

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

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

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

Cover title missing/
Le titre de couverture manque

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

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

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

Showthrough/
Transparence

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

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

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

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

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/ Various pagings.
Commentaires supplémentaires:

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

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The Canadian Patent Office RECORD




Vol. X.—No. 6. JUNE, 1882. Price in Canada \$2.00 per An. United States - \$2.50

CONTENTS.

INVENTIONS PATENTED.....	175
ILLUSTRATIONS.....	293
INDEX OF INVENTIONS.....	CCIII
INDEX OF PATENTEES.....	CCIV

INVENTIONS PATENTED.

No. 14,708. Improvements on Heaters. (*Perfectionnements aux appareils de cuisson.*)
 Elijah E. Spencer, St. Armand East, (Assignee of William A. Morrison, Freligsburg.) Que., 1st May, 1882; (Extension of Patent No. 7426.)

No. 14,709. Improvements on Fanning Mills. (*Perfectionnements aux tarares-cribleurs.*)
 Ransom J. Horton, Massena, N.Y., U.S., 1st May, 1882; (Extension of Patent No. 7403.)

No. 14,710. Improvements in Preserving Chambers. (*Perfectionnements aux chambres de conservation.*)
 Charles Boss, (Assignee of Thomas Armstrong, Jr.,) Bathurst, N.B., 1st May, 1882; (Extension of Patent No. 7430.)

No. 14,711. Improvements on Gathering Machines. (*Perfectionnements aux engrubeuses.*)
 The Toronto Reaper and Mower Co., Toronto, Ont., (Assignee of William N. Whiteley, Springfield, Mass., U.S.) 1st May, 1882; for 15 years.
Claim.—1st. In an independent gathering and binding machine, an elevator arranged to lift the grain from the ground and discharge it upon a grain receptacle, in combination with deflectors connected to, and operating binding mechanism in such manner that the instant sufficient grain has accumulated on the receptacle to form a proper sized sheaf, the pressure thereof throws the binding mechanism into action. 2nd. In an independent gathering and binding machine provided with mechanism for mechanically regulating the size of the gavel, an independent divider arm, arranged to divide into proper sized sheaves any accumulation of grain upon the receptacle. 3rd. In an independent gathering and binding machine, a gathering cylinder located in front of the elevator, and mounted upon its own wheels. 4th. The pivoted arms M supporting the gathering cylinder shaft L and provided with T-shaped ends m extending behind the elevator shaft K, in combination with the pin n and arm N arranged to form a flexible joint between the gathering cylinder and elevator. 5th. The foot lever U pivoted upon the main frame D and connected to the pole S by the rod W, in combination with the arm P fastened to the frame D and flexibly connected to the gathering cylinder by the rods Q, and arms M. 6th. In an independent gathering and binding machine, a lever pivoted upon the main frame and fulcrumed on the pole, for the purpose of raising the front of the machine. 7th. An elevator operated by the motion of the supporting wheels, and flexibly connected to the main frame of the machine, to enable it to independently adjust itself to the undulations of the ground. 8th. The elevator shaft H passing through bearings in the frame J and supported by the bracket L, in combination with the flexible tumbling shaft G, pinion F and main driving gear B. 9th. An elevator provided with folding rake teeth arranged to turn outward at the bottom, to gather the grain from off the ground and to fold back, clearing themselves of the grain at the point where it is discharged from the elevator. 10th. A double tree T adjustably attached to the pole S, in combination with the draft rods a, arranged to draw the machine without draft on the pole. 11th. An independent float X provided with curved ends Z, extending around the gathering cylinder shaft L, in combination with the pivoted arms Y, connecting the float X adjustably to the frame J. 12th. A main driving gear B,

in combination with the pinions CF, connected to the binding and elevating mechanism by their respective flexible tumbling shafts EG.

No. 14,712. Improvements on Feed Mechanism for Circular Sawing Machines. (*Perfectionnements aux appareils d'alimentation des scieries à scies circulaires.*)
 Joseph H. Hermance, Toledo, Ohio, U.S., 1st May, 1882; for 5 years.

Claim.—1st. The combination of the frame d hinged on the shaft d₂, the pulley c₁ fixed on the shaft d₂, concentric with the centre of motion of the frame d, the feed roll c₂ journaled in the outer or swinging end of the frame, the pulley c₃ journaled in and partaking of the motion of the frame and connected by suitable gearing to the feed roll, the set screw f fixed adjustably in the outer or swinging end of said frame, and the belt connecting the pulleys c₁ c₃. 2nd. In combination with the feed roll carrying frame d having one end hinged to the table a, the set screw f held in the frame d, and the guide g fixed on the table and arranged to direct the vertical movement of the said feed roll carrying frame.

No. 14,713. Improvements on Thrashers and Separators. (*Perfectionnements aux batteurs-separateurs.*)
 John Fisher, jr., Woodstock, N.B., 1st May, 1882; for 5 years.

Claim.—1st. The combination of a perforated, serrated and reciprocating straw carrier floor D the reciprocating grain pan E with separate floor piece c reciprocating in a contrary direction, the separating shoe G and the crank pitman and rocking shaft arrangement (or equivalent) to produce and impart to the said straw carrier, grain pan, separate floor piece, and the separator shoe, the necessary reciprocating motion. 2nd. The combination of a straw channel B, the impeding rake B₂, the screen B₁, the grain pan E and hangers and swing links F F₁. 3rd. The combination of the grain pans and the crank pitman and rocking shaft arrangement (or equivalent) to produce the double reciprocating movement. 4th. The construction of the grain pan E, carrying the straw floor D and having a separate floor piece c reciprocating contrary and endwise, and forming a slot between their two meeting ends, for the delivery of the grain upon the grain table.

No. 14,714. Improvements on Process and Apparatus for Coating Wire. (*Perfectionnements aux procédés et aux appareils pour enduire le fil métallique.*)
 Luther L. Smith, Ansonia, Ct., U.S., 1st May, 1882; for 5 years.

Claim.—1st. The method of covering with a deposit of metal a coil of wire by causing it to revolve, so that the wire will enter continuously at one place an electrolytic solution forming part of an electric circuit of which the wire is an electrode, travel through it in a spiral course and pass out at another place receiving the deposit of metal in its course. 2nd. In apparatus for effecting the uniform electro deposition of metal upon coiled wire, a tank of any desired length for containing the electrolytic solution, in which the several convolutions of the coil of wire are partially or wholly submerged, in combination with a horizontal roller upon which the several convolutions of the coil are hung, and guiding devices for separating the several convolutions of the coil from each other, and mechanism for causing the rotation of the roller, whereby the wire may be fed progressively through the solution in a helical path. 3rd. The tank A adapted to contain an electrolytic solution provided with the anodes B, and the guiding racks C, in combination with a horizontal roller E. 4th. The tank A adapted to contain an electrolytic solution, in combination with the roller E projecting outward from the tank A at both ends, and mechanism for effecting the rotation of the roller E.

No. 14,715. Improvements in Spike Machines. (*Perfectionnements aux machines à clous barbelés.*)
 Hervey W. Fowler, Chicago, Ill., U.S., 1st May, 1882; for 5 years.

Claim.—1st. The method of manufacturing spikes, by the contin-

uous rolling of spikes from point to head, from a bar or rod of metal which is equal to, or greater in sectional area than the horizontal sectional area of the head of the finished spike and capable of affording in the aggregate double, or more than double its length in finished spikes. 2nd. The combination of a spike roll provided with dies for shaping and cutting the points of the spikes, a cooperative roll provided with dies for shaping and cutting the points and deeply recessed dies for forming and laterally developing the heads, and for forming the shank and gearing which drives said rolls, with the point cutting dies in advance of the head forming dies, for rolling each spike from point to head. 3rd. The combination, with the two rolls, of the series of practically solid dies for forming spikes, and the automatic plungers for forcing the finished spikes from the dies.

No. 14,716. Improvements on Printing Presses. (*Perfectionnements aux presses d'imprimerie.*)

The Gilman Vertical Press Company, of the State of New Hampshire, (Assignee of Francis H. Richards, Springfield, Mass.) U.S., 1st May, 1882; for 15 years.

Claim.—1st. The combination, in a printing press, of the bed B provided with the slotted posts *a a*, the platen A provided with its shaft *c* and the connecting rod *e*, secured pivotally to the platen and to the frame of the machine, and appliances for moving the platen vertically between said posts. 2nd. The combination, with the bed B, of the platen adapted to be moved vertically against *f*, the connecting rod *r* attached to the platen, and the eccentric bolt *g* securing said rod to the frame of the machine. 3rd. The combination, with the platen provided with the shaft *e* and with appliances for guiding it in its vertical movements, of the connecting rods *d d*, and the shaft *h* provided with arms *d d*. 4th. The combination, with the connecting rods *d d* of adjustable length, connected to the platen shaft, of the shaft provided with arms *d d* and with the segment *f*, of the treadle connected with said segment and of the springs *h* adjustably connected with the frame of the machine. 5th. The combination, with the vertical ink table shaft N, of the ratchet wheel K secured thereto, the pawl lever *j*, spring *t* and shaft *h*. 6th. The combination, with the ink roller frame carrier *Z*, of the connecting rod *l* pivotally attached to the latter and to the frame of the machine, shaft *s*, arm *r* and belt crank lever *o*, connected with shaft *h*. 7th. The tympan finger shaft 14 having the lever 16 attached thereto, in combination with the platen and with the shaft *s*. 8th. In combination, the platen A, the tympan finger shaft 14, the rod 17 provided with the adjustable nuts, and the spring 19. 9th. In combination, the ink roller frame carrier *Z* pivotally attached to the frame of the machine, the ink roller frame *z* carrying rollers *h*, and appliances for swinging said carrier *Z* between the posts *a a*. 10th. The paper tables 24 pivoted to one side of their centres, in combination with the brackets 23 and the rods 22. 11th. In a printing press, the combination of a stationary horizontal bed and platen arranged above the same, and appliances for reciprocating the platen vertically, and turning it from a horizontal to a vertical position, and back. 12th. In a printing press, the combination, with a horizontal stationary bed, horizontal inking plate and rollers reciprocating across the two, of a platen arranged above the bed and appliances whereby the same is reciprocated vertically, parallel to the bed, and turned to a vertical position to receive the sheet and back. 13th. The combination of the horizontal stationary type bed, platen constructed to receive and hold the sheets to be printed, appliances for guiding and turning the platen above the bed, and a treadle connected to the platen to operate the same.

No. 14,717. Improvements on Dry Pulverizers. (*Perfectionnements aux triturateurs par la voie sèche.*)

Stephen P. M. Tasker, Philadelphia, Pa., U.S., 4th May, 1882; for 5 years.

Claim.—1st. In a pulverizing machine, in combination with a tight casing enclosing revolving disks and a ball, and within which material is pulverized, an exhausting device adapted to suck the pulverized material from out of the casing. 2nd. In combination with a tight enclosing casing provided with means for pulverizing metalliferous ores, or other substances, an exhaust stack opening therein on the one hand, and enclosed at its discharging extremity by a screen and an air exhausting or forcing apparatus. 3rd. In combination with the exhausting stack and screen enclosing the discharging orifice thereof, the receiving chamber provided with a chute or kindred discharging contrivance. 4th. In combination with a pulverizing machine of the class recited, a feeding hopper and hopper valve. 5th. In combination with a primary hopper, a conical valve and means for alternately lifting and dropping, and revolving said conical valve.

No. 14,718. Improvements on Mechanical Toys. (*Perfectionnements aux jouets mécaniques.*)

William A. Webber, Medford, Mass., U.S., 4th May, 1882; for 15 years.

Claim.—1st. A toy constructed in imitation of a living being, and provided interiorly with mechanically operated appliances adapted to produce musical sounds in a series of notes. 2nd. A toy constructed in imitation of a living being, in combination with appliances arranged within the toy and adapted to produce musical sounds in a series of notes, and mechanical means operative from the exterior of the toy to move said musical appliances. 3rd. A mechanical toy made in imitation of a living being and having placed within it, bellows or other wind mechanism, a series of reeds and reed chambers or race way for a perforated music sheet, air passages leading from the race-way to the reeds, and mechanism for holding a perforated music sheet in close contact with and feeding it along the race-way and all constructed in relation to each other, and to the outside of the toy to be operated as described.

No. 14,719. Improvements on Planers' Chucks. (*Perfectionnements aux mandrins des raboteuses.*)

John H. Greenwood, Logan, Ohio, U.S., 4th May, 1882; for 5 years.

Claim.—1st. In a metal planer, the combination of a sliding bed K, rocking chuck I, tool O, head J, bar CD, arc E and clamp screw U. 2nd. A curve cutting mechanism operated by the horizontal longitudinal movement of the reciprocating bed, in combination with the mechanism for producing the rocking movement of the chuck. 3rd. The combination, with a rocking chuck, of the pivoted slide head J, the adjustable guide bar C D and graduated arc E, for the purpose of enabling the machine to plane convex or concave curves of any desired radius, and also straight work when necessary. 4th. The combination, with the frame of the rocking chuck, of one or more slotted graduated arcs provided with clamping mechanism to set the chuck at any desired angle to plane inclined work. 5th. The combination, in a metal planer, of a fixed tool, a bed plate having rectilinear motion in a horizontal plane, and a chuck having rocking motion in a vertical line. 6th. The combination of a hinged work holder rocking in a longitudinal vertical plane, with a horizontal and longitudinally reciprocating bed, a cutting tool provided with horizontal transverse and vertical adjustments, and guiding and adjusting mechanism for controlling the position and movement of the work holder relatively to the planing tool. 7th. The combination of the sliding bed K, chuck frame M, chuck I, cross head J, guide bar D and slotted arc E. 8th. The combination of the rocking chuck I, cross head J and adjustable guide bar D. 9th. The combination of the frame N, slotted arc E, guide bar D and the bolts and nuts for securing the guide bar in position. 10th. The guide bar D, chuck I and cross head J.

No. 14,720. Improvements on Washing Machines. (*Perfectionnements aux machines à laver.*)

James Dougherty, Mount Pleasant, Iowa, U.S., 4th May, 1882; for 5 years.

Claim.—1st. The rubber presser I provided on its underside or surface with a series of recesses or air chambers. 2nd. In combination with a wash box having a double inclined or slightly curved bottom, provided on its upper surface with rubbing surfaces, the rubber I and turner K for rubbing and partially squeezing the clothes, and giving the same a rolling motion. 3rd. The wash box having inclined or curved rubbing surfaces, the journalled walking beam F with the suspended pressers I K, having alternating motion.

No. 14,721. Improvements in Incandescent Electric Lamps. (*Perfectionnements aux lampes électriques incandescentes.*)

John Jamieson, Newcastle-on-Tyne, Eng., 4th May, 1882; for 5 years.

Claim.—The means of cleaning the interior of incandescent vacuum electric lamps without destroying the vacuum in such lamp, or any mere modification of such means.

No. 14,722. Improvements on Shirts. (*Perfectionnements aux chemises.*)

Isaac Schmeer, New York, U.S., 4th May, 1882; for 5 years.

Claim.—1st. In shirts having open bosoms, the combination of inner flaps *b*, outer flaps *c* having eyelets and lacing cord *d*. 2nd. In a garment having neck band *g*, the combination thereof with the collar *e* which is fastened to the inner part of said neck band, below the top edge thereof and adapted to be entirely concealed when folded inwards, and to be folded upwards, outwards and downwards, around the neck band *g*. 3rd. A shirt provided with an extra yoke forming a pocket into which the collar may be folded. 4th. A shirt provided with extra yoke, said yoke being free from the shirt along its upper edge combined with a rolling collar.

No. 14,723. Improvements on Railway Tie Sawing Machines. (*Perfectionnements aux machines à scier les traverses des chemins de fer.*)

John Campbell, Windsor, Ont., 4th May, 1882; for 5 years.

Claim.—1st. The combination, with a gang of two circular saws, arranged at a suitable distance apart, of a chain supporting way arranged between said saws, and extending on opposite sides thereof, and an endless band chain arranged to travel upon said way, between said saws, and provided with a series of spaced links having outwardly projecting log-holders, arranged to pass between said saws and carry logs longitudinally between the same. 2nd. The combination, with the two circular saws, and a chain way between and extending on both sides thereof, of the band chain provided with the spaced log-carriers, and means for driving said saws and chain, the said chain and its supporting way being of sufficient length and properly arranged to support simultaneously a log that is being sawed, another that has been sawed and is being carried away from the saws, and another that is approaching the saws, so that receiving, sawing and delivering the logs are performed as a continuous operation.

No. 14,724. Improvement in Gates. (*Perfectionnement dans les barrières.*)

Alfonso P. Campton, Rohnerville, Cal., U.S., 4th May, 1882; for 5 years.

Claim.—A gate provided with lever E, lever hinge D provided with eye *g*, chains *d h*, latch F, diagonal brace *e* and catch G.

No. 14,725. Improvements in Knock Down Return Barrels. (*Perfectionnements aux barils brisés.*)

Francis S. Olmsted and George Huffman, Cedar Falls, Iowa, U.S., 4th May, 1882; for 5 years.

