which takes hold of the blank by the unfolded point of the diamond fold brought to the front by the carrier, and folding devices, which fold the said point after it has been released by the nipping or grasping mechanism.

No. 12,177. Improvements on Kettles.

(*Perfectionnements aux bouilloires*.)

Freeman Winslow, Salem, Mass., U. S., 31st December, 1880; for 5 years.

Claim.—1st. The improved kettle *b* having air tight cover *d* and one or more downward projecting wells or tubes *g*. 2nd. In combination with the kettle *b*, its closely fitting cover *d*, the rotary shaft *l* with its crank *m* and radial arms or wings *n n n*. 3rd. In combination, the outer case *a*, kettle *b*, cover *d*, one or more internal wells or tubes *g*, shaft *l*, crank *m* and radial arms or wings *n n n*. 4th. A kettle or pot consisting of an inner vessel or receptacle provided with a removable cover, and with one or more wells or brush tubes, and an outer heating vessel.

No. 12,178. Improvements in Fertilizers.

(*Perfectionnements aux engrais artificiels*.)

Francis C. Cook, New Haven, Ct., U. S., 31st December, 1880; for 5 years.

Claim.—In night soil, sulphate of lime, umber, sulphuric acid and lamp black, in or about the proportions named.

No. 12,179. Improvement in Hat Boxes and Valises. (*Perfectionnement aux valises-étuis à chapeau*.)

James M. Van Horn, Bridgewater, N.S., 31st December, 1880; for 5 years.

Claim.—A box opening in the middle, the sides of which are hinged to the bottom and provided with curved covered receptacles, which, when the box is closed, enclose a space within which is the cylindrical box *D*.

No. 12,180. Improvements on Window Blinds. (*Perfectionnements aux persiennes*.)

James M. Van Horn, Bridgewater, N.S., 31st December, 1880; for 5 years.

Claim.—1st. A blind constructed of two sets of slats one of which is stationary and the other movable, in a curved path parallel and closing closely one over another, whereby chafing is avoided and light and weather excluded. 2nd. The metal plates *C* having angular or curved slots, in combination with the strip *B* of the movable slat *B* having projecting pins entering the said slats.

No. 12,181. Lock Nut. (*Arrête-Noix*.)

John W. Labaree (Assignee of James B. Atwood) Springfield, Mass., U. S., 31st December, 1880; (Extension of Patent No. 5,582.)

No. 12,182. Improvements on Printing Machines. (*Perfectionnements aux machines à imprimer*.)

Thomas B. Dooley, Chelsea, Mass., U. S., 31st December, 1880; for 5 years.

Claim.—1st. The combination of the following elements, namely: two cylinders for giving the impressions, one, the larger cylinder, adapted to bear several different printing surfaces, and to have a space in addition to that occupied by, or adapted to said printing surfaces, the other, the smaller cylinder, adapted to bear the sheet to be printed, the two cylinders so geared together that, while the larger cylinder makes one revolution, the smaller cylinder makes as many revolutions as there are said printing surfaces, and an additional revolution, and also as many sets of inking rollers as there are said printing surfaces, located and operated so that each set of inking rollers may deliver ink onto one of said printing surfaces, and be raised above or pressed away from the other printing surfaces. 2nd. A cylinder for bearing the printing surfaces made up of several sections or short cylinders, so as to form circumferential recessed grooves for holding screws or bolts, for clamping the form blocks or plates on the cylinder. 3rd. An ink roller having on its shaft one or more pulleys or wheels bevelled or V-shaped each pulley or wheel being of two parts adjustable on said shaft, in combination with the cylinder having bevelled or V-shaped ways or guides for said pulleys or wheels. 4th. One or more nippers or fingers pivoted to the cylinder so as to assist in removing the sheet from said cylinders in the manner specified, each nipper or finger being hollow so that a partial vacuum may be created therein and having openings where it comes in contact with the sheet.

No. 12,183. Improvements on Attachment for Grinding Knives of Wood Planing Machines. (*Perfectionnements aux machines à remouler les couteaux des machines à raboter le bois*.)

Charles J. LeRoy, Palestine, Texas, U. S., 31st December, 1880; for 5 years.

Claim.—1st. In an attachment for grinding the knives of planing machines without removing the knives from the planer, the combination of the knife arbor *C* bearing cap *C* secured in place by bolts *c c*, the tubular upright post *D* provided with foot block *D'* that fits over the cap and is held in place by the bolts *c c*, and a grinding wheel shaft adjustably secured to the post *D* by bearing block *E* provided with hubs *E* that envelope the tubular posts and vertical screw shafts *J* journaled to the posts and passing through nuts in the bearing block. 2nd. The combination of the post *D*, bearing block

E, grinding wheel G, set screw *g*, slotted shaft F, collar L₂, screw shaft L, and rod L₃ that passes freely through a sliding collar upon the counter shaft K that gears with vertical screw shafts to raise and lower the grinding wheel shaft, these parts being combined for joint operation to adjust the grinding wheel both vertically and laterally.

No. 12,184. Manufacture of Paper Pulp.
(*Fabrication de la pâte à papier.*)

John T. Averill and Herbert M. Carpenter, St. Paul, Min., U.S., 31st December, 1880; (Extension of Patent No. 6,352).

No. 12,185. Improvements on Wheel Harrows.
(*Perfectionnements aux herbes à roues.*)

Frank Bramer, Little Falls, N. Y., U. S., 3rd January, 1881; (Extension of Patent No. 5,636.)

No. 12,186. Improvements on Wheel Harrows.
(*Perfectionnements aux herbes à roues.*)

Frank Bramer, Little Falls, N. Y., U. S., 4th January 1881; (Extension of Patent No. 5,636.)

No. 12,187. Improvements in Paper Bag Machines.
(*Perfectionnements aux machines à sacs de papier.*)

William C. Cross, Boston, Mass., U.S., 8th January, 1881; for 5 years.

Claim.—1st. The combination mechanism for making the diamond and second fold, of the third fold paster located beyond the second folder relatively to the direction of feeder, the third folder located beyond the paster and the carrier for conveying the blank from the paster to the folder. 2nd. The combination, with the diamond and second fold forming mechanism, of the rotating third fold paster, the carrying tapes, or their equivalent, inclined at the front and the folding fingers.

No. 12,188. Improvements in Buggy Tops.
(*Perfectionnements aux couvertures des voitures.*)

Edward N. Heney, Montreal, Que., 8th January, 1881; for 5 years.

Claim.—1st. The shifting rails A provided with eyes B, in combination with rail C secured therewith. 2nd. The combination of the rails A having eyes B, with rail C, back quarters F and curtain C.

No. 12,189. Improvements on Skylights.
(*Perfectionnements aux lucarnes.*)

James L. Oakley, Greensborough, N. C., U. S., 8th January, 1881; for 5 years.

The combination of the frame A B, its strips *a*, the panes *b* confined between the strips *a* and the elastic plates C overlapping each other, secured to the strips *a* and bearing upon the panes, and each serving as a bearing for the pane above.

No. 12,190. Improvements on Fishermen's Reels.
(*Perfectionnements aux dévidoirs des pêcheurs.*)

Francis A. Loomis, Onondaga, N. Y., U. S., 8th January, 1881; for 5 years.

Claim.—1st. In an automatic fisherman's reel, the combination of the spool G H, spring A, stationary wheel B, pinion E and arm *b* carrying the planet wheel C and pinion D, all centering on the axis of rotation of the spool. 2nd. The combination of the spring A and spool G H, surrounding and moving about the fixed central stud *s*, and multiplying and planetary gearing as shown, with the friction brake F bearing against said spool and acted upon by the hand of the operator to control the reeling in the line.

No. 12,191. Improvements in Carriage Tops.
(*Perfectionnements aux soufflets des voitures.*)

Daniel Conboy, ~~Ont.~~ ^{Ont.}, 8th January, 1881; for 5 years.

Claim.—1st. In a carriage top, the short bows A provided with a pivot *a*, in combination with the plate C and main bow B. 2nd. In a carriage top, a seat rail E provided with feet *f* corresponding with the projections of the seat iron D, in combination with the bolt *e* passing through a slotted or oblong hole. 3rd. A spring G, or its equivalent, attached to the seat rail E and arranged to form a cushion for the carriage top. 4th. The central bow B provided with ears *d*, in combination with the short bows A pivoted upon the pin *a* which passes through the ears *d*.

No. 12,192. Improvements on Tables.
(*Perfectionnements aux tables.*)

William Wright and James H. Sager, Belleville, Ont., 8th January, 1881; for 5 years.

Claim.—1st. The combination of the cramps D, rods E and bars F J, with the trestles A and top C. 2nd. The combination of the cramps D, rods E G K, bars F J and hooks H, with the trestles A and top C.

No. 12,193. Clamp Buckle.
(*Boucle à emboiture.*)

Vincent A. Coleman, Port Hope, Ont., 8th January, 1881; for 5 years.

Claim.—1st. The combination of the three plates, the tongue plate F, the top plate A and the bottom plate B, by means of the hinge H and the links C C or of a ball, or their equivalents, so as to form a complete buckle. 2nd. The combination, with the square shoulder *e* or the tongue E, the bearing *t*, of the plate A.

No. 12,194. Improvements on Vehicle Hold-backs.
(*Perfectionnements aux ragots des limonnières.*)

James Spurr, Picton, Ont., 8th January, 1881; for 5 years.

Claim.—The combination of the plate D, socket C, pins D E and slot G.

No. 12,195. Improvements on Governors for Steam Engines and other Motors.
(*Perfectionnements aux gouverneurs pour les machines à vapeur et autres.*)

George F. Bottle, Boston, Mass., U. S., 8th January, 1881; for 5 years.

Claim.—1st. The combination of the revolving screw shaft H, the fan N, fans N' N' and the fluid in closing chamber A, with the lifter tube H¹, stem H² and weighted lever K. 2nd. In a valve chamber C, the combination of the solid cylinder H, the outlet pipe E and the sliding sleeve F, all operating together.

No. 12,196. Improvements on Pantographs.
(*Perfectionnements aux pantographes.*)

John J. F. Schnoor, Davenport, Iowa, U.S., 8th January, 1881; for 5 years.

Claim.—1st. The combination of four bars pivoted to each other in a quadrangular form, so that bars on opposite sides shall remain at all times parallel with each other, a tracing point located at one of the pivotal points, a pencil located at the opposite pivotal point, a cross bar connecting two opposite sides, and a pivotal support for said cross bar. 2nd. In combination with the bars A A₁ B B₁, the cross bar C adjustedly mounted upon a pivotal support and connected with the bars A A₁ by adjustable pivots. 3rd. The combination of bars A A₁ C furnished with corresponding graduations, bars B B₁, a pivotal support for the bar C in relation to which the bar can be adjusted, and adjustable pivotal connections between the bar C and the bars A A₁.

No. 12,197. Self-Setting Mouse and Rat-Trap.
(*Souricière-ratière automatique.*)

William Hull, Macoville, Ont., 8th January, 1881; for 5 years.

Claim.—A trap F pivoted in the box A on the ledge G, in combination with the hole D separated from the trap F by the floor E.

No. 12,198. Improvements on Combined Anvils and Vices.
(*Perfectionnements aux enclumes-étaux.*)

James W. Cheney, Detroit, Mich., U. S., 8th January, 1881; for 5 years.

Claim.—1st. The combination, with the face of the anvil A, of a pivoted jaw G adapted to be rotated horizontally about its pivot. 2nd. The combination with the face of the anvil A, of a readily removable pivoted jaw G adapted to be rotated horizontally about its pivot. 3rd. The combination, with the face of the anvil A, of a pivoted jaw G, the base of which rests upon said anvil face and is adapted to be rotated in a horizontal plane thereupon, and means for locking said pivoted jaw rigidly to the anvil. 4th. An anvil A having the stationary jaw G of a vice pivoted to its face and capable of horizontal rotation about its pivot, and of a movable jaw C provided with a stem fitting within a recess in the anvil A, and a screw D for operating said movable jaw. 5th. A removable jaw G combined with the face of the anvil A, said removable jaw set into a recess which opens into the interior of the anvil, whereby dirt is prevented from collecting in the said recess. 6th. The combination, with the anvil A provided with perforated supports or lugs *f* and a bearing plate F₂ secured against rotation within grooves F₃ in the anvil, of a bed plate F₁ provided with a circular depression *f*₃ for receiving a circular boss *f*₂ on the bearing plate F₂, said parts connected by a pivotal bolt F₁, the bed plate being provided with any desired number of holes in its outer edge and readily removable pins for securing the anvil to the bed plate at any desired angle of adjustment. 7th. A pivoted jaw G combined with the face of the anvil A and pins *g* setting into holes in the face of the anvil, or their equivalent, whereby the jaws may be set square for ordinary use.

No. 12,199. Improvements in Water Closets.
(*Perfectionnements aux latrines.*)

Alexander G. Alexander, Detroit, Mich., U. S., 8th January, 1881; for 5 years.

Claim.—1st. The combination, with the water closet bowl and a trunk B of the tank L connected with the bowl by a pipe or slot K, the main service pipe leading into the bowl, an overflow pipe M having a trap N and leading from the tank L into the trunk E or other suitable place for discharge of surplus water. 2nd. The combination, with the bowl and trunk of a water closet, of a tank L having a communication by a pipe or slot K with the bowl in which tank is afloat or ball valve which is operated by the water in the tank, so as to admit water into the bowl and check the flow of water at any desired point.

No. 12,200. Improvements in Horse Shoe Nail Machines.
(*Perfectionnements aux machines à clou à cheval.*)

Lyman W. Whipple, Boston, Mass., U.S., 8th January, 1881; for 5 years.

Claim.—1st. The combination of punching mechanism consisting of a reciprocating punch and a stationary die adapted to hold one or more blanks with a forwarder having yielding jaws and mechanism, whereby said forwarder is presented to the die held to receive a blank when the latter is ejected from the die, and then moved to present the blank properly to a succeeding device. 2nd. The combination of punching mechanism, a forwarder having grasping jaws, means whereby the forwarder is held to receive a blank emerging from the punching mechanism, and then moved to carry the blank forward, and a former arranged and operated to grasp the blank and remove it from the forwarder. 3rd. The combination of a former consisting of a pair of rotating or vibrating rolls *a a*, a forwarder having grasping jaws and mechanism, whereby said forwarder is presented to a preceding device held to receive a blank from such device, and moved to present the head of the blank properly to the rolls *a a*. 4th. The combination of two formers in intermediate forwarder having grasping jaws and mechanism, whereby said forwarder is held to receive a blank emerging from one former and moved to present said blank to the succeeding former. 5th. In a machine for making cold, rolled horse shoe nails employing as elements a series of devices consisting of punching mechanism to separate a blank

from a plate and formed to successively roll the blank, the combination, with said devices, of series of intermediate forwarders having grasping jaws and mechanism, whereby said forwarders are held to receive the blanks and moved to present the same properly to the succeeding devices. 6th. The combination of duplicate punching mechanism arranged to cut two blanks simultaneously from a plate, two forwarders having grasping jaws, means whereby said forwarders are held to receive two blanks emerging from the punching mechanism, and to carry forward and distribute said blanks and two forwarders arranged to grasp the two blanks simultaneously and remove them from the forwarders. 7th. The combination of a former consisting of a pair of rolls *a a* adapted to perform a part of the operation of forming a nail, a forwarder adapted to receive a blank from a preceding device and to present the blank to the former, and means for imparting a yielding pressure to the forwarder, whereby said forwarder is enabled to yield when its blank comes in contact with the rolls *a a*. 8th. The combination of the following elements, to wit: first a gang of formers operating in unison to form and move forward two or more nail blanks, secondly, a gang of forwarders operating in unison to receive the nail blanks emerging from the formers and move said blanks forward, and thirdly, means for imparting a yielding pressure to said forwarders, whereby the alignment of the heads of the blanks and their simultaneous forward movement are insured. 9th. A pair of journalled rolls *a a* having coincident cavities or dies *b b* and mechanism to oscillate or vibrate said rolls and bring them to a point of rest at the moment when the dies are properly opened, whereby the dies are momentarily held to receive the blank before moving to roll the same, combined with a forwarder having grasping jaws and mechanism, whereby said forwarder is presented to a preceding device held to receive a blank from such device and moved to present the blanks to the dies *b b*. 10th. One or more series of formers to form a nail or nails by successive operations, and one or more series of forwarders to move the blank or blanks between the formers, all so arranged as to expose the nail blank or blanks to view. 11th. In combination, with the punching mechanism and the formers, the forwarders *F F*, the rotary spindles *f f* supporting said forwarders, and means whereby said spindles are intermittently rotated, and raised and lowered. 12th. The forwarder having separable spring jaws and the means for equalizing the movement of said jaws. 13th. In combination, with the bed *J* supporting the nail plate, and the cam *S* journalled in ears on said bed, the shoe *K* pivoted to the bed and adapted to be pressed by the cam against the nail plate. 14th. The combination of the clipping mechanism consisting of the reciprocating punch or shear and stationary bed die, a forwarder *F* adapted to move forward and present a blank to the clipping mechanism and the false jaws *v* pivoted to the bed die and forming a stop to limit the end movement of a blank presented to the clipping mechanism by the forwarder.

No. 12,201. Improvements on Skates. (*Perfectionnements aux patins.*)

Peter Rodier, Detroit, Mich., U. S., 8th January, 1881; (Extension of Patent No. 5,571.)

No. 12,202. Washboard. (*Planche à laver.*)

Thomas R. Fuller, Toronto, Ont., Assignee of Eliza J. Duff, Edward A. Kitzmiller and Robert P. Duff, Pittsburg, Pa., the Assignees of Westley Todd, Ol-kee, Ohio, U. S., 8th January, 1881; (Extension of Patent No. 5,573.)

No. 12,203. Steam Pump or Boiler Feeder. (*Pompe ou alimentateur de chaudière à vapeur.*)

Thomas Northly, Hamilton, Ont., 10th January, 1881; (Extension of Patent No. 5,566.)

No. 12,204. Mode and Machine for Manufacturing Scale Board Boxes. (*Mode de fabrication des boîtes en éclisse et machine pour cet objet.*)

Harrison W. Hutchins, Livermore Falls, Me., U. S., 10th January, 1881; (Extension of Patent No. 5,576.)

No. 12,205. Apparatus for Making Brushes. (*Appareil pour faire les pinceaux.*)

John L. Whiting, Boston, Mass., U. S., 14th January, 1881; (Extension of Patent No. 5,660.)

No. 12,206. Machine for Making Brush Handles. (*Machine pour faire les manches des pinceaux.*)

John L. Whiting, Boston, Mass., U. S., 14th January, 1881; (Extension of Patent No. 5,643.)

No. 12,207. Machine for Macking Bricks and Tiles. (*Machine à brique et tuile.*)

George S. Tiffany, London, Ont., 14th January, 1881; (Extension of Patent No. 5,591.)

No. 12,208. Sewing Machine. (*Machine à coudre.*)

Jeremiah Keith, Providence, R. I., U. S., 14th January, 1881; (Extension of Patent No. 5,590.)

No. 12,209. Improvements in Clothes Washers. (*Perfectionnements aux lavuses à linge.*)

Sampson Rae, Urbana, Ill., U. S., 15th January, 1881; for 5 years.

Claim.—1st. A clothes pounder, a cap surmounting the cylinder, and adapted to shed back the water and suds, which pass the piston. 2nd. In combination with the cylinder and piston, the bell-shaped cap secured above the cylinder and adapted to shed back the water and suds. 3rd. In combi-

nation with the cylinder and piston, the shaft enclosed in metal and playing freely through the spring and sleeve which supports the cap. 4th. In combination with the cylinder, piston, cap and spring, the shaft *D* having lateral handle and adjustable collar *E*.