Claim.—The cylinder staves *a*, the flexible bands *b* connected thereto, the fastenings *c* connecting the staves to the bands, the band connecting bolts, end flanges *d*, spring catches *R*, bottom *e* and head *h*.

No. 14,726. Improvement in Process for Burning Lime. (*Perfectionnement des procédés pour cuire la chaux.*)

Fred B. Livingston, Morrisville, Vt., U. S., 4th May, 1882; for 5 years.

Claim.—The process for burning lime from a crystalline carbonate of lime which crumbles in the kiln when being heated, and consisting of the addition, in sufficient quantity, of silicious sand to coat the exterior surface of, and impregnate the fragments with a silicate of lime which is formed by the sand and lime under the influence of the heat in the kiln, while the lime is being burned.

No. 14,727. Improvements on Curtain Fixtures. (*Perfectionnements aux bâtons des rideaux.*)

Chauncey Buckley, Meriden, Ct., U.S., 4th May, 1882; for 5 years.

Claim.—1st. A curtain fixture in which a wood roll is employed, and which has a longitudinal chamber at one end, and constructed with a longitudinal concentric hole extending from the opposite end inward, and of the same or less diameter than the body of the gudgeon to be introduced. 2nd. A curtain fixture consisting of the wood roll, having a longitudinal chamber at one end to receive the spring and spindle, a mechanism between the spindle and roll which will permit the roll to turn freely in drawing down the curtain, also to turn freely when the curtain is being wound rapidly onto the roll, but automatically engage the roll and spindle, when the winding up of the curtain is retarded, the roll at the other end constructed with a longitudinal concentric hole extending from the end inward, and of the same or less diameter than the body of the gudgeon to be introduced. 3rd. In a curtain fixture, the combination of the roll, spindle and spring arranged therein, the pairs *a* & *b* hung to the roll, constructed and arranged to engage the spindle.

No. 14,728. Improvements on Hoop Planing Machines. (*Perfectionnements aux machines à planer les cercles.*)

Henry F. Campbell, Concord, N. H., U. S., 4th May, 1882; for 15 years.

Claim.—1st. In a machine for dressing or planing hoops, the elastic bed roll *D* and cutter head *B* parallel therewith, having their axis in fixed bearings combined with the pressers to act upon the woody side of the hoop to be dressed, and imbed the knots, warts and protuberances at its bark side, into the surface of the said elastic bedroll, whereby the hoop may be dressed smoothly on its woody side irrespective of, and without weakening it at or opposite its knots, warts or protuberances. 2nd. The angularly grooved lower feed roll, and the upper feed roller provided with the shouldered groove to receive a sawed hoop, combined with the elastic bedroll and cutter head, having their axis held in stationary bearings, and with the presser located in front of the bed roller, to act upon the hoop and imbed its projections at the bark side, into the said elastic bedroll. 3rd. The angularly grooved lower feed roller, and the upper feed roller grooved annularly to approximate in shape and receive the hoop to be dressed, and the guide at the rear of the said feed rolls to direct the movement of the said hoop, combined with a presser located in front of the bedroller and with the cutter-head and elastic bed-roller, each having its axis held in substantially fixed bearings. 4th. The elastic bedroll and cutter head, having their axis in substantially fixed bearings, and the pressers located each side thereof, to imbed the knots, warts and protuberances at the bark side of the hoop into the said elastic bedroll, combined with annularly grooved feeding rollers, and with the drawing rollers, that one of the drawing rollers to engage the bark side of the hoop being covered with india rubber. 5th. The improvement in the art or method of dressing flexible hoops, which consists in temporarily straightening the crooked hoop in front, and at the rear of the top of, and imbedding the knots, warts and protuberances at the back side of the hoop, into an elastic bedroll, the surface of which is made to yield to said protuberances, and at the same time dressing or planing the back or woody side of the hoop, by a blade which always moves in the same path with relation to the axis of the bedroll, whereby the proper amount of woody material is retained in the hoop opposite the knots, warts or protuberances thereon. 6th. The cutter-head and elastic bed roller, combined with the india rubber over drawing rollers, and the corrugated drawing rollers above them. 7th. The cutter-head, bed-roller and feed-rollers, combined with the guide having a series of passages and provided with guide rollers to bear against the sides of, and direct each hoop independently. 8th. The cutter-head, and means to support the material being planed, combined with the curved carrier bar, and presser foot mounted thereon, to rise and fall. 9th. The cutter-head, the elastic bed roller and the curved carrier bar, combined with a series of independent presser feet placed side by side thereon, to rise and fall in a curved path. 10th. The presser foot and its rollers, combined with the curved carrier bar. 11th. The cutter-head and elastic bed-roller, presser foot and its rollers, and curved carrier bar, combined with the levers and means to vary the pressure of the said lever on the foot, according to the work to be done. 12th. The cutter-head, elastic bed roller, the series of presser feet, the curved carrier bar, and means to vary the pressure of the said feet on the material being planed, combined with the guide having a series of passages and rollers.

No. 14,729. Improvements on Halters.

(*Perfectionnements aux licous.*)

Charles S. Upton and Charles E. Coates, Spencerport, (Assignees of Henry Korebeck, Parma, N.Y., U. S. 4th May, 1882; for 5 years.

Claim.—The combination, with the leather head piece *A* and nose piece *B*, of the rope or strap *C* provided with the two bights or branches *C'*, said bights being permanently attached to the ends of the nose piece, thence extending upward and passing loosely through the loops on the ends of the head piece, thence extending downward joining together and having a loop at the bottom through which the main end of the rope passes, thus forming a noose.

No. 14,730. Improvements in Tuyeres.

(*Perfectionnements aux tuyères.*)

William M. Riggan and Abram A. Riggan, (Assignees of George W. Riggan,) Madisonville, Ky., U. S., 4th May, 1882; for 5 years.

Claim.—1st. The circular hollow water chamber formed with hollow transverse grate bars connecting and opening therein, and pipe connections. 2nd. The circular hollow water chamber formed with hollow transverse grate bars, pipe connecting means and fastening lugs, in combination with the chamber and tuyere pipes. 3rd. The circular hollow water chamber formed with connecting transverse grate bars, the tuyere pipe and chamber formed with the projecting piece, and the movable bottom.

No. 14,731. Improvements in Folding Beds.

(*Perfectionnements aux lits pliants.*)

Fitzallan B. Williams and Waldo A. Williams, Chicago, Ill., U. S., 4th May, 1882; for 5 years.

Claim.—1st. In a folding bed, a shifting fulcrum consisting of two segments, or of a segment and straight projecting cleat, in combination with the upright frame and folding frame. 2nd. The head-board provided with weights and hinged to the head end of the folding frame and at a point above the fulcrum so that the leverage of the weight shall be increased during the first half of the operation of folding the bed. 3rd. A shifting fulcrum, in combination with the weight hinged to its lever, at a point above the level of the fulcrum. 4th. The weight hinged to its lever, at a point considerably above the level of its fulcrum. 5th. The head board made hollow and provided with one or more doors or shelves, and arranged to slide up and down on the upright frame. 6th. A rod *g*, in combination with lug *g'* upon the leg, and pivoted levers *H* & *H'*.

No. 14,732. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

The Shaw Glove Company, Boston, (Assignee of Herbert C. Shaw, Needham,) Mass., U. S., 4th May, 1882; for 5 years.

Claim.—1st. The combination of two or more separate sets of latch needles provided with studs arranged in each set, with carriers for supporting and guiding such needles, and with two cam bars provided with cams, and with mechanism for alternately reciprocating each of such cam bars across the separate series of needles, one of such cam bars being at rest, while the other may be in movement. 2nd. The combination of two or more separate sets of latch needles, provided with studs arranged in each set with carriers for supporting and guiding such needles, carrier sustaining shoes, arranged, supported and provided with mechanism for adjusting them, and with two cam bars provided with cams, and with mechanism for alternately reciprocating such bars. 3rd. The combination of the two alternately reciprocating cam-bars and carriage *N*, the said carriage and its support bar *M*, the three rotary toothed wheels *u*, *v*, *w*, the shaft *x*, lever *z*, pawl *q*, abutments *e*, tripping levers *p* and the bar *F*. 4th. The combination of the movable abutment or back bar *T* provided with means of moving it into and supporting it in each of its extreme positions, with two or more sets of latch needles, (arranged in carriers and provided with studs) and with two cam bars having cams, and also having means for alternately reciprocating such cam bars across the needles.

No. 14,733. Improvements on Portable Houses. (*Perfectionnements aux maisons portatives.*)

James Rielly, Sherbrooke, Que., 4th May, 1882; for 5 years.

Claim.—1st. An improved house or building, constructed in portable sections, detachably connected together. 2nd. An improved house or building having its sides, ends and roof constructed each in sections detachably joined together, and the said sides, ends and roof detachably connected together. 3rd. An improved house or building having its sides and ends made of two walls or thicknesses, and divided into sections, said sections detachably joined together by means of the compound joint. 4th. An improved house or building, having its roof constructed of two thicknesses, provided with an intermediate air space, and divided into sections detachably joined together. 5th. An improved house or building having its roof divided into halves, said halves detachably held together with the angle irons *F*, the halves constructed of sections joined together, and the whole detachably secured to the sides of the building by means of the angle irons *G*. 6th. An improved house or building, having a double roof provided with an intermediate air space and divided into halves detachably held together with the angle irons *F*, said halves constructed of sections joined together, and the whole detachably secured to the sides of the building by means of the angle irons *G*. 7th. The roof provided with the double bead at the joints. 8th. The double roof having the intermediate air space, and layer or layers of waterproof material, and the cleats having each a wave line surface, and provided with grooves meeting the lowest points of said wave lines in face. 9th. The metallic chimney, composed of an upper section, and a reduced lower portion or pipe enclosing a second pipe with an intervening air space, and provided with the stove pipe extending through said lower portion and projecting into the upper section.

10th. The combination, with the sides provided with the mortises and lock plates, of the notched floor beams having locks. 11th. The improved anchor posts, composed of the extend base and the screw rod provided with a nut or nuts. 12th. The described anchor posts, composed of the extended base and screw rods having a nut or nuts, and provided with a loose pipe encircling screw rod a part of its length.

No. 14,734. Improvements on Mowing Machines. (*Perfectionnements aux faucheuses.*)

Alexander Gordon and Daniel De Garmo, Rochester, N. Y., U. S., 6th May, 1882; for 5 years.

Claim.—1st. The combination of the casting E provided with the loop b, the stay bar H passing through the loop, pivoted at one end to the casting, and at the other to the main frame, and the lever G attached to the loop of the casting, and provided with means for holding it at any adjustment. 2nd. The combination, with the finger beam D and the adjustable casting E, of the hook L pivoted to the casting and operated by a hoisting chain, said hook engaging with a stud s for raising the finger beam.

No. 14,735. Improvements on Sap Evaporators. (*Perfectionnements aux appareils évaporatoires de l'eau d'étable.*)

Philo S. Ewins, West Berkshire, Vt., U. S., 6th May, 1882; for 5 years.

Claim.—1st. The combination, with a furnace having over its front wall a smoke box provided with a smoke exit, of an evaporating pan provided with a number of flues, and a sub-chamber or receptacle arranged across its back or rear end, and a deflector to cause the products of combustion to be carried beyond the rear ends of said flues, before passing into the same. 2nd. The combination, with a furnace, having over its front wall, a smoke box provided with a smoke exit, of an evaporating pan provided with a number of flues traversing its length and having a heater or sub-chamber arranged at its back, and a deflector to cause the products of combustion to be carried beyond the rear ends of said flues, and be directed against the bottom of the heater, or sub-chamber before entering the flues in said evaporating pan. 3rd. The combination, with a furnace having over its front wall a smoke box provided with a sliding register damper and a smoke exit, of an evaporating pan having a number of internal smoke flues. 4th. The combination, with a furnace having over its front wall a smoke box provided with a damper in its bottom, communicating with the fire box, and a smoke exit, of an evaporating pan, having a number of internal smoke flues. 5th. The combination, with the evaporating pan, divided longitudinally into the syrup compartment and the sections, the latter provided each with an internal smoke flue, of the damper O made in two parts. 6th. The combination, with the evaporating pan, divided longitudinally into the syrup compartment and the sections, the latter provided, each with an internal smoke flue, of the guard P. 7th. The combination, with the evaporating pan having the internal smoke flues, of the smoke box provided with the connecting pipes h. 8th. The evaporating pan divided longitudinally into the syrup compartment provided with the gate f, and the sections F having the openings e, and the sap heater arranged transversely at the back of the evaporating pan, and provided with the spout d and gate S.

No. 14,736. Improvements on Walking Sticks. (*Perfectionnements aux cannes.*)

John Draper, Whitby, Ont., 6th May, 1882; for 5 years.

Claim.—1st. In combination with a walking stick A, a metallic case C containing a lamp H and provided with a glass E, the said case being provided with suitable ventilating holes arranged to admit the passage of air through the case, while protecting the lamp from sudden gusts of wind. 2d. A walking stick having a metallic lamp case in it, an outer casing J encircling the tube I containing the lamp, and forming an air space through which the air passes into the lamp, in combination with the vertical wings M and circular flange L, arranged around the casing J for the purpose of protecting the air openings. 3rd. In a walking stick having a metallic lamp case inserted in it, the combination of a cone-shaped top F situated within the case, immediately below the top G, and forming an air space.

No. 14,737. Improvements in Magazine Fire-Arms. (*Perfectionnements aux armes à feu à coups multiples.*)

Alois Schneider, San Francisco, Cal., U. S., 6th May, 1882; for 5 years.

Claim.—1st. In a magazine gun, a vertically moving breech block provided with a downwardly projecting leg, and the forward wall of the frame, and provided with a lug F and adapted to bind against the forward wall of the frame, and steady the breech block when the breech is closed. 2nd. The rear wall of the frame, provided with a vertical slot and vertical inserted spring I, in combination with the pivoted guide bar J, and vertically moving breech block C. 3rd. The vertically moving breech block C, having the shell extractor moving in a chamber on one side of the breech block opening, and the cocking arm upon the opposite side, in combination with the actuating head D, of the lever, having a single supplemental pin K extending through from side to side, so as to operate both the cocking arm and to start the extractor. 4th. In combination, with the frame provided with a groove in which moves the head of the extractor, the slide L connected with and moved by the hammer in its fall, so as to close the end of said groove in the frame, into which the head of the extractor moves to seize cartridges. 5th. The rotating cartridge locking rod P, having a projection at the end of which it may be turned, in combination with the lug R pivoted at 3 to the forward part of head D, so that the travel of its projecting spur 5 is past the projection on the end of rod P and adapted to be thrown down and kept from operating the rod.

No. 14,738. Improvements on Hoop Splint Machines. (*Perfectionnements aux machines à effiler les cercles.*)

Henry F. Campbell, Concord, N. H., U. S., 6th May, 1882; for 5 years.

Claim.—1st. The table or bed to support the hoop-pole, and a band saw to cut the same combined with an elastic surfaced roller in which to imbed the knots, warts and short crooks of the hoop-pole, and with a suitable presser to keep the hoop-pole pressed against the said elastic surfaced roller. 2nd. The table D, the anti-friction balls d arranged therein, the edge rollers e and the rollers g θ . 3rd. The described method or process of producing hoop splints which are to retain the natural bark, which consists in imbedding the knots, warts and short crooks of that part of the hoop-pole to be contained in the splint, then being produced into the substance of an elastic roller against which the hoop-pole is pressed, and sawing the said splint from the pole parallel with the centre of the pole, whatever may be its curvature.

No. 14,739. Improvements on Feed Water Heaters. (*Perfectionnements aux chauffeurs d'alimentation.*)

John H. Turner, Fort Wayne, Ind., U. S., 6th May, 1882; for 5 years.

Claim.—The combination of the cylindrical tank A, surrounding shell B with the pipes C E F G, the condensing tank H having spray plate K and diaphragm L provided with V-shaped perforations, the overflow pipe N and pipe I.

No. 14,740. Improvements on Vapour Burners. (*Perfectionnements aux becs à gaz.*)

Albert H. Watkins, Boston, Mass., U. S., 6th May, 1882; for 5 years.

Claim.—1st. The combination, with a mixing chamber, of the flaring rings C C having their upper portions farther apart than their lower portions. 2nd. The combination, with mixing chamber B and flaring rings C, of the removable tip A, adapted to be held in place by the set screw D. 3rd. The generator E provided with air holes H, regulating screw G, mixing chamber B, tip A and flaring rings C C.

No. 14,741. Improvements on Vehicle Springs. (*Perfectionnements aux ressorts des voitures.*)

Harry S. Clark, Towanda, Penn., U. S., 6th May, 1882; for 5 years.

Claim.—The combination, with two pairs of oblique quarter springs H, bolted or clipped diagonally across the separate front and rear bars B, of two transverse half elliptic springs F, arranged in front and rear, and the diagonal or ball couplings G, whereby the ends of the quarter springs are suspended from the ends of the half springs.