No. 12,210. Improvements on Automatic Grappling Buckets. (*Perfectionnements aux seaux à étreinte automatique.*)

Frank G. Johnson, Brooklyn, N. Y., U. S., 15th January, 1881; for 5 years.

Claim.—1st. An automatic grappling bucket *D D D*, for grappling and hoisting various materials consisting of equal and similar sections *d d d* of a half globe, in combination with the working arms or ribs *d₁ d₁ d₁* and connecting rods *d₂ d₂ d₂*. 2nd. An automatic grappling bucket *D D D* consisting of equal and similar sections *d d d* of a half globe, in combination with the working arms or ribs *d₁ d₁ d₁*, connecting rods *d₂ d₂ d₂*, sheave blocks *E E* and sheaves *N N*, frame rods *f f f f*, closing and hoisting rope *g*, and opening and discharging rope *g¹*. 3rd. An automatic grappling bucket *D D D* consisting of equal and similar sections *d d d* of a half globe, the alternate sections being slightly further from their centres of motion than their adjacent sections, in combination with the working arms or rods *d₁ d₁ d₁*, and the connection rods *d₂ d₂ d₂*. 4th. In an automatic grappling bucket, the combination of the connection rods *d₂ d₂ d₂*, the split flange and rim *c c* and its containing ring *c¹* (fig. 3). 5th. The caster rollers, or their equivalents, arranged upon the points of the sections *d d d*.

No. 12,211. Improvements on Grain Drills. (*Perfectionnements aux semoirs-traccurs.*)

Jesse O. Wisner and Wareham S. Wisner, Brantford, Ont., (Assignees of Edwin D. Mead, Shortsville, N. Y., U. S.,) 15th January, 1881; for 5 years.

Claim.—1st. In combination with a cupped feeding wheel *A*, a pivoted regulator or gate *B*, provided with a projecting arm or lip *C*. 2nd. In a pivoted gate operating with a cup-shaped feed wheel, a projecting arm or lip *C*, in combination with a rounded projection *f* cast upon the case *F*. 3rd. In a pivoted gate, operating with a cup-shaped feed wheel, and elongated orifice *D*, provided with a shelf *E*. 4th. A detachable partition *G*, in combination with the case *F* forming a pivot for the gate *B*.

No. 12,212. Improvements on Wooden Pumps. (*Perfectionnements aux pompes en bois.*)

David Plews, Toronto, Ont., 15th January, 1881; for 5 years.

Claim.—1st. In combination with a banded, bolted, or clamped wooden rump, an improved stuffing box *C*, a metallic cylinder *B*, a tube *D*, foot iron *E* and hose coupling fastener *F*. 2nd. A foot iron *E* constructed with double bearings, one on each side of the pump, with an aperture *e₃*, shoulder flange *e₅*. 3rd. In combination with a banded wooden pump, the stuffing box *C* with cover *C₁*, handle *C₂*, sectional packing *C₃*, air apertures *C₄*, with or without the metallic cylinder *B*. 4th. The sectional packing *C₃* in a non-sectional stuffing box chamber *C₁*. 5th. In combination with the spout *S* of a banded wooden pump, the hose coupling fastener *F* with cam lever *F₂*. 6th. In combination with a banded wooden pump, the foot iron *E*, hinged rock shaft *E₂*. 7th. In combination with a banded or bolted or clamped wooden pump, the tube *D* in top of pump. 8th. In combination with a banded, bolted, or clamped wooden pump, the spout *S*, and lower end of tube *D*, in their relative positions to form a reservoir in pump top, also in combination with a banded, bolted, or clamped wooden pump, the spout *S* and air vessel *H*, placed on the outside of the pump, being an equivalent device for forming reservoirs.

No. 12,213. Improvements in Fastening Mail Bags. (*Perfectionnements aux fermetures des valises à lettres.*)

John H. Bartlett and Peter D. Macintyre, Ottawa, Ont., 15th January, 1881; for 5 years.

Claim.—1st. The combination of the plates *C D* and the links *F G* with the loop or eye *E*. 2nd. The mode of fastening the clasp to the bag by rivets passing through the holes *h h* in the back plate *C*.

No. 12,214. Improvements on Dynamo-Electric Telegraphy. (*Perfectionnements aux télégraphes électro-dynamiques.*)

Orazio Lugo, New York, U. S., 15th January, 1881; for 15 years.

Claim.—1st. The method of producing intelligible signals in a telegraphic circuit by generating dynamo-electric currents in branch circuit with the main line, the resistance of the branch circuit being greater than that of the generator, and less than that of the main line or lines. 2nd. The method of automatically varying the electro-motive force of the generator by merely throwing the line wire into or out of circuit. 3rd. The combination of dynamo-electric generator, a constantly closed shunt circuit and one or more telegraphic circuits, all connected in multiple are with said generator, one or more instruments for receiving intelligible signals included in each of said telegraphic circuits, and a key or circuit breaker, placed in the exterior circuit of the generator, at a point traversed by the common current of all the telegraphic circuits, but not by that of the shunt circuit. 4th. The combination of a telegraphic circuit, the revolving armature coil and stationary field magnet of a dynamo-electric generator included in said circuit, and a shunt circuit of low resistance connecting the opposite poles of the generator, the resistance of said circuit being greater than the internal resistance of the machine and less than that of the telegraphic circuit. 5th. The combination, in a dynamo-electric generator, of a revolving armature coil, and a stationary field magnet, both of which are included in the same circuit with the exterior resistance, a shunt circuit which connects the poles of the generator with each other, and thereby acts to keep the circuit of the armature and field magnet continuously closed without reference to the condition of the exterior or working circuit, and means for adjusting or regulating the electrical resistance of said shunt circuit. 6th. The combination of a dynamo-electric generator, one or more electric circuits connected therewith, one or

more keys for transmitting signals through said circuit or circuits by alternately breaking or closing the same, and a constantly closed shunt circuit of low resistance connecting the opposite poles of the said generator, the resistance of the shunt circuit being greater than the internal resistance of the generator, but less than that of the telegraphic circuit. 7th. The combination of dynamo-electric generator, one or more electric circuits connected therewith, one or more keys for transmitting signals through said circuit or circuits by alternately breaking and closing the same, a constantly closed shunt circuit connecting the opposite poles of the said generator and means for adjusting or regulating the electrical resistance of said shunt circuit. 8th. The combination of a dynamo electric generator, one or more electric circuits connected therewith, one or more keys for transmitting signals through said circuit or circuits by alternately breaking and closing the same, means for adjusting or regulating the resistance of said circuit or circuits, a constantly closed shunt circuit connecting the opposite poles of said generator, one or more keys for transmitting signals through said circuit or circuits, a constantly closed shunt circuit connecting the opposite poles of said generator, one or more telegraphic circuits included in branch circuit with the generator apparatus, for producing intelligible signals on the line, and a local sounder in branch circuit with the shunt circuit and telegraphic circuits. 11th. The combination of a dynamo electric machine or generator, a shunt wire or short circuit connecting the opposite poles of its armatures, a primary circuit (in which is enclosed a key and the primary helix of an induction coil), in branch circuit with said shunt wire, with a telegraphic circuit or main line in which are included the secondary helix of the induction coil, and signaling instruments actuated by the currents induced in the secondary circuit by the makes and breaks of the primary.

No. 12,215. Improvements on Piston Packings. (*Perfectionnements aux garnitures des pistons*).

Thomas Tripp, East Stoughton, Mass., U. S., 19th January, 1881; for 5 years.

Claim.—1st. A metallic packing ring for piston rods, composed of a series of prismatic plates, the meeting faces of which are parallel with each other, and with the periphery of the rod, such plates encircling the rod and the joints between their meeting edges or between such edges and the periphery of the rod being covered by a second series of plates overlapping the first, and the whole being crowded up to the rod by spring impelled rings. 2nd. Metallic packing rings composed of two sets of parallel plates as stated, bevelling the ends of such ring and enclosing such ends in annular caps, which operate by spring pressure, and by their bores to contract the ring about the rod. 3rd. In combination with the packing ring built up of parallel prismatic plates, and provided with the annular compression caps, as stated, the employment of a flat annular or cheek ring, disposed between the outer cap and the head of the stuffing box, the bore of the cheek ring enclosing a conical annular seat upon the cap and operating to prevent escape of steam from the interior of the stuffing box, during irregular movements of the rod, by adapting itself to such movements of the rod, while maintaining a tight joint with the head of the box. 4th. A metallic packing ring for piston rods composed of two sets of plates, four in each set (eight in all), the wearing faces of these plates, with respect to each other, and the periphery of the rod which they inclose, being parallel to the latter, and the plates of the inner series being in cross section, a quadrant of a tube of square exterior and circular bore, the outer plates breaking joints with the inner ones, and the rod. 5th. In combination, the rod B, ring E composed as stated, annular caps F G, check ring H and springs I L, with the box C, the latter being secured rigidly to the cylinder head, and the rod and packing ring being susceptible of lateral play within the box. 6th. The plate C as being prismatic in form, and an equilateral triangle in cross section, with the exception of one face being concave, and with all its longitudinal faces parallel and its ends bevelled. 7th. In combination with the piston rod, the annular caps F G, and a fibrous packing, interposed between the two. 8th. The elastic diaphragm U, in combination with packing rings, rod B, ring G, box or case C, and annular D. 9th. The plates *bs bs* as made up of the plates *b* in one integral piece.

No. 12,216. Improvements in Potato Planters. (*Perfectionnements aux semoirs à patates*).

Bartholomew J. O'Neill, Uxbridge, Ont., 15th January, 1881; for 5 years.