No. 14,742. Improvements on Wood Drying Apparatus. (*Perfectionnements aux sécheries à bois.*)

David F. Noyes, Lewiston, Me., U. S., 6th May, 1882; for 5 years.

Claim.—1st. A metal platen formed of top, bottom and side plates, and a fold or a series of folds of piping. 2nd. A series of platens provided with studs, and by means of links adapted to be suspended in horizontal planes, one beneath the other. 3rd. A series of platens provided with a fold, or a series of folds of piping, and a series of pipes connecting the platens together. 4th. A series of platens, provided with means for their suspension in horizontal planes beneath each other, and having a fold, or series of folds, of piping provided with connecting pipes between the platens.

No. 14,743. Improvements on Bustles. (*Perfectionnements aux tournures.*)

James Stuart, (Assignee of Austin Kelley,) Brooklyn, N. Y., U. S., 6th May, 1882; for 5 years.

Claim.—1st. The series of springs D formed in loops extending up and down, with flexible material B serving to connect and aiding to hold the several springs in position. 2nd. The adjustable bustle described having spring hooks or analogous fastenings G, connected at or near the lower end, in combination with eyelets or eyes I J arranged in two or more series. 3rd. The springs D formed in vertical loops by means of fastenings G, engaging with eyes I J on the inner face of the structure, and having the lower end of the springs extended beyond the fastenings, so as to hold the several springs in the form of an Arabic numeral 6. 4th. The spring loops D, fastenings G I J, fabric B and waist band A, with the upper end of the springs adjacent to the waistband, curved outward so that each spring forms a curve inward at the lower end, and outward at the upper end. 5th. The two armed fastenings G attached to the spring D, in combination with a series of eyelets or analogous pockets I J and arranged to engage by its arms in two of the said eyelets or pockets and to hold the terminal portion of the spring firmly in a position nearly parallel to a portion of the same spring, at the desired higher level.

No. 14,744. Improvements on Machines for Manufacturing Barbed Metal Fence Strips. (*Perfectionnements aux machines pour faire les bandes métalliques barbelées pour les clôtures.*)

Thomas C. Hewitt, (Assignee of Joseph F. Walmsley,) London, Ont., 6th May, 1882; for 5 years.

Claim.—1st. A pair of revolving disks F G, the upper one F being keyed to shaft D, in adjustable journal B controlled by screw H, said disk having reciprocal motion communicated to them by ordinary spur gear I J or equivalent device. 2nd. In combination with the

disks F G, the barb forming apparatus consisting of knives M screwed to surface or edge of disks by means of screws and plates N, and regulated by screwed ends O, the knives matching with corresponding grooves P in opposite disk. 3rd. In combination with the apparatus the pickers Q with openings R R for receiving the strips as the barbs are cut, and relieving them from the knives and disks.

No. 14,445. Improvements on Mail Bags.

(*Perfectionnements aux valises à lettres.*)

Silas Smith and Jacob L. Engle, Middleburgh, N. Y., U. S., 6th May, 1882; for 5 years.

Claim.—In a mail bag, a sliding leather fastening strip D, slotted to receive T-headed fastening pins B B, in combination, with a slotted thickness of the mail bag and guard strip e.

No. 14,746. Improvements on Car Springs.

(*Perfectionnements aux ressorts des chars.*)

Charles T. Schoen and Charles Scott, Philadelphia, Pa., U. S., 6th May, 1882; for 15 years.

Claim.—A graduated bolster spring for railroad cars, composed of a group of spirally coiled bars, placed side by side and in which the spiral (or spirals) having the greatest bearing and carrying capacity, is not acted on by the load, till after the other and weaker spirals of the group have been brought into action, and in which all the spirals under a given pressure shall become solid at the same time.

No. 14,747. Improvements in Hydro-Carbon Burners.

(*Perfectionnements aux foyers à hydro-carbures.*)

Evan A. Edwards, Los Angeles, Cal., U. S., 6th May, 1882; for 5 years.

Claim.—1st. In a hydro-carbon or liquid fuel burner, the oil passage B in connection with the oil supply and having a regulating valve d at its exit end, in combination with the steam passage E, in connection with the steam source, said steam passage having its exit end provided with spiral or inclined grooves or passages c opening out of the end of the burner, separately from the said oil passages. 2nd. The hydro-carbon burner consisting of the casting A, with the apertures a b, pipe B with its valve seat c, open ended hollow stem D with its valve d and bushing C, and the pipe E with its spiral or inclined grooves or channels e.

No. 14,748. Improvements in Salt Water Evaporating Apparatus.

(*Perfectionnement aux appareils évaporatoires de l'eau de mer.*)

Daniel H. Gowing, (Assignee of Oliver La F. Browney.) Syracuse, N. Y., U. S., 6th May, 1882; for 5 years.

Claim. 1st. The process of manufacturing salt from natural brine, by conveying the brine successively through preliminary evaporating and purifying tanks or vessels, to the final evaporating and granulating vessel, applying the primary and main heating agent to said granulating vessel and collecting from the latter the vapour emitted from the brine in process of granulation, and applying said vapour to the preliminary evaporating and purifying vessels for the purpose of heating the contents thereof. 2nd. Passing the crude brine through one or more preliminary heating and purifying tanks or vessels, to the final evaporating and granulating vessel, applying the primary heating agent to the latter, and gathering the vapour generated in the said evaporating and granulating vessel, and applying said vapour to the preliminary heating and purifying tanks in such a manner as to heat the brine contained therein, and bring the same to that degree of saturation at which oxide of iron, carbonate of lime and the usual attendant sulphates are precipitated, then introducing sal soda to neutralize and precipitate the chlorides of calcium and magnesium, and drawing off the purified brine into the final co-operating and granulating vessel, and there reducing it to salt. 3rd. Introducing the brine into a suitable receptacle and admixing therewith a sufficient quantity of salt to increase its density to the degree of saturation, then allowing the impurities to settle, and subsequently drawing off the purified and saturated brine and conveying the same to the final evaporator or grainer, and there converting it into salt. 4th. A salt water evaporating apparatus comprising a granulator or final evaporator heated by the primary heating agent, vats or suitable receptacles for preliminary heating and purifying of the brine heated by the vapour emitted from the granulator, and suitable ducts for conveying the brine successively through said tank to the granulator. 5th. The combination and arrangement, in an evaporating apparatus having one or more evaporating vessels heated artificially, of a removable cover or covers for the respective vessels, and a vapour duct connected with said cover or covers and communicating with the furnace of the evaporating works. 6th. The combination, with an artificially heated evaporating vessel, of a removable cover, of a vent-duct connected with said cover, and a condenser applied to said vent-duct and intercepting the liquid on its way to the evaporating vessel. 7th. An evaporating apparatus comprising two or more evaporating vessels or sets of such vessels, the primary heating agent being applied to the first vessel or set of vessels, and the succeeding vessels being heated by the vapour generated in the preceding vessel, and conducted to the said succeeding vessels by suitable ducts or passages, aided by the draft introduced by a pump or suction fan. 8th. The described means of utilizing the heat and products of condensation, consisting in the combination, with an evaporating vessel, or series of such vessels, of a receptacle adapted to collect the vapour arising from said evaporating vessel or vessels, a vapour duct connected with said receptacle, a condenser, or condensers applied to the vapour duct, a trap to prevent the ingress of air through said duct, a receptacle to collect the products of condensation, and a suction fan or pump connected to the vapour duct. 9th. The combination, with an evaporating vessel or series of such vessels, of a receptacle adapted to collect the vapour from said vessels, a vapour duct connected with said receptacle, a condenser applied to said duct, and a pump or suc-

tion fan connected with the vapour duct and having its discharge directed to a furnace to apply thereto a blast. 10th. The evaporating tank or vessel D, having the extension l provided with the thimble m, and the cover F hinged to said extension. 11th. In combination with an evaporating vessel, the cover F having the diaphragm u with steam passages through it, and with a barrier around said passages, to prevent the return of the condensed steam to the evaporating vessel. 12th. The combination, with the evaporating vessel D and vapour duct b, of the valve n closed automatically by the opening of the cover F. 13th. A salt water evaporating apparatus comprising a grainer or final evaporator heated by the primary heating agent, vats or suitable receptacles for preliminary heating, evaporation and purification of the brine heated by the vapour emitted from the grainer or final evaporator, and settling tank interposed between the said grainer and preliminary heating and purifying tanks, the brine being conveyed successively through the said tanks to the grainer. 14th. A salt water evaporator consisting of the following appliances and arrangements, to wit: first, a receptacle for the crude brine, second, a brine saturating tank or vessel having communicative connection with the first receptacle, third, a tank arranged to receive the saturated brine of the second tank and allow the impurities of said brine to settle, fourth, a grainer or final evaporator communicating with the third tank, fifth, a steam generator, sixth, a steam duct extended from the steam generator through, or along the grainer or final evaporator, seventh, a cover applied to the top of the grainer, eighth, a vapour duct extended from the cover through the brine saturating tank and the first crude brine receptacle, ninth, a suction fan or pump having its induction port communicating with the end of the aforesaid vapour duct, and its discharge directed to the fire box or furnace of the steam generator. 15th. The receptacle A, saturating tank B, settling tank C and grainer D, communicating successively as described, in combination with the steam generator E having the steam pipe a extended through the grainer D, and returned from there to the steam generator, the cover F having the vapour duct b extended through the saturating tank B and through the crude brine receptacle A and the fan G having its induction pipe v connected with the vapour duct b, and the crude brine receptacle, and its discharge pipe d communicating with the fire box of the steam generator E.

No. 14,749. Improvements in Grate Bars.

(*Perfectionnements aux barres des grilles.*)

John C. Knoeppel, Milwaukee, Wis., U. S., 6th May, 1882; for 5 years.

Claim.—1st. In grate bars for furnaces, a solid central web provided with one or more services of open spaces or air passages formed transversely through said web, as adapted to facilitate the admission of air, whereby the temperature of the bar is lowered and the draft of the furnace is promoted. 2nd. A solid central web of a waved or corrugated form, adapted by such waved or corrugated form to resist the warping tendency of the bar, when expanded or contracted under varying temperature. 3rd. The combination of the waved or corrugated web, provided with transverse slots or perforations, with top and bottom flanges. 4th. A waved or corrugated web provided with two or more series of transverse slots or perforations arranged alternately, in combination with top and bottom flanges. 5th. A reversible furnace grate bar having a waved or corrugated web straight at each end, and provided with transverse slots or perforations, and top and bottom flanges. 6th. A reversible furnace grate bar having top and bottom flanges, and a waved or corrugated web straight at each end, and provided with two or more series of transverse slots or perforations. 7th. A reversible furnace grate bar with straight web and flanges at each end, and intermediate waved or corrugated web, and waved top and bottom flanges. 8th. A reversible furnace grate bar with straight web and flanges at each end, and intermediate waved top and bottom flanges, and waved or corrugated web provided with transverse slots or perforations. 9th. A reversible furnace grate bar with straight web and flanges at each end, and intermediate waved top and bottom flanges, and waved and corrugated web provided with two or more series of transverse slots or perforations. 10th. A reversible furnace grate bar, provided with top and bottom flanges having lugs cast thereon, and a waved or corrugated web. 11th. A reversible furnace grate bar, provided with top and bottom flanges having lugs cast thereon, and a waved or corrugated web having transverse slots or perforations. 12th. A reversible furnace grate bar provided with top and bottom flanges having lugs cast thereon, and a waved or corrugated web having two or more series of transverse slots or perforations. 13th. A reversible furnace grate bar with straight web and flanges at each end, and intermediate waved top and bottom flanges having lugs cast thereon, and waved or corrugated web having two or more series of transverse slots or perforations arranged alternately. 14th. In furnaces, the seat for the ends of grate bars consisting in the combination of bed plate H, partition I, bar J, flanges R adapted to support the ends of the receptacle bars, and retaining them in the proper relative position to each other. 15th. In furnace grates, the combination of a series of two or more waved or corrugated bars, so formed and arranged that the convex surfaces of one bar conforms to the concave surface of the next opposite bar of such series, whereby a uniform waved or zigzag space is formed between the respective bars of the grate. 16th. In grate bars, the combination of the bars described with the seat G, consisting of the bed plate H, partitions I, bar J and flanges K.

No. 14,750. Improvements on Indexes.

(*Perfectionnements aux index.*)

John H. Wagstaff, St. John, N. B., 8th May, 1882; for 5 years.

Claim.—An index in which the successive pages or sheets have the letters of the alphabet arranged in a row, in one or more places across each page, and representing the letters as though printed from top to bottom of the page, and provided with a marginal alphabetical index

No. 14,751. Improvement in Neck Yoke Rings.

(*Perfectionnement des anneaux de jougs.*)

Charles Shuman, Rockford, Ill., U. S., 8th May, 1882; for 5 years.

Claim.—1st. The ring C formed wider at the top than at its under side, and provided with a leather or other equivalent lining *b* fitting the upper side of said ring, but projecting below the under side thereof to form the flange *c*. 2nd. The combination, with the socket B and the flange *a*, of the ring C having its rear side bevelled and provided with a leather or other equivalent lining, the latter having a flange *c* which bears against the flange *a*. 3rd. The combination, with the ring C having studs *d*, of a leather or other equivalent lining *b* having the flange *c*, the clasp ring D adapted to fit over the ring C and provided with an opening *h* to receive the stud *d*, a semi-bearing *k* for the stud *c*, and a clasp arm E passing under the neck yoke and arranged to bear on the pole, and a clasp arm F secured to the front of the neck yoke and provided with a stud *l*, to complete the bearing for the stud *c*.

No. 14,752. Improvements in Machine for Sawing Barrel Hoops From Poles. (*Perfectionnements aux machines pour scier les perches pour les cercles de futailles.*)

William Bowker, Somerville, Mass., U.S., 8th May, 1882; for 5 years.

Claim.—1st. The combination of two or more endless band saws, with a guide *h* and a pressure roller N arranged and to operate with each of such saws. 2nd. The combination of one or more sets of feed rollers, and a set of draft rollers, with two or more endless band saws, and a guide and pressure roller to each of such saws. 3rd. Two next contiguous band saw supporting pulleys, provided with separate arbors in, or about in line with each other, and having between them and also between the two pulleys, a space *s*, a little wider than the band saw to run on one of such pulleys. 4th. The combination of the five pulleys *d, e, f, g, h* with the three endless band saws BCD arranged with such pulleys, the pulley *f* serving in such combination to support the two saws C and D.

No. 14,753. Improvements on Steam Valves. (*Perfectionnements aux soupapes de vapeur.*)

Jonathan Neff, Peterburgh, Ont., 8th May, 1882, (Extension of Patent No. 7479.)

No. 14,754. Improvements on Anti-Friction bearings. (*Perfectionnements aux coussinets à anti friction.*)

Thomas F. Hemmich, Reading, Penn., U.S., 8th May, 1882; for 5 years.

Claim.—1st. A pedestal B, of Fig. 4, adapted to be used as a car truck pedestal, and in combination therewith a yoke G cast with and forming an integral part of the jaws thereof, and having the set bolt H. 2nd. The combination of pedestal B with an anti-friction axle box case C, by the sliding lugs C, seat C² and spring D, and with the yoke G by seat C³, spring E, cap F and set bolt H. 3rd. The axle box case or seating C provided with interior chilled wearing surface, exterior lug slides C¹, vertical spring seat C² and thrust spring C³, cap C⁴, ears C⁵, opening in cap C⁶ and dirt discharge C⁷. 4th. The chilled bearing shell L provided with head or collar L¹, its interior adapted by casting upon a mandrel within a chill, to be fitted upon the end A¹ of the axle shaft or spindle A and to be retained upon the end of the same by the set bolt A². 5th. The chilled anti-friction rollers K adapted by a bevel chamber at their base to contact with the head or collar L¹ of the shell bearing or toe L, the rollers being so arranged and combined with the case C and shell bearing L, that the thrust or weight of the axle shaft or spindle A shall be distributed upon the toe L, the collar L¹, the chilled bed of the case C and the roller ledge K¹ at truncated end of the case. 6th. The combination of case C with the anti-friction rollers K, shell bearing L, axle shaft or spindle A and pedestal B. 7th. The combination of the chilled anti-friction rollers K with the chilled surface of the case C, and of the chilled shell bearing L upon the axle shaft or spindle A. 8th. The combination of the chilled shell bearing L having the head L¹, with the axle shaft or spindle A by the reduced portion A¹, and with the chilled interior surface of the case C by the chilled anti-friction rollers K. 9th. The drum support N cut away to form feet R, in combination with the case C as adapted for a step to a vertical shaft or spindle. 10th. In combination with a vertical shaft or spindle A, the case C supported upon the drum N, cast therewith or bolted thereto, and having its interior surface chilled and filled with chilled anti-friction rollers K forming a seat and bearing for the toe L, L¹ of the spindle A, the toe L, L¹ being a chilled or case hardened casting secured to the spindle or shaft by the set bolt A². 11th. In an anti-friction car axle bearing, the seat or ledge C², at the apex of the shell C, adapted to serve as a bed for the secondary set of anti-friction rollers K², in combination with said rollers and with the cap or washer C³ and bolt A². 12th. In an anti-friction roller car axle bearing, the rollers K² placed between the seat C² of the case C, and the cap or washer C³ and secured in working contact therewith, by the bolt A², whereby the end thrust upon the axle is taken up, and the bearing made positive in position upon the journal. 13th. In combination with a shaft or spindle A, provided with an anti-friction toe or collar L, L¹ running upon anti-friction rollers K, the case or shell C provided with a hemispherical base C*, abutment C**, cap C⁴ and internal chilled conical bed adapted to receive the said anti-friction rollers, the shell being held within the bridge tree plate ring D² by the screws D³. 14th. The bridge tree plate D¹, provided with a circular rein having ears D² and set screws D³, in combination with a spherical base C*, anti-friction roller shell step C, abutment C** rollers K and toe L, L¹ of a spindle or shaft A. 15th. The exterior mill bush shell T, having wings T¹, cap F² and guide entrances or grooves T², in combination with the interior mill bush U, rollers K, collars L² and spindle A. 16th. The interior mill bush U provided with guide leathers U¹, an internal conical bed for a series of anti-friction rollers R and a dust cap F¹, in combination with the spindle A, shell L², collar W, exterior bush T with guide recesses T² and guide leathers T¹.