Claim.—1st. A flat wheel or disc I, provided with spring hooks J, in combination with the potato hopper B and chute K. 2nd. In a potato planter, a plough D attached to the frame C, in combination with the potato chute K. 3rd. The wheels G on the frame E, which is pivoted to the frame C, and carries the scufflers F, in combination with the notched bar H.

No. 12,217. Improvements in Furnace Grates. (*Perfectionnements aux grilles des fourneaux*).

Christopher Hill, Poplar, Eng., 15th January, 1881; for 5 years.

Claim.—1st. The construction of fire bars B, having their centres arched upwards or raised. 2nd. The construction of bearing bars A, having their centres arched upwards or raised, and the arrangement of the fire bars employed in connection therewith.

No. 12,218. Improvements on Hoop Machines. (*Perfectionnements aux machines à cercles*).

Crowell M. Clancy, Wallaseburgh, Ont., 15th January, 1881; for 5 years.

Claim.—1st. A vertically reciprocating knife to cut the straight sides of the hoops, and a knife having a reciprocating motion diagonal to the vertically reciprocating knife, said knives alternating in their movements. 2nd. A vertically reciprocating knife to cut the straight sides of the hoop, and a knife having a reciprocating motion diagonal to the vertically reciprocating knife, said knives alternating in their movements and both deriving their motion from a shaft common to both. 3rd. A vertically reciprocating knife

to cut the straight sides of the hoop, and a knife having a reciprocating motion diagonal to the vertically reciprocating knife, said knives alternating in their movements, in combination with a knife having a horizontal cut. 4th. A vertically reciprocating knife, a diagonally reciprocating knife and a knife having a horizontally moving cut, all such knives deriving their motion from a common shaft.

No. 12,219. Improvements on Brakes. (*Perfectionnements aux freins*).

Alonzo Johnson, Adams O. Sinclair, Springfield, and James B. Atwood, Three Rivers, Mass., U. S., 15th January, 1881; for 5 years.

The combination of a winding drum provided at one end with ratchet teeth, a lever having its centre of motion upon the same axis with and moving independently of said drum, a pawl loosely pivoted to and moving with said lever and arranged to drop into engagement with said ratchet teeth, a fixed pivoted foot pawl to hold the drum in any position into which it is moved, and a trip for disengaging the movable lever pawl from the ratchet teeth.

No. 12,220. Wire Baling Tie. (*Cercle d'emballage en fil métallique*).

The Washburn and Moen Manufacturing Company, Worcester, Mass., (Assignee of Peter K. Dederick, Albany, N. Y.), U. S., 15th January, 1881; (Extension of Patent No. 5,646.)

No. 12,221. Wire Baling Tie. (*Cercle d'emballage en fil métallique*).

The Washburn and Moen Manufacturing Company, Worcester, Mass., (Assignee of Peter K. Dederick, Albany, N. Y.), U. S., 17th January, 1881; (Extension of Patent No. 5,646.)

No. 12,222. Improvements in Elevator Stops. (*Perfectionnements aux enrayages des monte-charges*).

George W. Flitts, South Hampton, N. H., and Leroy F. Griffin, Lake Forest, Ill., U. S., 17th January, 1881; for 5 years.

Claim.—1st. The combination, with the elevator cab and the stationary guide therefor, of the horizontal lever F having the clamping head H and the spring L arranged to throw the head H into engagement with the guide, said lever being pivoted to the rigid support G or otherwise to the cab, at one side of the guide, in such manner as to allow to the lever both a longitudinal and a vibrating movement on its pivoted point, and also being so connected with the hoisting rope that the head H is held free of the guide when the rope is taut. 2nd. The combination, with the elevator cab and the guide E, the clamping head H, its operating hand lever F located in reach of the attendant and device, substantially as described, whereby the lever may be held disengaged from the guide when not in action. 3rd. In combination with the lever F, having the clamping head H, arranged in an elevator cab to act with the guide E as a stop to the cab, said lever having both a pivoted and longitudinal movement, the catching device consisting of the pin *p* attached to the lever, and the fixed plate M having the notch *n* and the elevation *m* which guides the pin into engagement with the notch.

No. 12,223. Improvements on Furniture Castors. (*Perfectionnements aux roulettes des meubles*).

Michel Fiset, Albany, N. Y., U. S., 17th January, 1881; for 5 years.

Claim. In a castor wheel, the combination, with an elastic rim F, of the solid hub E having a central bore and provided at one end with a flange C, and a pierced projection *d* at its other end, with a screw threaded rib *b* and the flanged *e f*.

No. 12,224. Improvements on Blind Fasteners. (*Perfectionnements aux arrête-persiennes*).

Michel Fiset, Albany, N. Y., U. S., 17th January, 1881; for 5 years.

Claim.—1st. The combination, with hinges E G, of the eye catch D, secured to the blind at the strap portion of said hinges, and arm H provided with a catch *a* and pivoted to the casing at the hook portion of said hinge. 2nd. The catch *a* having its nose bevelled and pivoted from the attaching plates of the hook portion of the hinges E G, in combination with the catch D, bevelled at X and made with the strap portion of said hinge. 3rd. The combination, with the middle bar *h* of the blind and slat bars K K, of the button M pivoted to said middle bar. 4th. The combination, with a blind having its slats locked closed by button M, of the catch J, pivoted so as to project wholly from the inner side of said blind with no part thereof passing beyond the outer side of the same, and the catches L secured to the sill of the casing of the window. 5th. The combination, with a blind hinged to a casing of a window and having catch H A provided with a lifting piece *b* and secured to said casing for engagement with catch D secured to the blind at a point near to the knuckle of the hinge, of catch J secured so as to project wholly from the inner side of the blind, said catch L fixed to the sill, and button M pivoted to the middle bar of the said blind and locking over the ends of the slat-rod or bar K K. 6th. The combination, with the attaching plate F, provided with the hook portion of hinges E G, of the angle piece P provided with slot *d*, whereby the said attaching plate will be readily adjusted in a vertical direction and be partly secured to the wall of the building.

No. 12,225. Improvements on Clothes Wringers. (*Perfectionnements aux essoreuses à linge*).

Charles J. Shirreff, Brockville, Ont., 17th January, 1881; for 5 years.

Claim.—1st. The combination, with the wringer frame A of the legs F held by bolts G, and cone brackets L carrying rollers O P. 2nd. An apron frame consisting of brackets L and rollers O P eccentrically pivoted to legs F attached to oscillate on the standards A, whereby the movement of the frame from a vertical to a horizontal position clamps the wringer to the tub; 3rd. An apron frame operating on the delivery side of a wringer frame

for conveying the clothes from the rollers, and clamping the wringer to the tub.

No. 12,226. Improvements on Horse Boots.

(*Perfectionnements aux bottes de cheval.*)

Andrew Randall, Albany, N. Y., U. S., 17th January, 1881; for 5 years.

Claim.—1st. In a horse boot, the body A provided with inner plates B hollow rear pads D D and a series of hollow side pads C, said pads being of one piece with said body A. 2nd. In combination with the body A having hollow pads C D, arranged as set forth in weight E tapering from front to rear and held by catch plate F.

No. 12,227. Improvements on Meal Chests.

(*Perfectionnements aux farineières.*)

Samuel W. Brooke, Newark, Ohio, U. S., 17th January, 1881; for 5 years.

Claim.—A meal chest having at its front side a receptacle for the kneading board formed by the partition H, which extends nearly to the bottom of the chest and leaves an open space M, to admit flour dropping from the board to the main part of the chest.

No. 12,228. Improvements on Steam Engine Injectors.

(*Perfectionnements aux injecteurs des machines à vapeur.*)

Edward Davies, Llandinam, Eng., 17th January, 1881; for 5 years.

Claim.—1st. In an injector for steam engines, a sealed overflow branch. 2nd. An overflow pipe constructed to form a water seal or luting at or near its outlet orifice. 3rd. The combination of a flap valve and a water luting or seal, with the overflow pipe. 4th. The combination of the casing, the combining and discharging cones and a sealed overflow branch, to form an air-tight chamber between the combining and discharging cones, when the injector is working. 5th. A sectional combining cone adapted to be automatically expanded by, and proportionally to the pressure of the fluid passing through it, and to contract automatically and proportionally to and with the diminution of said pressure. 6th. The combination, with a discharging cone, of a combining cone provided with an extension or bearing, to adjustably support said discharging cone. 7th. The combination, with a discharging cone and a combining cone, of an intermediate receiving cone adjustably supported by

the latter and fitted adjustably within the former. 8th. A combining cone capable of longitudinal adjustment, in combination with a crank shaft *a*, its hand wheel *a*₃ provided with graduations or other indices indicating the extent of contraction or expansion of the interior diameter of the cone, when moved to or from the spindle, and the pointer *a*₄. 9th. The combination, with the casing, the combining cone D provided with the bearings *d*₅, the receiving cone E₁ and discharging cone E, of the crank shaft *a*, its hand wheel and the pointer *a*₄. 10th. The combination, with an injector for steam engines, of an auxiliary injector. 11th. The combination of an injector and auxiliary injector, each provided with an overflow branch capable of being sealed when the injector is working. 12th. The combination of an auxiliary injector adapted and arranged to be simultaneously worked by exhaust steam and live steam respectively. 13th. The combination, with an injector and an auxiliary injector, of a valve interposed between the two. 14th. The combination of the casing H having steam passage *h*₁ and two way-cock M, of the receiving cone I and the combined combining and discharging cone K K₁. 15th. The combination, with the casing H, the combined combining and discharging cone K K₁ and the valve L, of the overflow chamber K and the two way-cock M. 16th. The combination of the casing H having steam passage *h*₁, the two way-cock M, the receiving, combining and discharging cones I K K₁, the overflow chamber K and the valve L. 17th. In a combined injector—injector, the combination with the combining cones D K K₁, of an intermediate discharging cone extending from one combining cone into the other. 18th. The combination, with the casing A H, the combining cone D provided with a bearing sleeve *d*₅, the combined combining and discharging cone K K₁ and the tubular partition support N of the discharging cone O.

No. 12,229. Improvements on Stove Trucks.

(*Perfectionnements aux camions pour les poêles.*)

Martin B. Schenck, Fulton, N. Y., U. S., 17th January, 1881; for 5 years.

Claim.—1st. A stove truck having a platform in two parts fixed at any desired distance asunder by means of a reach adjustable in one or both of the members. 2nd. A platform truck constructed in two parts connected by a central reach secured adjustably to the respective members of the truck, so as to admit of fastening them at any desired distance apart. 3rd. A stove truck having two members, adjustable as to distance apart and provided with cleaks *a*₁ to receive and retain the stove feet. 4th. The combination of the separate truck ends A A₁, a reach having a slot E, bolt D and nut E. 5th. A stove truck having a platform in two parts A A₁ and having central extensions A, and a central reach C sliding in socket B.

List of Patents issued up to 4th March, 1881, but not yet Officially published in the Patent Office Record.

- No. 12,365. Henry B. Clark, Toronto, Ont., "All Wire Spring Mattress," patented February 16th, 1881.
- No. 12,366. Mannel Jaspas, Walkerton, Ont., "Head Block," patented February 16th, 1881.
- No. 12,367. William C. Bantam, Port Rowan, "Boots and Shoes," patented February 16th, 1881.
- No. 12,368. Edward R. Jones, of Chemung, New York, "Harness Pads," patented February 16th, 1881.
- No. 12,369. William A. Beckford, Minneapolis, Minn., "Improved Force Pump," patented February 16th, 1881.
- No. 12,370. William M. Wilcox, Port Perry, Ont., "Waggon Jack," patented February 16th, 1881.
- No. 12,371. Thomas T. Wilkins, London, England, "Prophylactic Process," patented February 16th, 1881.
- No. 12,372. James L. Barnard and Samuel Briggs, Hamilton, Ont., "Portable Mould," patented February 16th, 1881.
- No. 12,373. George T. Stickell, Toronto, Ont., "Knife Polishing Powder," (Extension of Patent No. 5,716), patented February 16th, 1881.
- No. 12,374. Elonild Duplessis, St. Johns, Que., "Hay Press," patented February 18th, 1881.
- No. 12,375. John E. Edward, St. Paul, Minn., "Thresher and Separator," patented February 18th, 1881.
- No. 12,376. John Malsin, Jersey City, "Steam Vacuum Pump," patented February 18th, 1881.
- No. 12,377. Pulsometer Steam Pump Company (Assignee of Gardner F. Badger, East Orange, New Jersey, "Steam Vacuum Pump," patented February 18th, 1881.
- No. 12,378. William W. Gills, Chicago, Ill., "Sawing Machine," patented February 18th, 1881.
- No. 12,379. Thomas Linklater, Belleville, Ont., "Conductor and Hold-fast," patented February 18th, 1881.
- No. 12,380. Charles H. Stuart, of Chelsea, Mass., (Assignee of William T. Missinger, Boston, Mass.), "Reliable Injector," (Extension of Patent No. 5,709,) patented February 18th, 1881.
- No. 12,381. Joseph Nitsche and Theodore Grelleth, Vienna, Austria, "Fanner Fire Place," patented February 19th, 1881.
- No. 12,382. The Whitney Spring Co., of Poughkeepsie, (Assignee of William F. Whitney and Edward Storm, "Vehicle Spring," patented February 21st, 1881.
- No. 12,383. George Booth, Toronto, Ont., "Kettle," patented February 21st, 1881.
- No. 12,384. William B. McFail, of Vassair, Mich., "Horse Shoe," patented February 21st, 1881.
- No. 12,385. Nathan Thompson, of Brooklyn, N. Y., "Curved Wedge Fastener," patented February 21st, 1881.
- No. 12,386. Robert R. Miller, of Plantsville, Conn., "Apparatus for Dressing Axle Arm for Waggons," patented February 21st, 1881.
- No. 12,387. John Cross, Oakville, Ont., "Hoop Gauge," patented February 21st, 1881.
- No. 12,388. James W. Cuthbertson, Listowell, Ont., "Broom," patented February 21st, 1881.
- No. 12,389. Isaac Barton Hammond, of Deadwood, Dakota, "Ore Feeder for Stamp Mill," patented February 21st, 1881.
- No. 12,390. William A. Austin, of Gloucester, Ont., "Folding Baker," patented February 21st, 1881.
- No. 12,391. Richard P. Parsons, of Elsworth, Eng., "Cultivating Apparatus," patented February 21st, 1881.
- No. 12,392. Henderson Willard, Grand Rapids, Mich., "Acoustic Telephone," patented February 21st, 1881.
- No. 12,393. Edward P. Piper, of Toronto, Ont., "Refrigerator," (Extension of Patent No. 5,733), patented February 21st, 1881.
- No. 12,394. Ulric Beaupré, Montreal, "Boiler," patented February 21st, 1881.
- No. 12,395. Gideon Huntington, of Toronto, "Clothes Washer," patented February 21st, 1881.
- No. 12,396. Emory Barnes, Mount Pleasant, Mich., "Force Pump," patented February 21st, 1881.
- No. 12,397. Leonard Wells Simonds, Berlin, Ont., "Buttons," patented February 21st, 1881.
- No. 12,398. Albert F. R. Arnoit, Detroit, Mich., "Burglar Alarm," patented February 21st, 1881.
- No. 12,399. James A. Whelpley, Greenwich, N. B., and Valentine Graves, "Skates," February 21st, 1881.
- No. 12,400. Manuel Jaspas, of Walkerton, Ont., "Platform Tire Cooler," patented February 21st, 1880.
- No. 12,401. Oliver Herbert, Oswego, Ill., "Tongue Supporter for Vehicles," patented February 21st, 1881.
- No. 12,402. Samuel Chen Bogart and Joseph H. Milton, Chatham, Ont., "Circular Proof Stuff," patented February 24th, 1881.
- No. 12,403. Isaac Kaufmann, Montreal "Cigar," patented February 24th, 1881.
- No. 12,404. Jeremy P. Holly, Farmington, Maine, "Plough and Colter," patented February 24th, 1881.
- No. 12,405. Francis C. Taylor, New York, "Hatters Iron," patented February 24th, 1881.
- No. 12,406. Newton Brown and Herman Hicks, Paradise, N.S., "Chair," patented February 24th, 1881.
- No. 12,407. Edwin J. Houston, Philadelphia, Pa., and Elibu Thompson, "Electric Lamp," patented February 24th, 1881.
- No. 12,408. The Corrugated Fastening Co., (Assignee of Albion Knowlton, Boston, Mass., "Nailing Machine," patented February 24th, 1881.
- No. 12,409. Israel R. Blumenberg, Washington, D. C., "Condenser," patented February 24th, 1881.
- No. 12,410. Stephen L. Godale, of Suco, York, "Fish Extract" (Extension of Patent No. 5,764,) patented February 24th, 1881.
- No. 12,411. L. G. Bertram, Brooklyn, (Assignee of William Bell and Moody Sloane, "Process of Refining Paraffine Wax," patented February 26th, 1881.
- No. 12,412. Edward Magruder Strange, of Baltimore, Maryland, "Steam and Air Engine," patented February 24th, 1881.
- No. 12,413. William H. Sproston, Birmingham, England, "Button Fastener," patented February 26th, 1881.
- No. 12,414. Findlay McHellar, of Tiverton, Ont., "Wooden Sole," patented February 26th, 1881.
- No. 12,415. John T. Fogg, of Garland, Me., "Egg Carrier," patented February 26th, 1881.
- No. 12,416. Joseph V. Morton, of Winchester, Kentucky, "Sewing Machine Motors," patented February 26th, 1881.
- No. 12,417. Charles Barbow, of Cookstine, Que., "Fire Escape," patented February 26th, 1881.
- No. 12,418. John B. Ball, of Putney, England, "Smoke Consumer," patented February 26th, 1881.
- No. 12,419. Albert B. Hill, of Boston, "Nutmeg Grater," patented February 26th, 1881.
- No. 12,420. Thomas Cowan and John Ballantine, of Galt, "Moulding Machines," patented February 26th, 1881.
- No. 12,421. John Greenwood, of Rochester, N. Y., "Heading Packer," patented February 26th, 1881.
- No. 12,422. Thurston Gordon Hall and George H. Van Vleck, of Buffalo, N. Y., "Process and Apparatus for Extracting Metals from Ores," patented February 26th, 1881.
- No. 12,423. Thurston Gordon Hall, and George H. Van Vleck, of Buffalo, N. Y., "Process and Apparatus for Extracting Metals from Ores," patented February 26th, 1881.
- No. 12,424. David E. Taylor, of Charlton, Mass., "Clothes Washer," patented February 26th, 1881.
- No. 12,425. Ezra Butler Eddy, (Assignee of Nathan Butler, of Hull, Que.), "Match Dipping Machine," patented February 26th, 1881.
- No. 12,426. Walter Gillespie and James G. T. Cleghorn, Montreal, Que., "Panellled Furnace Grate," patented February 26th, 1881.
- No. 12,427. Alexander Anderson, of London, and Walter Arnold, of Toronto, "Odorless Broiler and Fryer," patented February 26th, 1881.
- No. 12,428. Evan F. Cash, Bellané, Ohio, and Alfred L. Baron and David Rankin, "Lantern," patented February 28th, 1881.
- No. 12,429. John Dewar, (Assignee of George Bailey,) Ottawa, Ont., "Car Seal Lock," patented February 28th, 1881.
- No. 12,430. John W. Stanton and Alfred J. Wolfe, New York, N. Y., "Cabinet Bedstead," patented February 28th, 1881.
- No. 12,431. Joseph Apsey, Surry, England, "Apparatus for Driving Bogie Axles," patented February 28th, 1881.
- No. 12,432. James Edward Vansant, Cincinnati, Ohio, "Shower Bath Apparatus," patented February 28th, 1881.
- No. 12,433. Zaddock Huggins, Alleyan, Mich., "Hub Attaching Device," patented February 28th, 1881.
- No. 12,434. Pierre Eymard Jay, of New York, "Pumps and Motive Power for Operating Same," patented March 1st, 1881.
- No. 12,435. David Roberge and David Roberge, the younger, "Toe Weight," patented March 1st, 1881.
- No. 12,436. Solomon Vermilyea and Harma M. Vermilyea, Belleville, Ont., "Self Fitting Corset," patented March 1st, 1881.
- No. 12,437. Joseph J. Gill, of Steubenville, Ohio, "Double Arch Gas Burner," patented March 1st, 1881.
- No. 12,438. William Critch, of Toronto, Ont., "Hinged Frame Spring Bed Bottom," (Extension of Patent No. 5,741,) patented March 1st, 1881.
- No. 12,439. Isaiah Merriman Clark, Coldwater, Mich., "Paper Veneers," patented March 1st, 1881.
- No. 12,440. Thomas Doherty, Waterford, Ont., "Thrashing Machine," patented March 1st, 1881.
- No. 12,441. John G. Cherry, Cedar Rapids, Iowa, "Milk Pass," patented March 1st, 1881.
- No. 12,442. John L. Sturdy, of Goderich, Ont., "Snow Plough," patented March 1st, 1881.
- No. 12,443. Richard Smith, of Sherbrooke, Que., "Vessel Propeller," patented March 1st, 1881.
- No. 12,444. Richard Jellyman and George N. W. Rice, Montreal, "Collar Machine," (Extension of Patent No. 5,748), patented March 2nd, 1881.
- No. 12,445. George W. Simmonds, Boston, (Assignee of Thomas L. Howard, of Somerville, Mass.), "Overseaming Sewing Machine," (Extension of Patent No. 5,751), patented March 2nd, 1881.
- No. 12,446. Robert H. Ramsay and George N. Scarlett, Cobourg, Ont., "Car Truck Shifting Apparatus," patented March 3rd, 1881.
- No. 12,447. Louis P. Bouvin and John F. Ellis, Toronto, "Envelope Machine," March 4th, 1881.