No. 14,755. Railway Fish Plate Bolt Fastener. (*Serre-boulon des éclisses de chemin de fer.*)

Magloire Thibault, Ottawa, Ont., 8th May, 1882; for 5 years.

Claim.—1st. The joint fastenings composed of the plate B, necked bolts D, the two tapered slotted plates C, provided with notches *f* and the pin E. 2nd. As a new article of manufacture, a flat taper plate provided with longitudinal slots enlarged at one end and with transverse grooves in one face. 3rd. The taper slotted plate C provided with the grooves *f* for a fastening pin, and the notch *g* to facilitate their removal.

No. 14,756. Improvements on Combined Registers and Ottomans. (*Perfectionnement aux registres de chaleur et aux ottomans combinés.*)

John A. Graham, Emelie C. Rausch and Amelia L. Graham, Red Wing, Minn., U.S., 8th May, 1882; for 5 years.

Claim.—1st. An ottoman or like article of furniture, having an open base or bottom, and provided with doors in its sides, whereby it is adapted to receive and distribute heat from a register opening. 2nd. The described article of furniture A provided with doors or valves C, latches D and keepers E F. 3rd. The ottoman A, provided with doors C and stops H.

No. 14,757. Improvements in Boots and Shoes. (*Perfectionnements aux chaussures.*)

Augustin O. Lemay dit Delorme, Montreal, Que., 8th May, 1882; for 5 years.

Claim.—Une bonte-semelle fendue de sorte qu'elle peut être ouverte du milieu.

No. 14,758. Improvement on Corsets. (*Perfectionnement aux corsets.*)

Frederick Compton, Toronto, Ont., (Assignee of Thomas P. Taylor, Bridgeport, Ct., U.S.,) 9th May, 1882; for 5 years.

Claim.—The combination in a corset, of sections constituting part of the body, having independent pockets extending from the edges toward the inner portions and overlapping each other, and containing ribs which overlap at such inner portions.

No. 14,759. Improvements in the Manufacture of Barrel Heads. (*Perfectionnements dans la fabrication des fonds de futailles.*)

The American Paper Barrel Company, (Assignee George W. Laraway, and Dwight Slate,) Hartford, Conn., U.S., 9th May, 1882; for 5 years.

Claim.—1st. The combination of the piston, the resisting surface opposed to the piston, and the laterally removable matrix case. 2nd. The removable matrix case made of sections hinged together to the end, that the case may be opened. 3rd. As a part of a pulp moulding machine, the removable matrix case, provided with a movable cover. 4th. The combination of the eccentric, the toggle arms and the piston.

No. 14,760. Improvements in the Manufacture of Shovels. (*Perfectionnements dans la fabrication des pelles.*)

Henry W. Sheppard, (Assignee of John Graves,) New York, U.S., 10th May, 1882, (Extension of Patent No. 7450.)

No. 14,761. Improvements on Electric Alarm Apparatus. (*Perfectionnements aux appareils électriques d'alarme.*)

Samuel S. Applegate, Camden, N.J., U.S., 10th May, 1882; for 5 years.

Claim.—1st. The combination of a mat, with wires and plates carried by the mat, and adapted to form part of a closed circuit line. 2nd. The combination of a mat with two sets of wires and plates carried by the mat, one set being adapted to form part of a closed circuit line, and the other set being adapted to form part of an open circuit line. 3rd. The combination of a mat carrying two independent sets of wires and plates, one adapted to form part of an open circuit, and the other adapted to form part of a closed circuit, with a switch whereby one set may be thrown into action, and the other set out of action. 4th. The combination of a mat composed of jointed strips, with circuit making or breaking devices carried by said strips, and with connecting wires crossing the joints between the strips diagonally. 5th. The combination of the mat having openings *b*, wires carried by the mat and adapted to form part of a closed circuit line, and plates *a* or *a*¹ connected to the wires, and having bent ends overlapping each other, and adapted to the openings *b*. 6th. The combination of the mat, the wires carried thereby, and the plates *a* or *a*¹, the latter having a slotted end forming a series of contact fingers. 7th. The combination of a mat, with two or more sets of circuit making or breaking plates carried thereby, and wires connecting said sets of plates, and sunk in grooves in the mat. 8th. The combination of the mat and the circuit making or breaking devices, carried thereby, with the tapered pads P. 9th. The combination of the mat and the circuit making or breaking devices, the tapered pad P and the corner pad P¹. 10th. The combination of the bell, magnet, armature and frame, the circuit breaker *h*, the post *f* having a finger *z*, and the wheel M operated by the armature, and having pins or projections *u*. 11th. The combination of the bell, magnet, armature and frame, the circuit breaker *h*, the post *j* having a finger *z*, the wheel M operated by the armature, and having pins or projections *u*, the lever N carrying

said wheel, and the stop *t*. 12th. The combination of the bell, magnet, armature and frame, the circuit breaker *h*, the post *j* having an arm *j*, and the stop *j*.

No. 14,762. Improvement in Mills for Pulverizing Hard and Refractory Materials. (*Perfectionnement des moulins à triturer les matières dures et réfractaires.*)

Charles Ross, Jr., Brooklyn, N. Y., U. S., 10th May, 1882; for 5 years.

Claim.—1st. The case *A* inclosing the rotary disk *B*, and provided with a peripheral feed-chute directed downward tangential to the disk, an opposite peripheral discharge chute directed upward, and central air inlets provided with a register. 2nd. The combination of the case *A* provided with a feed chute and discharge chute, with the rotary disk *B*, and stop *K* having its lower face hollowed out. 3rd. The combination, with the case *A* provided with a feed chute and discharge chute, of central air inlets *m* and register *N*, of the chamber *O* provided with the opening *Q* and bins *P*.

No. 14,763. Improvements on Adjustable Invalid Chairs. (*Perfectionnements aux sièges pliants pour les invalides.*)

Anne S. Evans, Kingston, Ont., 10th May, 1882; for 5 years.

Claim.—1st. The combination of the frame work, with sheets strapped or laced thereto, and the means for raising, lowering and holding the parts. 2nd. The combination of the sills *S*, legs *L* and braces *B* hinged thereto, with plates *P* and arms *A* hinged to the legs and braces respectively and to one another, the back *B* hinged to the arms *A*, the tie rod, the hammock sheets *H H* strapped or laced to the plates *P* and back *B* respectively. 3rd. The combination of the arms *A* hinged to the plates *P*, and the hammock sheets *H*. 4th. The combination of the rack plates *r*, arms *A*, stop catches *p* and plates *P*. 5th. The cross bars *C*, in combination with the sills *S*. 6th. The table or desk *D*, and clips *c*, in combination with the arms *A* or the plates *P*. 7th. The foot stool *F*, or a strapped sheet foot support, in combination with the bars *C*, or the straps *E* respectively. 8th. The standard *St* having feet *Sz*, pivoted latches *l* and pawl *p*, the shaft *R* having ratchet wheel and square end, and the shaft *E*, in combination with the clips *c*, the sills *S* and the arms *A*, or plates *P* or back *B*. 9th. The cranked rod *R* having square end, collars *O* and ratchet *W*, in combination with the sills *J*, pawl *p* and arms *A*. 10th. The cranked rod *R* having square ends, collars *O*, ratchet *W*, in combination with the arms *A*, pawls *p* and the back *B*. 11th. The braces *b* and racks *r* and *r*, in combination with the sills, legs, arms and back. 12th. The sheet *H* having an opening, the pocket *V* and pot de chambre *U*, in combination with the plates *P* or arms *A*.

No. 14,764. Improvements on Signal Lanterns. (*Perfectionnements aux lanternes à signaux.*)

John J. Robinson, Everett, Mass., U. S., 10th May, 1882; for 5 years.

Claim.—1st. As an improved article of manufacture, the signal lantern described, composed of the case *a*, the external metal frame *b* extended above and below it, and the cross rods. 2nd. The lantern case *a* provided with glass at its side, and the perforated bottom piece *c* combined with the cross rods and external elliptical frame *b* and hoop *i* connected therewith.

No. 14,765. Improvements in the Manufacture of Stove Ornaments. (*Perfectionnements dans la fabrication des ornements des poêles.*)

Henry A. Matthews, Waterbury, Ct., U. S., 10th May, 1882; for 5 years.

Claim.—The described ornament for stoves composed of several sections, spun or struck from sheet metal, the several sections being secured together.

No. 14,766. Improvements in the Method of Welding and Sizing Tubes. (*Perfectionnements dans la manière de souder et ajuster les tubes.*)

Stephen P. M. Tasker, Philadelphia, Pa., U. S., 12th May, 1882; for 5 years.

Claim.—1st. The method of welding and sizing tubing by conducting in a continuous operation the following steps, *viz*: first, heating skelp to a welding heat, second, welding said skelp to form a tube, third, heating said welded tube, fourth, condensing said welded tube to any desired diameter. 2nd. The combination, to form a single apparatus for the continuous welding and sizing of tubing of a furnace, a welding apparatus, a second furnace, and a condensing apparatus.

No. 14,767. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Addison G. Waterhouse, New York, U. S., 12th May, 1882; for 15 years.

Claim.—1st. The combination, with the feed controlling mechanism, of a fixed and a pivoted electro magnet, each containing a single core with pole pieces extending at right angles therefrom, one of said magnets being included in the main or lamp circuit, and the other in a shunt or derived circuit. 2nd. The combination of a fixed electro-magnet composed of a helix and core, with right angled polar extensions, with a similarly constructed electro-magnet connected with the feed controlling mechanism, and pivoted in such a manner that its polar extensions may swing in face of those of the said fixed magnet, one of said magnets being included in the lamp circuit, the other

in a shunt or derived circuit about the lamp. 3rd. The combination, with the feed controlling mechanism in an electric lamp, of a fixed and movable iron rod or core provided with right angle polar extensions projecting towards one another, and main and derived circuit coils wound upon said rods or upon one of them only, so that the derived circuit coil will tend to neutralize the direct magnetizing effects, or the magnetic inductive effects, arising from the action of the main circuit coil. 4th. The combination, with the feed mechanism and the movable magnet connected therewith, of the circuit closing spring and circuit connections, whereby, when said magnet is allowed to recede from its armature, or the fixed magnet, a safety or shunt circuit is closed around the lamp. 5th. The combination, with the tilting clutch lever, of the steel clutch plates mounted upon the lever and adapted to engage with the carbon carrier. 6th. The combination of the rocking electro-magnet, with the supporting links attached to its ends, the cross bar jointing the links at their lower ends, and the tilting clutch supported at one end by the cross bar. 7th. The combination, with the feed controlling mechanism in an electric lamp, of two electro-magnets placed parallel to one another in the same horizontal plane, right angle polar extensions from the poles of said magnets projecting towards one another, and supporting rods connected to one of said magnets and movable with it for supporting and operating the feed controlling devices. 8th. The combination, with the cross bar for the lower carbon holder, of a tube supported in an opening in said bar, a two part clamp, one portion of which is provided with an inclined or bevelled projection bearing against the inner edge of the tube, the other with a screw stem or spindle passing downwards through the cross bar, and a nut engaging with the stem and bearing against the under side of the cross bar. 9th. An upper carbon clamp made in two pieces, semi-cylindrical at their lower ends for grasping the carbon, and formed into hemispheres at their upper ends, so as to embrace a spherical projection upon the carbon rod or carrier.

No. 14,768. Improvements in Paving and Building Materials. (*Perfectionnements dans les matériaux de pavage et de construction.*)

Antonio Pelletier, Washington, D. C., and Tranquilino Lunas, Los Lunas, N. M., U. S., 12th May, 1882; for 5 years.

Claim.—1st. The combination of asphaltum or bitumen with sand or broken rock or stone, and an oxide of any metal or other base, and a chloride of the same base, in varying proportions. 2nd. The combination of sand or broken rock or stone and an oxide of any metal or other base, and a chloride of the same base with any mineral or vegetable bituminous or gluey substance to be used as a binder in varying proportions.

No. 14,769. Improvements on Time-Piece Calendars. (*Perfectionnements aux chronomètres calendriers.*)

George E. Sanford, Genoa, and Elor G. Bonney, Eaton, N. Y., U. S., 12th May, 1882; for 5 years.

Claim.—1st. The gauge wheel *L* and spring *R* arranged to be wound upon the shaft of said wheel during the month, or while the gauge wheel advances, and to re-act upon said wheel when released, in combination with mechanism for automatically releasing said wheel at the end of the calendar month. 2nd. The gauge wheel *L* having arm *G* and stepped flange *H*. 3rd. The combination of the units wheel having projection arm *N*, with the tens wheel *P*, having notches *O*, the toothed tens disc *Z*, the regulator wheel *A* having crank *B*, the pitman *D* and the spring *S*. 4th. The combination of the year wheel having a notched rim *W*, with the lever *T* having spring *K*, the gauge wheel *L* and the toothed wheel or units wheel *I*. 5th. The gauge wheel *L* having arm *G* and stepped flange *H*, in combination with the units wheel *I*, the drive wheel *D* having arms *E* *F*, and the week wheel *X*. 6th. The driving wheel *D* placed loosely upon one of the winding posts engaging the dial wheel *C* and having arms *E* *F*, for simultaneously actuating the day wheel and the units disc of the month register. 7th. The combination of the year wheel having rim *W* provided with teeth *W*, and notches *28/30*, the lever *T* having spring *K*, and curved arm provided with hook *M* and tooth *N*, and the gauge wheel *L* having stepped flange *H*. 8th. The combination of the units wheel *I* having teeth or ratchets *J*, the gauge wheel *L*, the lever *T* having arm *L*, and the spring *O*. 9th. The combination of the year wheel having notched rim *W*, the four year wheel having projection *R*, the gauge wheel *L* and the lever *T*.

No. 14,770. Improvements on Sulky Harrows. (*Perfectionnements aux herbes à siège.*)

Charles La Dow, Albany, N. Y., U. S., 12th May, 1882; for 15 years.

Claim.—1st. The combination of the main frame, with the long and short independently vibrating tooth arms hinged thereto, and spring teeth connected to said arms, said teeth being constructed to yield rearwardly and recoil without side vibration. 2nd. The combination of a draft frame, with an arm attached thereto, and adapted to conform to the surface traversed, and a flat spring tooth adjustably connected to said arm, whereby the extent of vibration of the tooth can be varied. 3rd. The combination of the main frame, with a vibratory tooth arm hinged thereto, and the broad and flat spring tooth carried by the vibratory tooth arm, said arm being arranged to extend over the cutting point of the tooth. 4th. The combination, in a harrow, of the pole with the cross bar *B*, the brace *D* extending rearwardly from the cross bar to provide supports for the main frame, and the spring teeth *G* adjustably secured in slots in the hinged tooth arms. 5th. The combination of the pole with the cross bar *B*, the braces *D*, the hinged tooth arms, the flat spring teeth *G* secured to the latter, and lifting mechanism for raising and supporting the teeth, the points of the said spring teeth being constructed and arranged to act on the soil in different vertical planes transversely to the line of draft. 6th. The combination of the main frame with the independently articulating tooth arms hinged thereto, and provided with slots and the flat spring teeth vibrating within the slots in the tooth arms, said

members being organized for operation as described. 7th. The combination, in a harrow, of the pole with the cross bar B, the braces D extending rearwardly from the cross bar to provide supports for the main frame, and the spring teeth G secured to the hinged tooth arms, 8th. The combination, in a harrow, of the pole with the cross bar B, the braces D, the spring teeth G secured to the hinged tooth arms E E', the bail F passing transversely under the hinged tooth arms, the lever arranged to elevate the bail, and the rack bar adapted to engage the lever. 9th. The combination, in a spring tooth harrow, of the main frame with vibratory tooth arms hinged thereto, and slotted for the reception of the spring teeth.

No. 14,771. Improvement on Harrows.

(*Perfectionnement des herbes.*)

Effinger E. Whipple, Moline, Ill., U. S., 12th May, 1882; for 5 years.