INDEX OF INVENTIONS.

Anvil and vice, J. W. Cheney.....	12,198
Bag fastening, mail, J. H. Bartlett.....	12,213
Bag machines, paper, W. C. Cross.....	12,172 12,176
Baling tie, wire, The Washburn and Moen Manufacturing Co.....	12,220 12,221
Blind, window, J. M. VanHorn.....	12,180
Board, wash, T. R. Fuller.....	12,202
Boiler feeder, T. Northey.....	12,203
Boot, horse, A. Randall.....	12,226
Box and valise, hat, J. M. VanHorn.....	12,179
Box making machine, H. W. Hutchins.....	12,204
Brake, A. Johnson et al.....	12,219
Brick and tile machine, G. S. Tiffany.....	12,207
Brush handle making machine, J. L. Whiting.....	12,206
" making apparatus, J. L. Whiting.....	12,205
Bucket, grappling, F. G. Johnson.....	12,210
Buckle, clamp, V. A. Coleman.....	12,193
Buggy tops, E. N. Heney.....	12,153
Car stock, J. R. McPherson.....	12,159
Castor, furniture, M. Fiset.....	12,223
Celluloid, decorating, E. A. Bacon et al.....	12,162
Chest, meal, S. W. Brooke.....	12,227
Closet, Water, A. G. Alexander.....	12,199
Decorating celluloid, R. A. Bacon et al.....	12,162
Drill, grain, J. O. and W. S. Wisner.....	12,211
Elevator stops, G. W. Fitts et al.....	12,222
Engine, steam, J. N. Lauder et al.....	12,168
Fabrics, cutting pile, R. H. Plass et al.....	12,165
Fastener, blind, M. Fiset.....	12,224
Feeder, boiler, T. Northey.....	12,203
Fertilizers, F. C. Cook.....	12,178
Governor, steam engine, G. F. Pottle.....	12,195
Grate, furnace, C. Hill.....	12,217
Handle making machine, brush, J. L. Whiting.....	12,206
Harrow, spring tooth, J. W. Fenwick.....	12,173
" wheel, F. Bramer.....	12,185
Holdback, vehicle, J. Spurr.....	12,194
Hoop machines, C. M. Clancy.....	12,218
Hub, vehicle, F. Culham.....	12,162
Injector, steam boiler, L. E. Hogue et al.....	12,167
" engine, E. Davies.....	12,228
Kettles, F. Winslow.....	12,177
Knife grinding, planing, C. J. LeRoy.....	12,183
Knot, door, W. H. Gonne et al.....	12,166
Lock, sash, J. R. Yeagley.....	12,174
Nail machine, horseshoe, L. W. Whipple.....	12,200
Nut, lock, J. W. Labaree.....	12,181
Overalls, W. Carter.....	12,171
Packing, piston, C. C. Jerome.....	12,157
" T. Tripp.....	12,215
Pantographs, J. J. F. Schnoor.....	12,196
Paper process, J. Manning.....	12,169
" pulp, J. T. Averill et al.....	12,161
Plough, M. McLean.....	12,164
Potato-planter, B. J. O'Neill.....	12,216
Printing machines, T. B. Dooley.....	12,182
Pump, wooden, D. Pless.....	12,212
Reel, fisherman's, F. A. Loomis.....	12,190
Sash lock, J. B. Yeagley.....	12,174
Sewing machine, J. Keith.....	12,208
" machines, wire, The Wagner Wire Sewing Machine Co.....	12,170
Skates, C. Brewster.....	12,154
" P. Rodier.....	12,201
Skylights, J. L. Oakley.....	12,189
Spring, railway, R. Vose.....	12,155
Stops, elevator, G. W. Fitts et al.....	12,222
Straw-cutters, A. Reynolds et al.....	12,152
Tables, W. Wright et al.....	12,192
Telegraphy, electric, dynamo, O. Lugo.....	12,214
Tie, wire baling, The Washburn and Moen Manufacturing Co.....	12,220 12,221
Tile and brick machine, G. S. Tiffany.....	12,207
Tops, buggy, E. M. Heney.....	12,188
" carriage, D. Conboy.....	12,191
Trap, mouse and rat, W. Hull.....	12,197
Truck, stove, M. B. Schenck.....	12,229
Valise and hat box, J. M. VanHorn.....	12,179
Vice and anvil, J. W. Cheney.....	12,198
Washboard, T. R. Fuller.....	12,202
Washer, clothes, S. Rae.....	12,209
Washing machines, R. Campbell.....	12,158
Weather strips, N. Smith et al.....	12,175
Wringer, clothes, C. J. Shirreff.....	12,225
Yoke, neck, J. L. Batt.....	12,156

INDEX TO PATENTEES.

Alexander, A. G., water closets.....	12,199
Atwood, J. B., lock nut.....	12,181
" " et al, brake.....	12,219
Averill, J. T., et al, paper pulp.....	12,161
Bacon, R. A., et al, decorating celluloid.....	12,162
Bartlett, J. H., et al, mail bag fastening.....	12,213
Batt, J. L., neck yoke.....	12,156
Blackman, F. H., door knob.....	12,166
Bramer, F., wheel harrow.....	12,185
Brewster, C., skates.....	12,154
Brooke, S. W., meal chest.....	12,227
Campbell, R., washing machines.....	12,158
Carpenter, H. M., et al, paper pulp.....	12,161
Carter, W., overalls.....	12,171
Chapin, M. H., et al, cutting pile and fabrics.....	12,165
Cheney, J. W., anvil and vice.....	12,198
Clancy, C. M., hoop machines.....	12,218
Coleman, V. A., clamp buckle.....	12,193
Conboy, D., carriage top.....	12,191
Cook, F. C., fertilizers.....	12,178
Cross, W. C., paper bag machines.....	12,172 12,176
Culham, F., vehicle hub.....	12,162
Davies, E., steam engine injector.....	12,228
Dederick, P. K., wire baling tie.....	12,220
Dooley, T. B., printing machines.....	12,182
Duff, E. J. and R. P., et al, washboard.....	12,202
Fenwick, J. W., spring tooth harrow.....	12,173
Fiset, M., blind fastener.....	12,224
" furniture castor.....	12,223
Fitts, G. W., et al, elevator stops.....	12,222
Fuller, T. R., washboard.....	12,202
Gonne, W. H., et al, door knob.....	12,166
Griffin, L. F., et al, elevator stops.....	12,222
Hart, N., et al, decorating celluloid.....	12,163
Heney, E. N., buggy tops.....	12,153
Hidden, M., et al, door knob.....	12,166
Hill, C., furnace grates.....	12,217
Hogue, L. E., et al, steam boiler injector.....	12,167
Hull, W., mouse and rat trap.....	12,197
Hutchins, H. W., box making machine.....	12,204
Johnson, A., et al, brake.....	12,219
Johnson, F. G., automatic grappling bucket.....	12,210
Jerome, C. C., piston packing.....	12,157
Keith, J., sewing machine.....	12,208
Kitzmiller, E. A., et al, washboard.....	12,202
Knowles, C. W., et al, paper process.....	12,169
Labaree, J. W., nut lock.....	12,181
Lauder, J. N., et al, steam engine.....	12,168
Le Roy, C. J., planing knife grinding.....	12,183
Loomis, F. A., fisherman's reel.....	12,190
Lugo, O., dynamo-electric telegraphy.....	12,214
McGrath, T. F., et al, stock cars.....	12,159
McLean, M., plough.....	12,164
McPherson, J. R., stock cars.....	12,159
Macdonald, W. E., et al, steam boiler injector.....	12,167
MacIntyre, P. D., et al, mail bag fastening.....	12,213
Manning, J., et al, paper process.....	12,169
Northey, T., boiler feeder.....	12,203
Oakley, J. L., skylight.....	12,189
Oliver, G. W., et al, door knob.....	12,166
O'Neill, B. J., potato planter.....	12,216
Plass, R. H., et al, cutting pile fabrics.....	12,165
Pless, D., wooden pump.....	12,212
Pottle, G. F., steam engine governor.....	12,195
Rae, S., clothes washer.....	12,209
Randall, A., horse boot.....	12,226
Reynolds, A., et al, straw cutters.....	12,152
Richards, J., et al, ".....	12,152
Rodier, P., skates.....	12,201
Sager, J. H., et al, tables.....	12,192
Saunders, T. P., et al, weather strips.....	12,175
Schenck, M. B., stove truck.....	12,229
Schnoor, J. J. F., pantographs.....	12,196
Shirreff, C. J., blind fastener.....	12,225
Sinclair, A. O., et al, brake.....	12,219
Smith, N., et al, weather strips.....	12,175
Spurr, J., vehicle holdbacks.....	12,194
Stevens, N. P., et al, steam engine.....	12,168
Stevenson, A. N., et al, stock cars.....	12,160
Tiffany, G. S., brick and tile machine.....	12,207
Todd, W., washboard.....	12,202
Trip, T., piston packing.....	12,215
Van Horn, J. M., hat box and valise.....	12,179
" " " window blind.....	12,180
Vose, R., railway spring.....	12,155