Claim.—1st. The combination, with the harrow frame, of the tooth beam B, secured to the said frame by an elastic connection, and provided with the oppositely curved and twisted teeth D D. 2nd. The combination of the frame with the frame supports, and two or more tooth beams B, severally secured by elastic connection to the frame, and each provided with the oppositely curved and twisted elastic teeth D D. 3rd. The combination, with the transverse parts of the frame, of the tooth beam B secured to the said frame by an elastic connection, and provided with the oppositely curved and twisted elastic teeth D D. 4th. The combination of the frame with the frame supports, and two or more tooth beams B severally secured by elastic connections to the frame, and each provided with oppositely curved and twisted elastic teeth D D. 6th. In combination with the main frame and the tooth beam B of the harrow described, the spring C applied to connect the two parts named, and adjustable as to the frame and tooth beam, respectively, whereby its rigidity may be varied.

No. 14,772. Improvements in Grain Binders.

(*Perfectionnements aux engerbeuses.*)

Lewis Miller, Akron, Ohio, U.S., 12th, May, 1882; for 5 years.

Claim.—1st. The combination of the non-rotating, but vertically sliding head, around which the cord is wound with the rotating head for catching the cord and winding it about the non-rotating head, and a central stationary bar having a hooked upper end for grasping the strands of cord and drawing them through the loop, and within the non-rotating head to complete the knot. 2nd. The combination of the non-rotating but vertically sliding head with the rotating cord carrying head, the central stationary bar having a hooked upper end, and the cutting and clamping plate within the rotating head. 3rd. The combination of the rotating cord-carrying head, and the cutting and clamping plate having the radial arms or projections, with cutting edges and serrated clamping surfaces, with means for rotating the head, and the pawl for engaging the plate to arrest its rotation while the head continues to rotate. 4th. The combination of the rotating head with the non-rotating head, and the hook bar with vibrating finger for holding the cord in the recess, at the side of the hook of the non-rotating head, while the rotating head rotates. 5th. The combination of the pawl and the sliding bolt articulated thereto, with the bell crank and spring on the pawl shank, and the cam track K₃ K₄ K₅. 6th. The combination, with the heads M N, of the vibratory finger, the crank on its shank and the cam projection for throwing it. 7th. In combination with the heads M N, the bar W having the arm *w* adapted to project over said heads and serve as a support for the strands of cord before the knotting mechanism begins to operate, and means by which it is depressed as such operation progresses. 8th. The combination of the binding arm with the upper compressor having the curved elastic portion, and the long shank guided as described, the lower elastic compressor constructed as described, and the bar W₂ with its actuating mechanism, by which the lower compressor is operated. 9th. The combination, with the cord receptacle and its support, of the arm articulated to its cover, and carrying the tension device and the pivoted arm to which said last mentioned arm is in turn articulated, whereby the stress of the cord between the receptacle and binding arm operates, to hold the cover of the receptacle firmly in place.

No. 14,773. Improvements on Railway Car Springs.

(*Perfectionnements aux ressorts des voitures de chemins de fer.*)

George F. Godley, Philadelphia, Pa., U. S., 13th May, 1882; (Extension of Patent No. 7484.)

No. 14,774. Car Axle Box.

(*Boite à graisse d'essieu de wagon.*)

William W. Whitaker, Gloversville, N. Y., U.S., 13th May, 1882; (Extension of Patent No. 7466.)

No. 14,775. Improvements on Journal Boxes.

(*Perfectionnements aux boîtes à graisse.*)

Charles E. Sampson, (Assignee of Alva Warden,) Ypsilanti, Mich., U.S., 13th May, 1882; for 5 years.

Claim.—1st. The combination, with a journal box A provided with a central recess *a*, and hole *b* extending through the wall of the box, of the pawl B provided with a stem *c* projecting from its back and inserted in the hole in the box. 2nd. In combination with the shaft C having ratchet teeth *d*, one end of the journal box A provided with a recess *a* and pawl B.

No. 14,776. Improvements in Cheese Machines.

(*Perfectionnements aux machines à fromage.*)

William Cooley, Waterbury, Vt., U.S., 15th May, 1882; for 5 years,

Claim.—1st. In a machine for disintegrating and mixing lard with skimmed milk, in the manufacture of cheese, the combination, with or revolving toothed cylinder, of an outer enveloping shell provided with internal longitudinal ribs. 2nd. A revolving cylinder provided, on its exterior vertical surface, with numerous fine points or projecting teeth, cut into the metal of which the same is composed. 3rd. A revolving toothed cylinder provided with recessed heads having tangentially arranged wings or blades. 4th. A cylindrical shell having longitudinal ribs and provided with heads having suitable inlet and outlet tubes formed herein. 5th. The combination, with the outer shell B provided with internal longitudinal ribs B; therein a lower head G having tube *h* and projections *i*, and the upper head J having tube *e*, of the inner revolving cylinder E attached to the shaft D and provided with external toothed surface H, lower head F having central recess *c*, flange *h* and wings *f*, and upper head I having recess *l* and wings *n*.

No. 14,777. Improvements on Sleigh Shoes.

(*Perfectionnements aux sabots des traîneaux.*)

Elijah D. Cannon, Pleasant Valley, Ct., U. S., 15th May, 1882; for 5 years.

Claim.—1st. A hardened steel faced wrought iron sleigh shoe adapted for ready application. 2nd. The sleigh shoe having the groove *a*, in combination with the bolts *b*, adjustable longitudinally in said groove to any desired point.

No. 14,778. Improvements on Car Couplers.

(*Perfectionnements aux accouplages des chars.*)

William Hunter, Wawanosh, Ont., 15th May, 1882; for 5 years.

Claim.—In a double link draw head car coupler, the combination of draw heads A A, coupling pins B B, arms C C, elongated sockets D D, having rubber packings F F, short levers E, controlling pins G G, and double links H H.

No. 14,779. Machine for Making Cotton Bating.

(*Machine à battre le coton.*)

Thomas F. Dann, Saccarappa, Me., U. S., 15th May, 1882; for 5 years.

Claim.—1st. The combination, with the sliding plate W, the pressure rollers C C D D, the shaft I and the knife *e*, of the sliding clutch Z, the rotating clutch *o* having radial arm *c* and the hinged bar *d* and mechanism for connecting and operating all of said parts, whereby the paper will be cut a little later than the bating. 2nd. The combination, with the rack bars *r* having adjustable stop *s*, the sliding plate W and mechanism for operating the same, the pressure rollers and mechanism for throwing them into and out of gear, of the lever *z* having a longitudinal slot *z* in its longer arm, the bent lever *l* having weight *2* at one end, and a shoulder *1* at the other, and the connecting bar *4* whereby the pressure rollers are stopped automatically when the roll of bating has reached the desired size. 3rd. The combination, with the lever *z* having longitudinal slot, the bent lever *l* having a shoulder on one end and a weight on the other, the rack bars *r*, the gear wheels *s* and the shaft *t* having pulley *u*, of the break strap *v*, the brake bar *x* having crank arm and the connecting bar *y*, whereby the rack bars *r* are released when the pressure rollers are thrown out of gear.

No. 14,780. Improvements on Car Couplings.

(*Perfectionnements aux accouplages des chars.*)

William E. Thompson, Pinckney, Mich., U. S., 15th May, 1882; for 5 years.

Claim.—1st. A draw-bar B having an opening of the same size throughout, for receiving two separate hollow sections *e f* forming three chambers *b c d* of different sizes adapted to receive the rod C, spring D and head E, in combination with the hollow sections *e f*, rod C, spring D and head E. 2nd. In combination with the head E plate *g*, secured in the draw-bar by said sections *e f* and forming a stop for the end of the spring D and limiting the outward movement of the rod C, and head *e*.

No. 14,781. Improvements on Hay Tedders and Rakes.

(*Perfectionnements aux faucheuses et aux râteliers de foin.*)

Henry Hitchcock, Lyons, Mich., U.S., 15th May, 1882; for 5 years,

Claim.—1st. In revolving hay rakes and tedders, the arm J for securing the tedder or rake teeth to the tedder or rake head. 2nd. In a revolving tedder or hay rake, and in combination with the frame A thereof, the frame L and shaft K provided with the segment ratchet N, hitch lever O and chain P. 3rd. In a revolving hay rake or tedder, the frame of which is mounted upon traction wheels carrying internal gears G, and in combination therewith, the clutch pinion *a* automatically operated by a lever *d*, which in turn is actuated by an arm projecting from the rake or tedder shaft. 4th. The combination of the frame A, plates B, wheels D, internal gear G, pinion *a* and shaft H carrying teeth I.

No. 14,782. Improvements on Fifth Wheels for Vehicles.

(*Perfectionnements aux ronds d'avant-train des voitures.*)

George Dynes, Inkersoll, Ont., (Assignee of John J. Cobb, Grand Rapids, Mich., U.S.,) 15th May, 1882; for 5 years.

Claim.—1st. In a fifth-wheel in running gears for vehicles, risers B B resting on plate A and supporting clip ties D D. 2nd. In running gear for wheeled vehicles, the combination, in a fifth-wheel, of clip ties D D and risers B B attached to, and supported by plate A.

No. 14,783. Improvements in Moccasins.*(Perfectionnements aux mocassins.)*

Guillaume Boivin, Montreal, Que., 16th May, 1882; (Extension of Patent No. 7507.)

No. 14,784. Improvements on Gold Separators.*(Perfectionnements aux séparateurs de l'or.)*

Erastus S. Bennett, Denver, Col., U.S., 16th May, 1882; for 5 years.

Claim.—1st. In treating auriferous earths and other material, by means of a revolving grate partially submerged in a tank supplied with water by submerged jets. 2nd. The combination of a revolving grate partially submerged in a tank supplied with water by submerged jets, and a tailing elevator. 3rd. The combination of a feeding device having interior flights, a revolving grate partially submerged with water by submerged jets. 4th. The combination of a feeding device, a revolving grate partially submerged in a tank supplied with water by submerged jets, the tank being lined with corrugated amalgam plates, and a tailing tank and tailing wheel.

No. 14,785. Improvements on Ox Shoes.*(Perfectionnement aux fers à bœuf.)*

Albert Sanford, Oshkosh, Wis., U.S., 16th May, 1882; for 5 years.

Claim.—1st. In an ox shoe provided with toe and heel calks and having one or more intermediate calks extending laterally across its body, all said calks being broader or laterally wider at their outer portions than elsewhere. 2nd. In an ox shoe provided with toe and heel calks and having one or more intermediate notch calks, all said calks being broader or laterally wider at their outer portions than elsewhere.

No. 14,786. Improvements in Mortar and Plaster.*(Perfectionnements dans le mortier et le plâtre.)*

William Arrouquier and Thomas Barrett, Worcester, Mass., U.S., 16th May, 1882; for 15 years.

Claim.—Mortar or plaster composed of powdered soapstone, lime putty, mineral coal, alum and saccharine acid.

No. 14,787. Improvement on Car Couplings.*(Perfectionnements aux accouplages des chars.)*

Austin Leyden, Atlanta, Ga., U.S., 16th May, 1882; for 5 years.

Claim.—1st. In a car coupling, the lever F, in combination with the coupling pin A and the rod or shaft C provided with the cam or eccentric E. 2nd. The stop G placed in the throat of the bumper and adapted to tip forward to support the coupling pin. 3rd. The connecting link B hinged to the draw-head D. 4th. The hinged connecting link B formed with the extensions *a*, in combination with the shaft C provided with the cams E. 5th. The combination, with the hinged link B, of the bumper D formed with the projection H. 6th. The shaft or rod C provided with the cams E. 7th. The shaft or rod C provided with the coupling pin A and hinged link B. 7th. The shaft or rod C provided with the cams E. 8th. The combination, with the lever F, pin A and hinged link B formed with the extensions *aa*. 8th. The coupling pin A held in the casing A' of the bumper. 9th. The combination, with the coupling pin A, of the pawl L for locking the pin down. 10th. The combination, with the pawl L, of the coupling pin A and the lever F. 11th. The bumper D formed with the housing A', for holding the coupling pin A permanently attached to the bumper, and in position for entering the connecting link.

No. 14,788. Improvement on Railway Brakes.*(Perfectionnement des freins de chemins de fer.)*

George O. S. Conway, Stonefield, James Cooper and Frederick Fairman, Montreal, Que., 17th May, 1882; for 5 years.

Claim.—1st. In a railway brake, the combination of a swinging oscillating frame and lever pivoted thereto, operating to gripe the axle when so desired between them and thereby wind up the brake chains and put on the brakes. 2nd. The combination of a swinging frame, a curved lever carrying a shoe, a drum and spindle carrier in frame, and a lever pivoted in the upper part of the swinging frame worked by means of a cord passing through it, but unattached thereto, and operating to close the lever and frame on the axle and thereby put on the brakes. 3rd. The combination, with a rod, either vertical or horizontal, operating when rotated to cant the lever E to which it is connected, and thereby apply the brake mechanism, of a cross-head mounted on end of said shaft and moved in either direction by a continuous cord passing through same. 4th. The continuous rod P operating when rotated upon lever E.

No. 14,789. Improvements on Car Couplers.*(Perfectionnements aux accouplages des chars.)*

George O. S. Conway, Stonefield, James Cooper and Frederick Fairman, Montreal, Que., 17th May, 1882; for 5 years.

Claim.—1st. A car coupler having an oval internal chamber in which is contained a ball dropping automatically into place, on the entry of the link, so as to hold it in position. 2nd. The combination, with the chamber A, and ball C contained therein of recess A'. 3rd. The combination, with the ball C contained in chamber A, provided with recess G, of arm E mounted on pivot spindle D.

No. 14,790. Improvements in Grave Vaults.*(Perfectionnements dans les caveaux funèbres.)*

George W. Boyd, Marietta, Ga., U.S., 17th May, 1882; for 5 years.

Claim.—1st. A metal burial vault, wherein the top is locked to the

bottom and the bottom is strengthened and made burglar proof by supporting angle irons. 2nd. A metal burial vault, wherein the bottom of the same is strengthened and made burglar proof by cast iron corner pieces.

No. 14,791. Improvements in the Manufacture of Fur Coated Fabrics.*(Perfectionnements dans la fabrication des tissus fourrés.)*

Ellen M. Doubleday, New York, (Assignee of Henry Kellogg, New Haven, Ct.,) U.S., 17th May, 1882; for 5 years.

Claim.—1st. The art of manufacturing fur-faced fabrics, the same consisting in subjecting the material, after the fur has been applied to the fabric, to the combined pressing and rolling action of a rotating surface, whereby the fur is stuck to the fabric. 2nd. The art of scalding fur-faced fabrics, the same consisting in subjecting the material after the fur has been stuck to the fabric to the pressing and rolling action of a rotating surface, while the material is in a wet and heated condition. 3rd. The art of making fur-faced fabrics which consists in applying to a continuous sheet of feltable fabric, a coating of fur and a layer of non-feltable material, and winding the same upon a roll. 4th. As a new article of manufacture, cloth formed in a continuous sheet composed in whole or in part of feltable fibre, and having one surface coated with fur. 5th. As a new article of manufacture, cloth formed in a continuous sheet composed in whole or in part of feltable fibre, and having both sides coated with fur.

No. 14,792. Improvements on Moulds for Casting Car Wheels.*(Perfectionnements aux moules pour couler les roues des chars.)*

James Thierry, Detroit Mich., U.S., 17th May, 1882; for 5 years.

Claim.—1st. The chill B bolted rigidly to the cope E and provided with steady pins *a* to enter holes in the lower section, in combination with said cope and lower section, the flanged collar *c*, the core C and the basin F, the cope being provided with a flange to fit into the basin and with a tapering recess to receive the upper bevelled end of the core. 2nd. A cope E provided with the projecting portion O to enter a recess in the basin F, in combination with said basin, both the cope and the basin being provided with conical co-incident openings, having their smallest openings at the adjoining faces of the cope and basin.

No. 14,793. Improvements in Printing Machines.*(Perfectionnements aux machines à imprimer.)*

Henry P. Feister, Philadelphia, Pa., U.S., 17th May, 1882; for 5 years.

Claim.—1st. A printing machine to print from a continuous roll of paper, an endless chain of type carriages, arranged to pass before inking and impression cylinders. 2nd. An endless chain of type carriages, in combination with one or more inking cylinders and two impression cylinders, said impression cylinders being adapted to print from every alternate type carriage, one of said carriages printing from the type omitted by the other. 3rd. An endless chain of type carriages, in combination with nippers arranged upon said carriages and adapted to hold the sheet of paper, inking devices to ink the type, two impression cylinders arranged to print from every alternate type carriage, and mechanism to cause said nippers to be oscillated in passing from one impression cylinder to the other, for the purpose of laying the sheet upon the type carriages immediately preceding. 4th. A series of type carriages arranged to travel under impression cylinders, in combination with mechanism to remove the sheet after receiving an impression from the type on one carriage, reverse the same and lay it upon the type of the next adjacent carriage, thereby causing said sheet to be printed upon both sides. 5th. In a printing machine, a feeding device adapted to feed given lengths of paper from a continuous roll, a cutter or knife to cut said roll of paper into sheets, an endless chain of type carriages provided with nippers adapted to catch and hold the paper, and inking device to ink the type on said carriages, and two impression cylinders arranged to print from every alternate type carriage, in combination with a cam to actuate said nippers, to reverse and transfer the sheet to the next adjacent type carriage after passing under one impression cylinder, and before it passes to the next, receiving bands or tapes, a pasting or fastening device to paste or fasten the sheet down in the middle, a fly frame, a receiving table and folding and trimming mechanism, said apparatus working to print and bind a book from a continuous roll of paper. 6th. The feeding devices which consist of the notched disks C, rolling in contact as described, in combination with their shafts and means to adjust and secure said disks side by side in pairs. 7th. In a printing machine, the feeding mechanism which consists of shafts *c* geared together carrying disks C, endless roll of paper B and feeding disks B, said mechanism working to keep a slack in the paper between the roll B, and disks C. 8th. In a printing machine, the combination of the rollers *bb*, shaft *c* carrying disk C, gear wheels C', cams C₂, arms C₄, rods D₁ D₂, knife D, and rollers D₂ D₃ and fingers E. 9th. The carriages F hinged together at *f* and running upon a track F₂ by wheels F₁, and provided with means to secure the type form in place, in combination with nippers H H₁ secured respectively to pinion *h*₁ *h*₂, segment rack *k*₁ and cams *k*₂, to actuate said segment racks. 10th. A type carriage F provided with nippers H H₁ secured to shafts H₂ H₃ pivoted at one end of said carriage, in combination with mechanism to operate said nippers during the movement of said carriage. 11th. The combination of the endless chain of carriages F carrying nippers H H₁ pivoted at one end and rack F₄, inking devices to ink the type on said carriages, two impression cylinders G G₁ having impression surfaces *g*, gears G₅ and adapted to print from every alternate carriage, fingers E, receiving tapes *i*, cams H₅ and intermediate mechanism to actuate the nippers to the end that the nippers of every alternate carriage F shall open and catch the paper from fingers E, lay it upon the carriage and, after passing under cylinder G, shall reverse the sheet and lay it upon the next adjacent carriage, then pass under cylinder G₁ and open slightly to allow the sheet to be

run off quickly by the tapes *i*. 12th. The combination of the endless chain of carriages *F* having racks *F*₁, cylinders *G* *G*₁ having teeth *G*₂, and intermediate gear wheel *G*₃. 13th. The receiving tapes *i*, in combination with wheels *L*, shaft *L*₁, arms *L*₂ to allow the passage of the nippers between said tapes. 14th. The endless chain of type carriages and their nippers, in combination with tapes *i*, wheels *L*, shafts *L*₁, arms *L*₂ pasting or fastening wheel *J*, fly frame *K*, receiving table *M*, rollers *R*, mechanism to reciprocate said table and folding and trimming mechanism. 15th. In a combined printing and binding machine, the combination of the reciprocating receiving table *M* with rollers *R*, oblique table *T* with slot *f*, folding knife *P*, trimming rotary cutters *O* *P*₁ and mechanism to reciprocate the table and folding knife at given intervals. 16th. In a printing machine, the endless chain of type carriages *F*, in combination with the can *G*₆, rod *K*₂, crank *K*₁, pawl *K*₃, ratchet wheel *L*, cams *l*, rollers *m*, receiving table *M*, frame *A*, spring *m*₂ and rollers *R*.

No. 14,794. Improvement in Grain Binders.

(*Perfectionnement des engerbeuses.*)

Peter Wallace, London, Ont., 17th May, 1882; for 5 years.

Claim.—1st. The combination of the traction wheel *A*, extension hub *A*₂, bevelled teeth *B*, bearing *A*₄, coupling *A*₆, feather *A*₅, groove *A*₇, shaft *A*₁, coil spring *B*₁, lever *B*₂, lever *B*₃ and rod *B*₄. 2nd. The combination of the bevelled cog pinion *C*, bevelled cog wheel *C*₁, cog wheels *C*₂, *C*₃, bearing *C*₅, studs *C*₂, *C*₃, friction rollers *D* *D*₁, chain wheel *D*₄, stud *G*, flanges *D*₂, *D*₃, foot *D*₅, arm *D*₆, knuckle joint *D*₇, springs *F*₈, *F*₉, projection *F*₃, lever *F*₂, rod *F*₅, lever *F*₆, standard *F*₄, coil spring *F*₇, friction roller *E*₄, projection *E*₂, curved guide *F*, standard *F*₁, coil spring *E*₃, spool *D*₈, spindle *E*₁, nut *E*₄ and holes *F*₅ in arm *D*₆. 3rd. The combination of the endless chain *G*₁, chain wheel *D*₄, chain pinions *G*₂, shaft *G*₃, chain pinions *G*₅, endless chain *G*₆, guide strips *G*₇, guide *H*, fingers *H*₁, levers *H*₂, studs *H*₃, coil springs *H*₅ and bearings *G*₄. 4th. The combination of the bevelled cog pinion *H*₆, bevelled cog wheel *H*₇, shaft *I*, bearings *I*₁, *I*₂, cog segment *I*₄, cog wheel *I*₅, shaft *I*₆, bearings *I*₇, *I*₈, automatic cog wheel *J*, tube bearing *J*₂, knot tyer *J*₃, recesses *K*₆, *K*₇, pin *J*₄, lever *J*₅, pivot *J*₆, bearing *J*₇, flange *K*, rods *K*₁, *K*₂, grooves *K*₃, hooks *K*₄, *K*₅, coil spring *L*, lever *L*₁, bearing *A*₃, support *L*₂, coil spring *L*₄, pin *L*₇, pin *N*, lever *N*₁, flange *N*₂, rods *N*₃, *N*₄, hooks *N*₅, *N*₆ coiled spring *N*₇, bolt *O*, notch *o*₂, flange wheel *o*₁, coil spring *o*₃, brace *o*₅, standards *o*₄, *o*₆, *o*₇, rod *P*, nut *P*₄, shoulder *P*₂, double hook *P*₅, incline *P*₆, bevelled end *P*₇, journal *P*₁, square groove cutter and guide *R*, notches *L*₅, notch *R*₁, face of flange wheel *R*₂, flange *R*₃, dog *R*₄, rod *R*₅, cam *R*₆, coil spring *R*₇, shoulder *S*, bearings *S*₁ and projection *S*₂. 5th. The combination of the frame *H*₁, traction wheel *S*₃, flange *S*₅, stud *S*₄, guard *S*₆, cover *S*₇ and table *E*₆.

No. 14,795. Improvements on Harvesters.

(*Perfectionnements aux moissonneuses.*)

David Patterson, Chatham, Ont., 17th May, 1882; for 5 years.

Claim.—1st. The supplemental finger bar, the fingers of which project beyond the fingers of the guard below it, and designed to run upon the ground in advance of the cutter-bar. 2nd. A supplemental finger-bar attachment to harvesters, such fingers being double concave upon their upper face, in cross section, and convex upon their lower face lengthwise of the finger, and terminating in a vertically flat toe at their outer ends.

No. 14,796. Improvements in Mittens.

(*Perfectionnements dans les mitaines.*)

John Nelson, Ralph Emerson and William A. Talcott, Rockford, Ill., U.S., 17th May, 1882; for 15 years.

Claim.—1st. The improved method of knitting mittens, by commencing the knitting at or near the point at which the narrowing of the end portion is commenced, and by a backward and forward knitting process and narrowing to produce one side, and widening to produce the other side, then knitting the straight portion, then dropping a number of the needles, retaining only a sufficient number to produce the thumb and by a backward and forward knitting process, produce the straight part of one side of the thumb, then narrowing and then widening to produce the opposite side of the rounded or tapered end of the thumb, and then knitting the straight portion of the other side of the thumb, then narrowing to contract that part of the mitten adjacent to the wristlet, and then knitting the wristlet. 2nd. As a new article of manufacture, the described mitten formed of a knit fabric and made complete, except at the sides of the thumb which are closed by seams.

No. 14,797. Improvements in Saw Swages.

(*Perfectionnements aux rainettes des scies.*)

Nelson Johnson, Jasper, N. Y., U. S., 17th May, 1882, for 15 years.

Claim.—1st. A stock *A* with jaws *a* at forming a cylindrical arc of more than one hundred and eighty degrees, containing a swage-pin *B* which is driven outward in contact with the extremities of the arc by the key *C*. 2nd. The combination of a stock *A*, reversible swage-pin *B* and key *C*. 3rd. The combination of the stock *A*, swage-pin *B* and band *F*. 4th. The combination of the stock *A*, swage-pin *B* and button *D*.

No. 14,798. Machine for cutting leather on Sewing Machines. (*Machine pour couper le cuir sur les machines à coudre.*)

Joseph I. Pellerin and Hector Pellerin, Montreal, Que., 17th May, 1882. (Extension of patent No. 7510.)

No. 14,799. Shoe sole buffer. (*Machine à polir les semelles.*)

Freeman Winslow, Salem, Mass., U.S., 17th May, 1882. (Extension of patent No. 7484.)

No. 14,800. Improvement in plastic material. (*Perfectionnement des matieres plastiques.*)

Melvin B. Church, Grand Rapids, Mich., U.S., 22nd May, 1882; for 5 years.

Claim.—A compound of pulverized calcined gypsum, glue and sulphate of zinc, or its equivalent.

No. 14,801. Improvements on screws. (*Perfectionnements aux vis.*)

Charles D. Rogers, Providence, R.I., U.S., 22nd May, 1882; for 15 years.

Claim.—As an improved article of manufacture, a screw having a steel core and a surrounding iron shell welded to the core.

No. 14,802. Improvements on car-couplers. (*Perfectionnements aux accouplages des chars.*)

Henry Mitchell, Boston, Mass., U.S., 22nd May, 1882; for 5 years.

Claim.—The draw-bar heads *A* *B*, links *E*, hooks *G*, pulley *H* and chain *K*.

No. 14,803. Improvements in the manufacture of baking powder. (*Perfectionnements dans la fabrication des poudres à pâte.*)

Adolph Giesecke, Buffalo, N. Y., U. S., 22nd May, 1882; for 5 years.

Claim.—The combination of phosphate of soda, muriatic acid, whereby a dry salt is produced for the purposes described. 2nd. The combination of said acid salt with the usual or proper proportion of bicarbonate of soda.

No. 14,804. Improvements on Pails. (*Perfectionnements aux seaux.*)

Cyrus Kinney, Windsor, Ont., 22nd May, 1882; for 5 years.

Claim.—1st. A cylindrical-shaped pail, the ends of which are provided with non-removable heads, with a receiving mouth in the wall of the cylinder, a discharging spout below the same, and provided with feet and a bail. 2nd. A pail provided with a receiving mouth *a* and a flange *D*, adapted to receive the removable straining tray *E*.

No. 14,805. Improvements in the process for refining sugar. (*Perfectionnements dans les procédés pour raffiner le sucre.*)

George A. Drummond, Montreal, Que., 22nd May, 1882; for 5 years.

Claim.—1st. The art or process of clarifying syrup, or solution of sugar, by forcing it up through a suitable medium contained in a vessel, which, at the desired point of the operation, is inverted, so that the syrup remaining therein filtrates downwards, but in the original direction and to the original outlet. 2nd. The art or process of clarifying any liquid and cleansing the clarifying medium by a liquid of less density, by forcing the liquid to be purified up through the medium, reversing, when desired, the vessel containing the same, allowing the remainder to filtrate downwards and simultaneously letting in the cleansing fluid on top.

No. 14,806. Improvements in automatic Railway Brakes. (*Perfectionnements aux freins automatiques des chemins de fer.*)

John F. Mallinckrodt, Denver, Col., U. S., 22nd May, 1882; for 5 years.

Claim.—The automatic-brake mechanism composed of the truck frame *H* *I* *J* *K*, having wheels *M* *N* and cross-beams *B* *B*₁, movable centre consisting of the centre plate *C*, transom *T*, spring *S*₁ *S*₂ and spring board *S*₃, hangers *E* *E*₁, levers *W* *F* *P* *W* *F* *P*₁, provided respectively with the brake-shoes *S* and *S*₁, connecting-rod *A*, swallow fork or bifurcated link *L*, lever *L*₁ and rod *R*.

No. 14,807. Improvements on lighting mechanism for gas lamps. (*Perfectionnements aux appareils pour allumer les lampes à gaz.*)

Israel M. Rose, Norwalk, Ct., U. S., 22nd May, 1882; for 5 years.

Claim.—1st. The combination of a rest, over which a tape provided with pellets of ignitable material may be drawn or moved, and a stationary igniter adjacent to the rest, and adapted to bear upon the tape as the latter is drawn or moved over the rest, and serving to scratch and ignite the pellets as they move past it. 2nd. The combination, with a rest, over which a tape provided with pellets of ignitable material may be drawn or moved, of an elastic stationary igniter adapted to be deflected by the pellets upon said tape as in their movement they come in contact with it, and on attaining a certain tension to spring back and ignite them. 3rd. The combination, with a lamp burner, of a rest, over which a tape provided with pellets of ignitable material may be drawn, a standard or frame supporting said rest, and projecting upward within the cone of the burner, but isolated from, and independent of the wick-tube, and an igniter adjacent to said rest, and past which said tape is drawn or moved. 4th. The combination, with a burner, of a rest over which a tape provided with pellets of ignitable material may be drawn, a standard or frame supporting said rest, projecting upward within the cone, and provided with a catch for holding said cone down, and an igniter adjacent to the tip of the wick-tube and past which said tube is drawn or moved. 5th. The combination, with a burner, of a rest adjacent to the tip of the wick-tube over which a tape provided

with pellets of ignitable material may be drawn, an igniter adjacent to said rest, a magazine attached to the exterior of the burner for containing a roll of tape, and a feed spindle or reel for drawing said tape from said magazine over said rest and rolling up the spent tape. 6th. The improvement in tapes for lamp lighters, consisting of the strip of fabric having the percussion pellets arranged upon its surface. 7th. The fabric tape provided with a backing of paper and having percussion pellets arranged and secured upon the exposed surface of the fabric.

No. 14,808. Machine for boring felloes and cutting tenons or spokes. (Machine pour percer les jantes et tailler les rais ou les tenons.)

Henry J. Miller, Goshen, N. Y., U. S., 22nd May, 1882; for 5 years.

Claim.—1st. The combination of the grooved horizontal sliding boring spindle C, with its bevelled pinion and gear, and the hand crank J and bearings B and H and the balance wheel F, the feed lever N, the clutch plate O, the spindle head D, the collar M, the handle T, the arm X and the rope V, and pulleys W with the weight U and the pawl Y, and pin Z. 2nd. The combination of the spindle C, its bearings B and bevelled pinion and gear E and J, and the hand crank J, the head D, feed lever N and rope V and pulleys W, and the weight U with the felloe, clamp table a, the wedge block h, the base b, the bolt d, the lever j, the sliding bolt k and the pawl y and pin z. 3rd. The combination of the hub clamp p', its table q and bolt s, and wedges u u and the bolt v, the spoke clamp p, its screw-nuts t t, and lever w, with the spindle C, the pinion and gear E and J, the hand crank J, the collar M, the balance wheel F and the feed lever N, the head D, the clutch plate O and the pawl Y, and pin Z.

No. 14,809. Improvements on Printing Presses. (Perfectionnements aux presses d'imprimerie.)

Enoch Prouty, Beloit, Wis., U. S., 22nd May, 1882; for 15 years.

Claim.—1st. The combination, with the cylinder and cylinder shaft, of the lug N, the reciprocating frame supporting the lug, and provided with springs s, the slotted crank T, the rock shaft W and the grippers. 2nd. The combination of the rails B provided with the projections and grooves a b, the carriages c provided with friction rollers running in the overhanging grooves b, the tubular sockets d bearing against the flanges of the rails at the points e, and the adjustable bearing posts f. 3rd. The combination, with the type bed, of the rock-shafts m, the adjustable screw-posts o, the slotted log p and the spring buffer rods n r. 4th. The combination, with the cylinder, of the bars r and pt, the blanket securing brads and the screws x and z. 5th. The combination, with the cylinder and its axis, of the adjustable bar b2, its brads and the screws e2 directly entering the axis. 6th. The combination of the adjustable and removable lug e2 with the rail B and the lug N upon the cylinder, whereby the printing and delivering of short sheets of variable length is provided for. 7th. The combination, with the cylinder, the printing bed and the rails, of the receptacle between the ends of the rails and the table or bottom K2 for receiving the printed sheets directly from the cylinder.

No. 14,810. Improvements in road scrapers. (Perfectionnements aux boueurs des chemins.)

John D. Smith and Francis M. Strong, Vergennes, Vt., U. S., 22nd May, 1882; for 5 years.