Wagner, J., Jr., and L., wire sewing machines.....	12,170	Whiting, J. L., brush apparatus.....	12,205
“ Wire Sewing Machine Co., The, wire sewing machines.....	12,170	“ “ “ handle machine.....	12,206
Washburn and Moeu' Manufacturing Co., The, wire baling tie.....	12,220	Winslow, F., kettles.....	12,177
Whipple, L. W., horse shoe nail machine.....	12,200	Wisner, J. O. and W. L., grain drill	12,211
		Wright, W., et al., tables.....	12,192
		Yeagley, J. B., sash lock.....	12,174

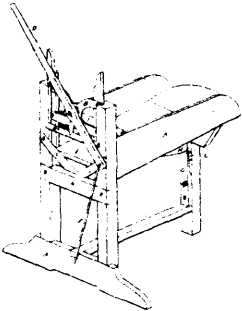
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

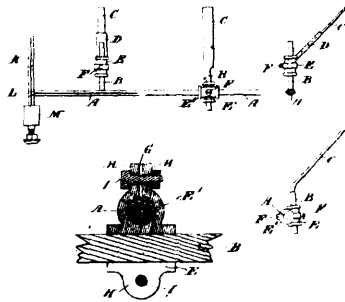
Vol. IX.

FEBRUARY, 1881.

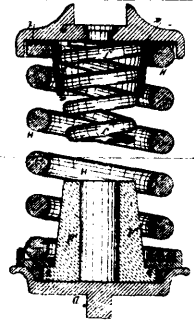
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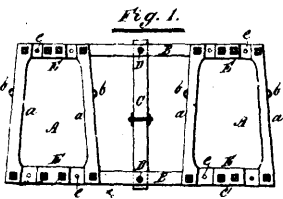
12152 Reynolds's Improvements on Straw-cutters.



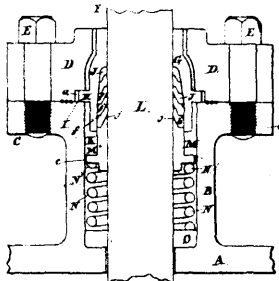
12153 Heuey's Improvements in Buggy Tops.



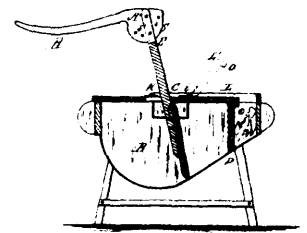
12155 Vose's Improvements in Railway Springs.



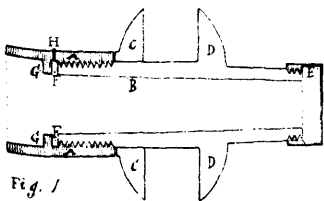
12156 Babb's Improvements in Neck Yokes.



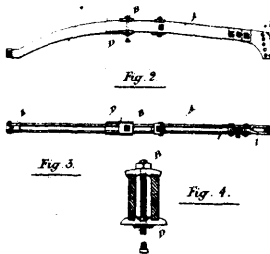
12157 Jerome's Improvements on Piston Packings.



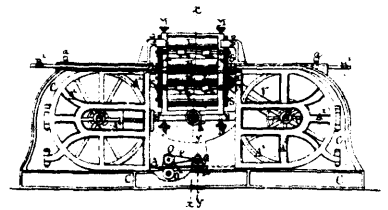
12158 Campbell's Improvements on Washing Machines.



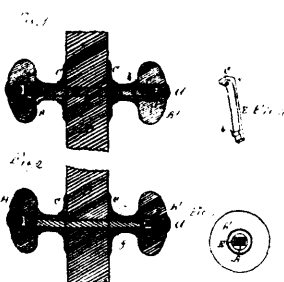
12162 Culham's Improvements on Vehicle Hubs.



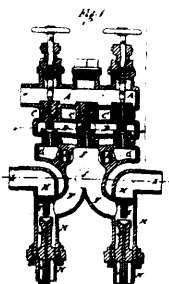
12164 McLean's Improvements on Ploughs.



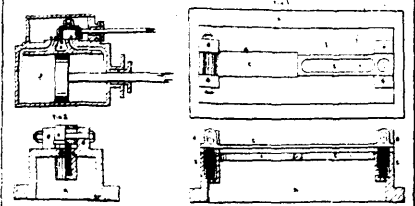
12165 Plass's Improvements on Machinery for Cutting Pile Fabrics.



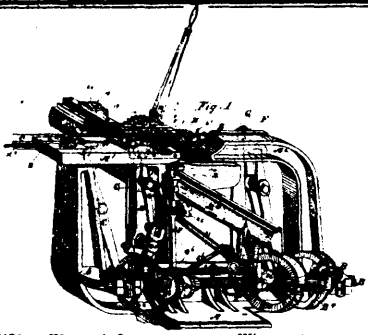
12166 Goane's Improvements on Door Knobs.



12167 Hogue's Improvements on Steam Boiler Injectors.



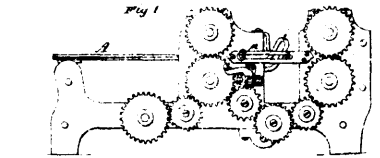
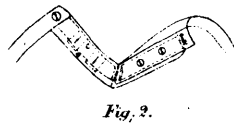
12168 Lauder & Stevens's Improvements on Steam Engines.



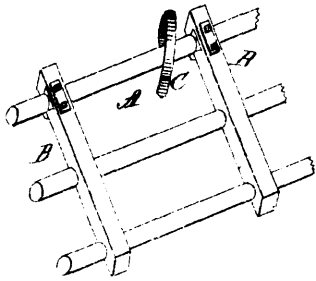
12170 Wagner's Improvements on Wire Sewing Machines.



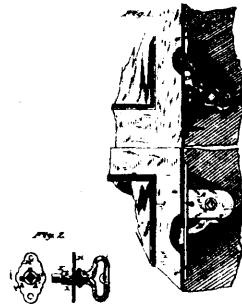
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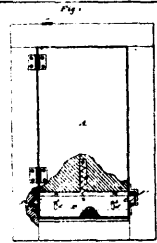
12172 Cross's Improvements in Paper Bag Machines.



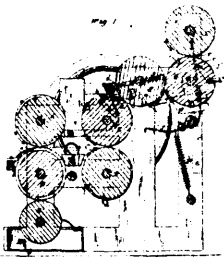
12173 Fenwick's Improvements in Spring Tooth Harrows.



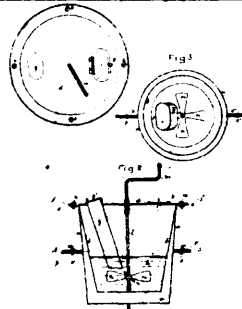
12174 Yeagley's Improvements in Sash Locks.



12175 Smith's Improvements on Weather Strips.



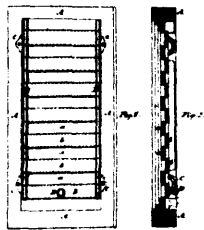
12176 Stocking's Improvements in Paper Bag Machines.



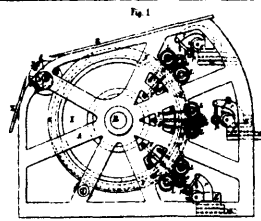
12177 Winslow's Improvements on Kettles.



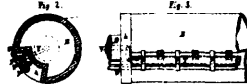
12179 VanHorn's Improvements in Hat Boxes and Valises.



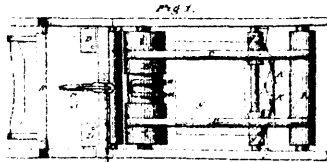
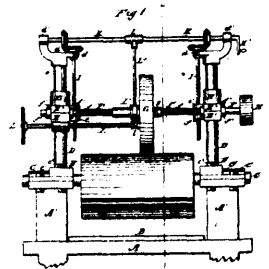
12180 VanHorn's Improvements on Window Blinds.



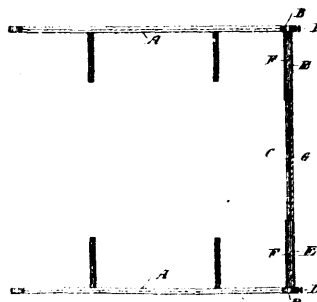
12182 Dooley's Improvements on Printing Machines.



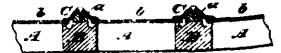
12183 LeRoy's Improvements on Attachment for Grinding Knives of Wood Planing Machines.