Claim.—1st. A road scraper constructed with a long platform draft frame A adapted to be loaded with added weight, having a scraper B secured diagonally across its front end, and its rear end provided with a blade F, which may be adjusted to penetrate the ground, as it advances, and resist side draft. 2nd. A road scraper B rigidly secured diagonally across the front end of a platform or draft frame A, combined with a sharp edged supporting wheel D, at the rear end of said frame to prevent side draft, and a driver's seat placed over said wheel, whereby the same will be loaded by the driver's weight. 3rd. A road scraper B, rigidly secured diagonally across the front end of a platform or draft frame A, combined with sharp edged supporting wheel D, at the rear end of said frame, set slightly oblique to the line of progression, and a supplemental blade F so as to counteract the side draft. 4th. A road scraper B, set diagonally across a draft frame A, adapted to be loaded with added weight, combined with a sharp edged supporting wheel D, and driver's seat at the rear end of said draft frame, and a draft tongue G at the front end of said frame, set more or less oblique to the line of progression, to counteract side draft. 5th. A road scraper B, set diagonally across a draft frame A, having a supporting wheel at its rear end, combined with lever slides H H, whereby the scraper B may be lifted from the ground when desired.

No. 14,811. Improvements in Ore Concentrators and Separators. (Perfectionnements aux concentrateurs et séparateurs des minerais.)

Elijah Warne, Easton, Pa., U. S., 22nd May, 1882; for 5 years.

Claim.—1st. In machinery for concentrating and separating ores and other material by the wet process, a sluice provided at intervals in its bottom with openings or pockets adjustable in size so that they may be made wider or narrower in the direction of the length of the sluice. 2nd. A sluice provided with openings or pockets adjustable in size and having a bottom provided with sections adjustable so that they may be tilted or inclined in order to regulate or modify the current of water passing through the sluice over said openings. 3rd. The combination of a sluice provided with openings or pockets adjustable in size, and with bottom sections adapted to be variably tilted or inclined, in combination with one or more spouts or nozzles for supplying water under head or pressure to the sluice, and means for regulating the water supply. 4th. The sluice provided with bottom openings or pockets, in combination with the water containing re-

ceptacles communicating with said openings or pockets, and conveyed in said receptacles and operating to raise and carry off from the receptacle the materials deposited therein through the openings or pockets. 5th. The inclined mixing and separating trough, and conveyors arranged in the same, in combination with the sluice provided with bottom openings or pockets adjustable in size, and arranged at the upper or higher end of said trough to receive from the same the heavier material which settles at the bottom of the trough. 6th. The combination of the separating screen B, the inclined mixing and separating trough C, the conveyor C', the sluice D, and means for supplying said sluice and trough with water. 7th. The inclined mixing trough and conveyor contained in the same, in combination with the two sluices D X and their adjuncts, and means for furnishing independent water supply to the said trough and sluices, these parts being arranged for joint operation. 8th. The inclined mixing and separating trough provided at its lower end with a vertically movable and adjustable gate, in combination with the conveyor contained in said trough, and the two sluices D X. 9th. The combination of the sluice X, the receptacle E and conveyor E' with the water supply pipe b and the overflow pipe c. 10th. The box I in combination with the overflow pipe d, the pipe c and the pipe or pipe f. 11th. The combination, of the sluice X, the receptacle E and conveyor E', with the box I and the pipes b c d f. 12th. The combination, with the sluice of the skimmer thither adjustable or not, and the filter.

No. 14,812. Improvements in ore Separators and Concentrators. (Perfectionnements aux séparateurs et concentrateurs des minerais.)

Elijah Warne, Easton, Pa., U. S., 22nd May, 1882; for 5 years.

Claim.—1st. Carrying and forcing the entire material in granular form by means of an air blast through a nozzle, whence it is blown over a series of separate openings or pockets. 2nd. In machinery for separating or concentrating ores and other materials, the combination of the blower or air forcing apparatus with the air duct leading therefrom, and the ore feeding device communicating with and opening into said air duct at a point intermediate between its nozzle or discharging end and the blower. 3rd. In machinery for separating or concentrating ores and other materials, of a blower or air forcing apparatus, an air duct leading therefrom into an exhaust chamber, an ore feed-device communicating with and opening into said air duct at a point intermediate between its nozzle or discharge end and the blower, and a series of separate ore receiving pockets, arranged on or in the floor of the exhaust chamber. 4th. The feed hopper and rotating feed worm therein, in combination with the blower, the air duct and its discharge nozzle and the separate ore receiving pockets, ore openings under the arrangement and for operation as described. 5th. The combination of the air and ore discharge nozzle, with the exhaust chamber, provided with openings for admission of air and means for closing the same more or less as required, and the ore receiving pockets formed on or in the floor of said chamber and adjustable in width. 6th. The combination of the blower, the air duct and its discharge nozzle, the ore feed device, the exhaust chamber, the ore receiving pockets adjustable in width, and means whereby the communication of said blower and exhaust chamber with the surrounding air can be varied at pleasure.

No. 14,813. Improvements on Motors. (Perfectionnements aux moteurs.)

John Sutliff, Sr., Huntsville, Mo., U. S., 22nd May, 1882; for 5 years.

Claim.—1st. The combination, with the tubular lever A pivoted on the edge of a water tank, of devices for automatically and alternatively filling this lever and its bulb with air and then exhausting the air. 2nd. The combination, with the water tank B, of the tubular lever A, terminatin g in a bulb C of the connecting rods E J, the wheel F, the pivoted box K, the weight L, the bellows M and the flexible tube N.

No. 14,814. Improvements on Steam Generators and Feed Water Heaters. (Perfectionnements aux générateurs de vapeur et aux réchauffeurs d'alimentation.)

George H. Watson, St. Louis, Mo., U. S., 22nd May, 1882; for 5 years.

Claim.—1st. The combination, with one or more steam boilers, of a pipe or pipes F for heating and circulating water, the boiler connections H and I having suitable valves, and the feed pipe D having check valve a and hand valve b. 2nd. The combination, with one or more steam boilers, of the pipe or pipes F, connections G G', the latter having valves K, the boiler connections H having valves c, connections J having valves e f, mud drum E arranged beneath the lower ends of the pipes or connections G' and provided with valves i i, and the feed pipe D communicating with the pipes F and having valves a b. 3rd. The combination, with a steam boiler, of the pipes F, having plugs or caps m. 5th. The combination of the pipe or pipes F with of the transverse connections F' F2. 5th. The combination of the pipe or pipes F and connections having valves g g', the pipe I having valves e f, and the feed pipe D having valves a b. 6th. The combination of the boilers A, furnace B, fire front C, pipes F having connections G G' K provided with suitable valves, the boiler connections H I having suitable valves, the mud drum E arranged beneath the lower ends of the connections C' and having valves i i, and the feed pipe D provided with valves a b.

No. 14,815. Improvements in rotatory engines. (Perfectionnements aux machines rotatoires.)

Richard Hodson, London, Eng., 22nd May, 1882; for 5 years.

Claim.—1st. In combination with the cylinder of a rotary engine divided up in compartments, of a pair of abutment valves to act upon the divided rotary piston, a double set of induction passages

controlled by an oscillation valve capable of receiving an endway motion on its seat, and a plug cock actuated by the reversing gear, which brings the induction passages alternately into communication with the exhaust passage, when the direction of rotation is required to be reversed. 2nd. In combination with the reversing valve which has an oscillating, and is capable of receiving an endway motion of a second oscillating valve, forming the seat for the reversing valve, and controlling the steam ports, for the purpose of cutting off the steam at any required part of the stroke.

No. 14,816. Improvements on Grinding Mills. (*Perfectionnements aux machines à triturer.*)

John Elliott, London, Ont., (assignee of George K. Smith, Freeport, Ill., U.S.) 22nd May, 1882; for 5 years.

Claim.—1st. A bull wheel B having a central opening for the reception of the grinding burrs, in combination with a pair of grinding burrs, one stationary and one movable, arranged in said central opening, and suitable gearing for imparting the motion of the bull-wheel to said movable burr. 2nd. A bull-wheel having its shaft centrally chambered for the reception of the grinding burrs of the mill, in combination with a pair of grinding-burrs, one stationary and one movable, arranged in said central chamber, and suitable gearing for communicating the motion of the bull-wheel to said movable burr. 3rd. The combination of a centrally chambered bull-wheel and a pair of grinding burrs, one stationary and one movable, arranged in said central chamber, with suitable gearing connecting said bull-wheel and movable burr, and so arranged as to drive said burr at a speed different from that of the bull-wheel. 4th. The combination of the frame A, plate N, bull-wheel B and covering plate M, so formed as to hold said bull-wheel in its bearing, and at the same time form the upper bearing of the spindle of the movable grinding burr, of the mill. 5th. The combination of the plate N and yoke G thereto attached, the covering-plate M and cross bar H, and stationary burr K thereto attached, the spindle F having bearings in yoke G, and cross bar H, the movable grinding burr L and the regulating device consisting of rod I and hand wheel W. 6th. The combination of the frame A, plate N, bull-wheel B, covering-plate M, spur wheels E D E, spindle T and grinding burrs K L.

No. 14,817. Improvements in the Process for producing a perfumed caustic soda. (*Perfectionnements dans le procédé pour produire la soude caustique aromatisée.*)

George T. Lewis, Philadelphia, Pa., U. S., 23rd May, 1882; for 5 years.

Claim.—As a new article of manufacture, perfumed granulated or pulverized caustic soda possessing the qualities and characteristics specified.

No. 14,818. Improvements in Bricks. (*Perfectionnements dans les briques.*)

Joseph A. Dupuis, Montreal, Que., 23rd May, 1882; for 5 years.

Claim.—1st. A brick or building block for the construction of walls, columns, piers, etc., having inclined bearing surfaces and adapted for use as described, whereby the structure is securely bound and lateral displacement prevented. 2nd. A wall, column, or pier, composed, in whole or in part, of brick or blocks, having inclined bearing surfaces.

No. 14,819. Improvements on Row-Locks. (*Perfectionnements aux toletières.*)

Samuel Irwin, Lindsay, Ont., 23rd May, 1882; for 5 years.

Claim.—1st. The toothed segments C C₂ having fulcrum hubs of greater lengths than the width of these teeth, in combination with the fulcrum pins, and the fulcrum box cast in one piece with posts c c and arranged with a bearing against the upper edge of the teeth of the segments, and out of contact with the lower edge of the same. 2nd. The gunwale plate f having lugs e e₁, one of which is open-slotted and provided with spring-slide g.

No. 14,820. Improvements on Bottle 'Stoppers. (*Perfectionnements aux bouchons des bouteilles.*)

Frederick Mill and Henry L. Becker, (assignees of Rufus F. Osgood,) Rochester, N. Y., U. S., 23rd May, 1882; for 5 years.

Claim.—1st. The combination of a stopper cap having an elastic stopper, with a rocking plate pivoted to the top of the cap and provided with an eccentric slot, and a bail pivoted to a neck wire and passing through the eccentric slot. 2nd. The combination, with the stopper cap and bail, of a rocking plate pivoted to the cap, and having a slot eccentric with the pivot through which slot the bail passes, said rocking plate tilting past the dead centre, as the bail is thrown in one direction and the other, and serving to tighten the stopper in its seat without the use of a fixed flange on the cap.

No. 14,821. Improvement in Trusses. (*Perfectionnement des bandages herniaires.*)

Nelson Herrick, Champlin, Min., U. S., 23rd May, 1882; for 10 years.

Claim.—1st. As an improved article of manufacture, a truss having its pad-carrying band formed of a skeleton frame consisting of a wire A doubled, bent to correspond with the form of the wearer, coiled around itself at a to form horizontal bars b b₂, and having its ends secured by an eye a₂ and nut f. 2nd. The combination, with a truss-pad and with a frame or band constructed as described, of a combined spring and shank consisting of a wire C having the coils c c and loop c₂.

No. 14,822. Improvements in blueing packages. (*Perfectionnements aux sacs à passer le linge au bleu.*)

Egbert W. Gillett, Chicago, Ill., U. S., 23rd May, 1882; for 15 years.

Claim.—1st. A holder for laundry blueing, consisting of a hollow reticulated and open ended receptacle provided with a removable stopple and with an extension, whereby the receptacle may be manipulated. 2nd. A holder for laundry blueing, consisting of a hollow reticulated and open ended receptacle, having a removable stopple which forms therewith a drip cup, said receptacle being provided with an extension to manipulate the same. 3rd. As an article of manufacture, a hollow reticulated open ended receptacle, in which a mass of laundry blueing is sustained, said receptacle being provided with an extension, or handle to manipulate the same, and adapted as well for use as a tool.

No. 14,823. Improvements on Filters. (*Perfectionnements aux filtres.*)

Henry C. Rice, Louisiana, Mo., U. S., 23rd May, 1882; for 5 years.

Claim.—1st. The filter, composed of an outer supporting member A and inner member B, for holding the filtering material to the outer member. 2nd. The outer upper tube A, inner lower tube B and filtering material C, the outer tube forming the upper half of the receptacle and supporting the filter, and the inner tube forming the lower half of the receptacle and projecting beneath the outer tube. 3rd. The inner and outer frustoconical tubes A and B, and filtering material C, the inner tube being pressed into the outer tube to hold the cloth between the two tubes, and the outer tube forming the support to the filter.

No. 14,824. Improvements on, and apparatus for the manufacture of elastic fabrics. (*Perfectionnements aux tissus élastiques et appareils pour les fabriquer.*)

Thomas Taylor and William W. Popplewell, Derby, Eng., 23rd May, 1882; for 5 years.

Claim.—1st. An elastic fabric in which the rubber or other threads are firmly locked together by causing elastic, or other threads, to pass through perforated slides alternating in their position at given intervals during which a rubber or other lock thread is passed by a reciprocating mail through the alternately crossed threads. 2nd. An elastic web loom, the reciprocating or alternating perforated slides A A₂. 3rd. In elastic web or smallware looms, the pressure bands J J bearing on the warps, and automatically easing off the same. 4th. In elastic web or small ware looms, in combination with the weighted bands J J bearing on the warps, the connecting bands L L and weighted pulley stocks H H. 5th. A counter-weight for use in letting off motions for elastic web or small ware looms of approximately oval shape to prevent catching or sticking, and with a slot to allow it to ride easily on the band. 6th. The improved mail consisting of a bow or yoke furnished with a central fork or needle.

No. 14,825. Improvements in Baling Presses. (*Perfectionnements aux presses d'emballage.*)

Nathan W. Herring, Millport, Pa., U. S., 23rd May, 1882; for 5 years.

Claim.—The combination, with the press box composed of sides D d and ends E e, one of said ends connected to the sides by strap hinges f and the opposite end connected detachably to the sides by bolts h inserted through the tenoned ends of beams E E, working in mortises in the beams D D of one side, and by stirrups or staples g slipping over the projecting ends of the bars D D of the opposite side, and the vertical pivoted lock beam F, of the follower J K, links L, levers M, links N, chains O, guide-pulleys P, drums Q and mechanism for rotating said drums in opposite directions.

No. 14,826. Improvements in Cofferdams. (*Perfectionnements aux batardeaux.*)

Henry P. Kirkham, Brooklyn, N. Y., U. S., 23rd May, 1882; for 5 years.

Claim.—1st. A cofferdam provided with balance water tanks, with water tight partitions dividing each tank, and inlet valves and openings, whereby the water tanks, or either of them, may be filled or be freed from water, in combination with a conical opening at one end of the dam, having hinged doors fixed to the sides of the same. 2nd. A cofferdam with water tanks fitted within the same, and with hinged doors fixed to one end of the dam. 3rd. In a cofferdam with interior balancing water tanks, the combination of a conical opening at one end of the dam, with a sliding gate, whereby said conical opening may be closed, and said hinged doors secured. 4th. A cofferdam with interior balancing water tanks, eye straps, whereby the dam may be secured to the vessel.

No. 14,827. Improvements on Fibrous Fabrics, and process and machine for manufacturing the same. (*Perfectionnements aux tissus fibreux, et procédé et machine pour les fabriquer.*)

Ellen M. Doubleday, (assignee of William E. Doubleday,) New York, U. S., 23rd May, 1882; for 3 years.