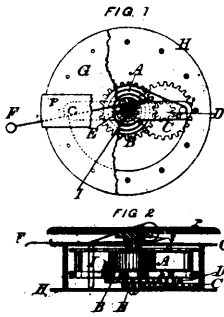
12187 Cross's Improvements in Paper Bag Machines.



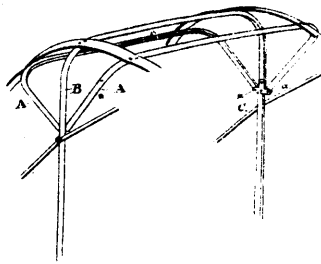
12188 Hesev's Improvements in Buggy Tops.



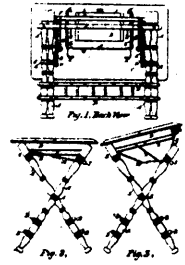
12189 Oakley's Improvements on Skylights.



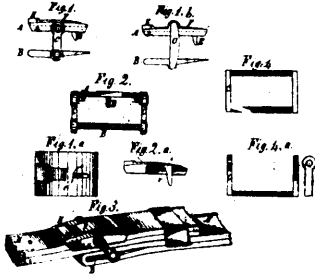
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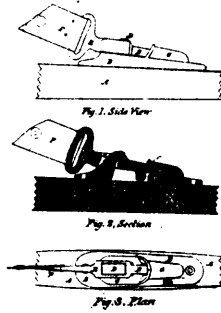
12191 Conboy's Improvements in Carriage Tops.



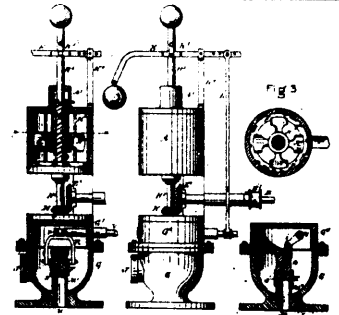
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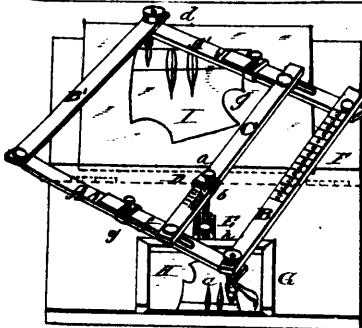
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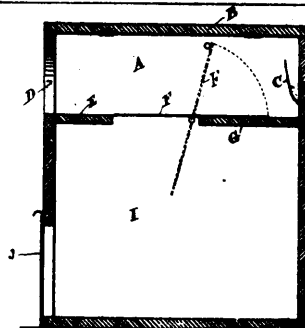
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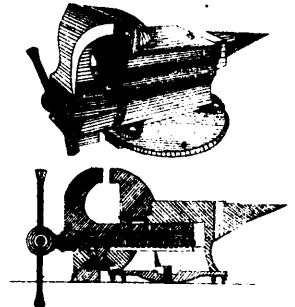
12195 Fottle's Improvements on Governors for Steam Engines and other Motors.



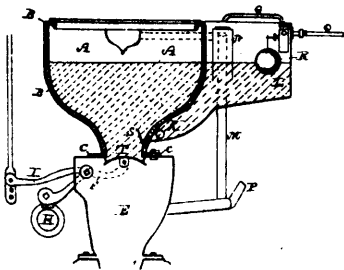
12196 Schnoor's Improvements on Pantographs.



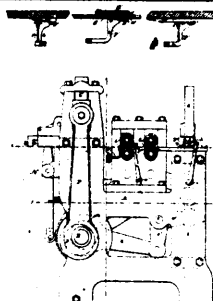
12197 Hull's Self-setting Mouse and Rat-trap.



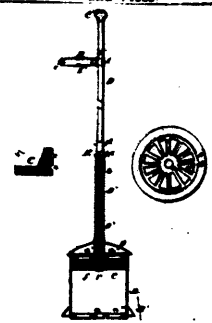
12198 Cheaney's Improvements on Combined Anvils and Vices



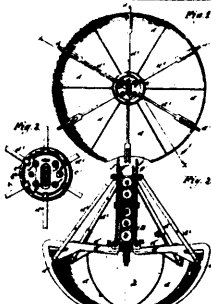
12199 Alexander's Improvements in Water Closets.



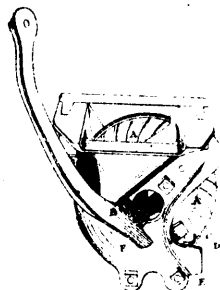
12200 Whipple's Improvements in Horse Shoe Nail Machines.



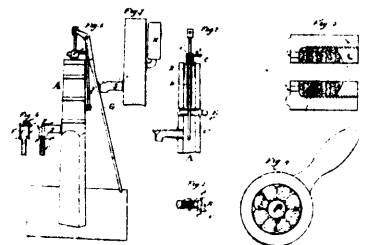
12209 Rae's Improvements in Clothes Washers.



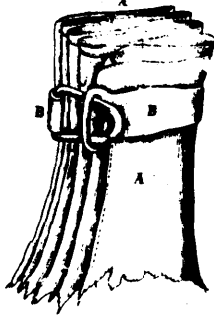
12210 Johnson's Improvements on Automatic Grappling Buckets.



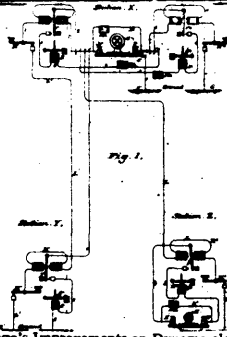
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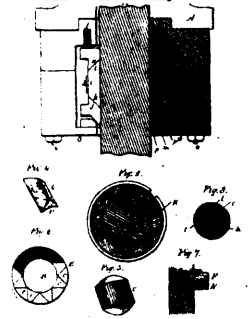
12212 Plews's Improvements on Wooden Pumps.



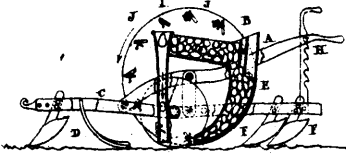
12213 Bartlett's Improvements in Fastening Mail Bags.



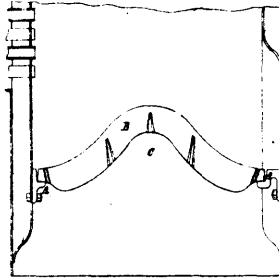
12214 Lugo's Improvements on Dynamo-electric Telegraphy.



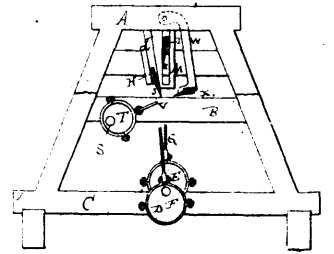
12215 Tripp's Improvements on Piston Packings.



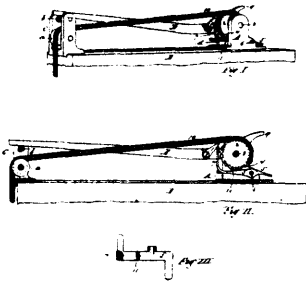
12216 O'Neill's Improvements in Potato-planters.



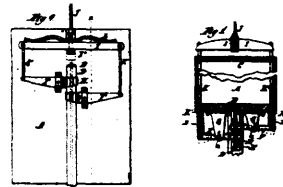
12217 Hill's Improvements in Furnace Grates.



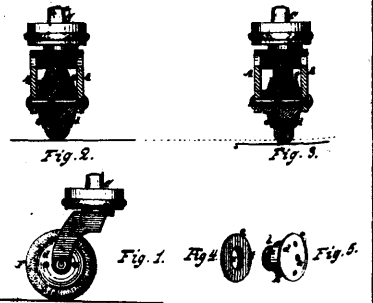
12218 Clancy's Improvements on Hoop Machines.



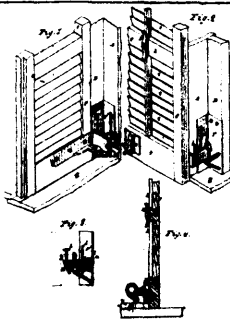
12219 Johnson's Improvements on Brakes.



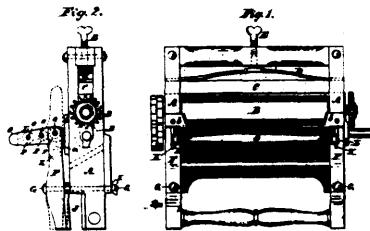
12222 Fitts & Griffin's Improvements in Elevator Stops.



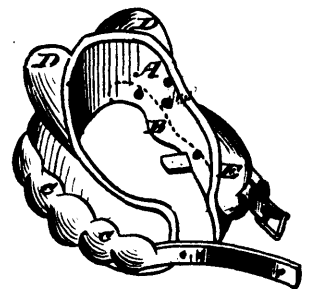
12223 Fiset's Improvements on Furniture Castors.



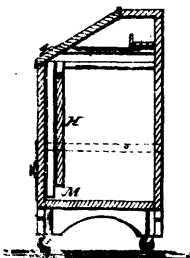
12224 Fiset's Improvements on Blind Fasteners.



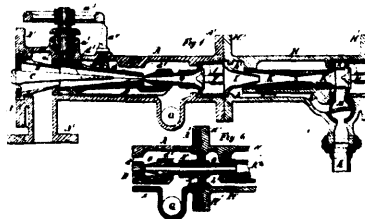
12225 Shirreff's Improvements on Clothes Wringers.



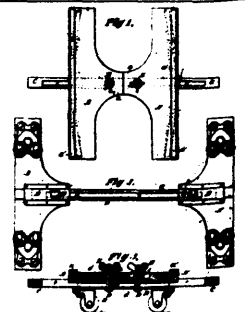
12226 Randall's Improvements on Horse Boots.



12227 Brooke's Improvements on Meal Chests.



12228 Davies's Improvements on Steam Engine Injectors.



12229 Schenck's Improvements on Store Trucks.