Claim.—1st. The method of producing fur bats for the manufacture of fur-faced fabrics, by applying a layer of fur to a sheet of non-feltable fabric and subsequently applying the bat thus produced to a sheet of feltable material. 2nd. The method of making fur bats, that is to say, by depositing upon a reticulated surface through

which a current of air is caused to pass, a layer of fur, and afterwards depositing upon the layer of fur a layer of cotton. 3rd. The method of making a fur bat in a continuous flat sheet, by depositing a layer of loose fur upon a travelling fabric of non-feltable fibrous material, and attaching the fur to the fabric by means of an air current which passes through the fur and the fibrous material. 4th. In a machine for making fur bats, the combination of the following elements, namely: a perforated surface, means for moving a fabric over said surface, means for depositing fur upon the fabric, and means for causing the fur to adhere to the fabric. 5th. In a machine for making fur faced articles, the combination of the following elements, namely: means adapted to move a continuous non-feltable fabric over a perforated surface, means adapted to deposit fur on said fabric, means for causing the fur to adhere to said fabric, means for supplying a feltable fabric to the fur bat thus produced, and mechanism adapted to stick the fur bat to the feltable fabric. 6th. The process of making a continuous fur bat, by depositing a layer or surface of fur by means of the practically continuously feeding mechanism upon a continuous fibrous base. 7th. The fur bat consisting of a layer of loose fur, in combination with a supporting fabric of non-feltable fibrous material. 8th. The combination of the following elements, namely: means adapted to move a continuous non-feltable fabric over a perforated surface, means adapted to deposit fur upon said fabric, means for causing the fur to adhere to said fabric, and means for supplying a feltable fabric to the layer of fur thus produced. 9th. The combination of the following elements, namely: means adapted for moving a sheet of cloth composed wholly or in part of feltable fabric, in combination with mechanism adapted to apply to each side of the cloth a fur bat. 10th. In a machine for making fur bats, means for saturating the bat with water before its removal from the reticulated surface upon which it is formed. 11th. The process of manufacturing fur faced fabrics, to wit: first, preparing a base of animal fibre or animal and vegetable fibre mixed, of the density and firmness which it is desired that it shall have when the manufactured article is completed, next, placing thereon a layer of fur, and afterwards subjecting the two materials to the action of a jigger, where the fur is stuck to the fibrous base and forms a surface thereon. 12th. The method of sticking fur to a previously felted hat body, that is to say, by applying a layer of fur to a felted hat body, and then subjecting the material to the combined pressing and rubbing action of a vibrating jigger. 13th. In a machine for striking fur to a previously woven or felted fabric, the combination of the dome M and vibrating shell or hood N. 14th. The improvement in the art of making hats which have a flowing nap of fur, the same consisting in applying a but of fur to a hat body which has previously been felted and shrunk to the size and density which it is desired that it shall have when the hat is completed, next subjecting the fur bat and body to the combined rubbing and pressing action of a vibrating plate, whereby the fur is stuck to the surface of the previously felted hat body, and subsequently scalding the same. 15th. The described improvement in the art of manufacturing fur faced fabrics, consisting in pressing and rubbing the material while wet, with hot water, between two hot flat parallel surfaces after the fur has been stuck to the fabric by any suitable means. 16th. In a machine for scalding fur faced fabrics, the combination of two flat parallel surfaces adapted to press and rub the material, with means for keeping the material in a wet and heated condition during the pressing and rubbing operation. 17th. In a machine for whipping or beating fur-faced articles, the combination of a stationary bed, a travelling apron above the bed, whippers and means for imparting moisture to the fur-faced fabric. 18th. In a machine for whipping or beating fur-faced fabrics, the combination of a perforated stationary bed, a travelling apron above the bed, whippers and means for passing a heated current through the perforated bed. 19th. The combination of a stationary bed, a travelling apron above the bed, whippers, means for imparting moisture to the fur-faced fabric, and means for passing heated currents upward through the perforated bed. 20th. A support to the fabric to be beaten, whippers, and enclosed chamber above the support for the fur-faced fabric, and means for imparting moisture to the material. 21st. A support for the fabric to be beaten, whippers, an enclosing chamber above the support for the fur faced fabric, and means for imparting moisture and heat to the material. 22nd. The combination, with the travelling apron and the whippers, of the water pipe T T.

No. 14,828. Improvements in Railway Switches. (*Perfectionnements aux aiguilles des chemins de fer.*)

Franz S. Scheffer, Richmond, Que., 25th May, 1882; for 5 years.

Claim.—1st. The combination of main line rails A₁ A₁ arranged to move laterally, adjustable rails A₂ A₃ forming continuous junction therewith and with rails A₄ and A₅ and pointed rails B B₁. 2nd. In combination with switch lever D provided with perforations d d₁, the guide standard E and locking pin G. 3rd. In combination with the rails of a switch, the fish-plates C C with turned up ends. 4th. In combination with the shifting rails of a railway switch, the chairs H H having turned up edges h h.

No. 14,829. Improvements on Process for Colouring Fibrous Materials. (*Perfectionnements aux procédés pour colorer les matières fibreuses.*)

Henry W. Vaughan, Providence, R. I., U. S., 25th May, 1882; for 5 years.

Claim.—1st. The process of dyeing fibrous material, which has previously been superficially coloured by impregnation with a dry powder charged with colour and an oleaginous constituent, the said process consisting in mechanically incorporating with the fibrous material during the process of manufacture, a mordant, by the aid of infusorial earth, or other suitable vehicle for the same, and an oleaginous constituent, and afterwards causing the dye stuff and mordant to chemically combine to form a fast colour by heating or steaming the material. 2nd. The process of dyeing fibrous material, by mechanically incorporating with the fibrous material during the process of manufacture, a dye stuff and a mordant in conjunction, by the aid of in-

fusorial earth or other suitable vehicle for the same, and an oleaginous constituent, and afterwards causing the dye stuff and mordant to chemically combine to form a fast colour by heating or steaming the material. 3rd. The process of dyeing fibrous material, by, first, mechanically incorporating with the fibrous material during the progress of manufacture a mordant, by the aid of infusorial earth or other suitable vehicle for the same; secondly, superficially coloring the same fibrous material, by impregnating it with a dry powder charged with colour and an oleaginous constituent, and lastly, causing the mordant and the dye stuff to chemically combine to form a fast colour, by heating or steaming the material. 4th. The process of colouring fibrous material, yarns and fabrics, by mechanically incorporating with the fibrous material during the process of manufacture, an infusorial earth, or other suitable vehicle charged with a mordant, and subsequently immersing such material, or yarn or fabric made from the same, in a dye bath containing a suitable colouring agent, to combine chemically with the mordant and make a fast dye.

No. 14,830. Improvements in Colouring Fibrous Material. (*Perfectionnements dans l'art de colorer les matières fibreuses.*)

Henry W. Vaughan, Providence, R. I., U. S., 25th May, 1882; for 5 years.

Claim.—The process of fixing dyes or colouring matters, by steaming fibrous material which has previously been superficially coloured by impregnation, with a dry powder charged with colour and an oleaginous constituent.

No. 14,831. Improvements on Label-Holders. (*Perfectionnements aux porte étiquettes.*)

John F. Burgdoun, Buffalo, N. Y., U. S., 25th May, 1882; for 5 years.

Claim.—An open metallic reversible frame B, adapted to be attached to a shipping package, and to swing on a hinge, and to have its sides and one end bent over to form grooves a b b, and with corresponding grooves formed on the reverse side of the holder, adapted to hold labels, or address cards, one side being for the address of the consignor, and the other for the consignee.

No. 14,832. Improvements on Tug Buckles. (*Perfectionnements aux boucles de tirage.*)

Maddison T. Shadduck, Shunk, Pa., U. S., 25th May, 1882; for 5 years.

Claim.—The frame A having loops B C D E and flanges G, the cross rod H, the links I, the lever J, the plate K, having inclined flanges L and tongue M, and the spring-bolt O N and eye-bar Q. 2nd. The combination, with the frame A provided with flanges G, connecting rod H and eye-bar Q, of the links I, the tongue-plate K, and the lever J provided with the spring-bolt N. 3rd. The combination with the frame A provided with the flanges G, and connecting-rod H, the links I and the lever J, of the tongue-plate K provided with the inclined flanges L.

No. 14,833. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

Arthur M. Leslie, Cleveland, Ohio, U. S., 25th May, 1882; for 5 years.

Claim.—1st. The combination of a reciprocating needle-bar carrying an eye-pointed needle, and a rotary shuttle constructed in the form of a segmental disk having a central bobbin, and arranged in a vertical transverse plane, with parallel horizontal shafts arranged respectively within the arm of the machine, and beneath the cloth plate, and provided with suitable drivers for said needle-bar and shuttle, a driving pulley applied to the upper shaft and a crank movement, including a lever pitman within the upright posture of said arm for transmitting motion from said upper shaft to the under shaft, so as to cause the latter to rotate with an alternately fast and slow motion. 2nd. The combination, with the said driving mechanism and the said needle-bar, and its needle and driver, of a segmental disk shuttle race, and a shuttle driver which projects into and nearly fills the space within the said race behind the heel of the shuttle, provision being made for a limited separation of the two, by the momentum of the shuttle when the under shaft is slowed. 3rd. The combination, with the said driving mechanism and the said needle-bar and its needle and driver, and the said shuttle and shuttle driver, of an independent take up in the form of a lever arm actuated through the medium of a suitable cam by the said upper shaft, and time to let down ample thread for needle loops of the required size, and take up the slack when the needle loops are released. 4th. The combination, with the said driving mechanism, of the said needle-bar and its needle and driver, the said shuttle and shuttle driver, and the said take up lever arm and cam, a four-motion feed actuated by the said under shaft and properly timed. The lifting feed cam being formed in one piece with the disk of the shuttle driver. 5th. The combination, with the said hollow arm of the machine, of a bearing plate held in place by screws and serving to support the pulley end of the said upper shaft. 6th. A segmental rotary shuttle constructed with a weight reducing recess or recesses between its axial bobbin chamber and peripheral guide flange, so as to free it partially from unequal centrifugal effect. 7th. The combination of a reciprocating needle-bar carrying an eye-pointed needle, a segmental rotary shuttle provided with a bobbin, and having a peripheral guide flange, a shuttle race having an attached cam forming a groove to receive said flange, and a shuttle driver projecting behind the heel of said shuttle, and constructed with a deep peripheral notch or groove in the plane of rotation. 8th. The combination of a segmental rotary shuttle having an open bobbin chamber in its outer face and a peripheral guide flange, a shuttle race having a screw-fastened cam forming a groove to receive said flange, and constructed with a concentric opening to expose said bobbin chamber, a bobbin removable at will from said bobbin chamber through said opening, and a shuttle driver composed of a disc parallel to said race, and a projection extending into the latter behind the heel of the shuttle. 9th. The combination, with

the shuttle race, shuttle and bobbin, of a bobbin latch and ejector attached to the shuttle, as a part thereof, for releasing and throwing out the bobbin. 10th. A bobbin latch in the form of a rocking lever, with its pivot parallel or substantially parallel to the outer face of the shuttle, and its body arranged within a radial recess in said outer face. 11th. A bobbin ejector in the form of a spring finger, rigidly attached to the nearer end of the said bobbin latch. 12th. The combination, with the said rotary shuttle, removable bobbin and bobbin latch, of a non-rotary bobbin case provided with a circumferential flange to engage with said latch. 13th. A bobbin, constructed with an arm, comprising a pair of blade springs, between which the thread is drawn from the bobbin, and a screw for separating said springs, more or less to regulate the under tension. 14th. The combination of a horizontal rotary shaft beneath the cloth plate, carrying a lifting cam adjacent to the parallel part of the feed dog, and an adjacent stroke cam, a horizontal slide actuated by the latter, a parallel feed-bar resting on said lifting-cam, a horizontal lever-arm pivoted to said bar and engaged by said slide, and a fulcrum carried by a slide parallel or nearly parallel to said lever-arm, with the customary means for adjusting the feed fulcrum from the top of the cloth plate. 15th. The combination, with the said feed-bar and fulcrum slide, of a steel pin parallel to the latter, forming at once a support for the front end of the feed-bar, and a non-wearing abutment for the fulcrum slide. 16th. The combination, with the said feed-dog and feed-bar, of a slotted horizontal wedge and a vertical screw for adjusting the dog vertically. 17th. The combination, with a cylindrical needle bar which slides vertically, and with a crank wrist, of a needle-driving disc carried by a rotary upper shaft, and with the head of the machine of the aforesaid deep face plate forming part of said head, and the aforesaid needle-head and its appurtenances. 18th. The combination, with the said head of the machine, of a properly actuated take-up lever arm projecting at its front edge in the plane of the machine arm or thereabouts, and an upper tension device and thread guides attached to the back of said head, the former near its lower end. 19th. The combination, with the said head of the machine and the said take up lever arm, and with the presser-bar within the former, of a supplemental take-up in the form of a spring controlled by the motion of the presser-bar. 20th. A presser foot constructed with a lateral notch in its elevated rear end, in combination with a presser-bar having a screw threaded lower end constructed with matching notches in front and rear, and provided above the same with a milled thumb-nut.

No. 14,834. Improvements on Waggon-couplings (Undercarriages). (*Perfectionnements aux trains des voitures.*)

Thomas C. Waller, Tilsonburg, Ont., 25th May, 1882; for 5 years.

Claim.—The form of the coupling A forming a complete and solid box or slide through which the reach B passes, and having a solid cast-iron bottom, as well as top, combined with the fore and hinder parts of the running gear, by means of the bolt *b*.

No. 14,835 Improvement in Machinery for Sawing Barrel-Hoops from Poles. (*Perfectionnements aux machines à scier les perches pour les cerceles des barils.*)

William Bowker, Somerville, Mass., U.S., 25th May, 1882; for 5 years.

Claim.—1st. In combination with the band-saw, mechanism for guiding it and bending it laterally in order to cause it to cut in a pole, of a kerf in parallelism with the medium longitudinal line of the surface of the hoop, or portion separated by it from the pole, such mechanism consisting of the two rollers *a b*, their sustaining lever or levers D, and the grooved journal E to each of such levers, all arranged with the saw. 2nd. The combination of the kerf-opener or spreader H, with the saw and the mechanism for guiding it and bending it laterally, such mechanism consisting of the grooved journal E, its carrying lever D and its pressure rollers *a b*.

No. 14,836. Improvements on Distilling Apparatus. (*Perfectionnements aux alambics.*)

George Race, New York, U. S., 25th May, 1882; for 5 years.

Claim.—1st. The combination, with the casing subdivided into different compartments, of the siphons arranged to conduct the liquid from one compartment or chamber to another. 2nd. The described distilling apparatus having the steam conducting tubes forming troughs down which the liquid flows. 3rd. In a distilling apparatus, the series of chambers having troughs for the flow of the liquid backward and forward from one end of the still to the other, and connected by suitably arranged siphon pipes. 4th. The combination, with the casing through which the liquid is adapted to flow, of the entrance siphon pipe and exit siphon pipe. 5th. A series of chambers into which the steam is admitted and withdrawn in each chamber independently of the others. 6th. The described improved distilling apparatus.

No. 14,837 Improvements on Inside Window blinds. (*Perfectionnements aux jalousies.*)

Edward W. Bowslaugh, Grimsby, Ont., 25th May, 1882; for 5 years.

Claim.—1st. The combination of a series of slats F, provided with holes *H* near the edges, with the webbing G, and the hooks H *i*, which have an eye at one end for catching in the slot, and a bend at the other end for catching against the outside of the webbing. 2nd. The combination, with an M-side blind, of the hinge B made in two parts, one of which is provided with the hook C, and the other with the portion D, over which the hook catches, whereby the blind can be removed from the window without having to remove the screws from the hinges. 3rd. The combination, with an inside blind, of the hinges B provided with the hooks C and parts D, the parts of the hinges being provided with slots for the screws to pass through, whereby the pass of the hinges can be adjusted into line with each other without having to remove the screws. 4th. The combination of

the blind with hinges, which are made in separate parts and which can be detached without removing one of the screws, one of the parts being provided with a slot, so that it can be adjusted in position.

No. 14,838. Improvements on Incandescent Electric Lamps. (*Perfectionnements aux lampes électriques incandescentes.*)

John Jameson, Newcastle-on-Tyne, Eng., 25th May, 1882; for 5 years.

Claim.—The means of replacing filaments in incandescent vacuum electric lamps, without destroying the vacuum in such lamp, or any mere modification of such means.

No. 14,839. Improvements on Self-Extinguishing Lamps. (*Perfectionnements aux lampes à extinction automatique.*)

Walter Scott, Hoosick Falls, N. Y., U.S., 25th May, 1882; for 5 years.

Claim.—1st. An automatically extinguishing lamp, the combination of an oil receptacle, with a counterpoise weight or its equivalent, connected by mechanism to the extinguisher near the frame, whereby the movement of receptacle, after a certain amount of illuminating material has been consumed, actuates the extinguisher and quenches the light or flame. 2nd. In an automatically extinguishing lamp, a receptacle for the illuminating material supported on a pivot and connected by suitable mechanism to an extinguishing device, combined with a counterpoise or balance adjustable at will, whereby the time at which the extinguisher shall quench the flame may be predetermined.

No. 14,840. Improvements in Sockets and Cockeyes for Traces and Neck Yokes. (*Perfectionnements aux embouts et aux œils des traits et des jougs.*)

Mathias Miller, Grand Rapids, Mich., U. S., 25th May, 1882; for 5 years.

Claim.—1st. The socket C projecting longitudinally from the outer end of the whiffletree or neck-yoke, and formed with the flat upper and lower sides, and the cylindrical passage and slot D and E, in combination with the cockeye constructed with the arms J J¹ and pin L, and adapted to be inserted into said socket at one side, and to swing around to the outer end of the same to the opposite side thereof. 2nd. The socket C projecting longitudinally from the outer end of the whiffletree or neck-yoke, and formed with the thickened front portion, the rounded outer end, the flat upper and lower surfaces, and the cylindrical passage and the slot D and E, in combination with the cockeye having arms J and J¹ and pin L, and constructed to be inserted into the socket at one side thereof, and to swing around the outer end of the same to its opposite side, and normally rest against the thickened portion of the socket. 3rd. The combination, with the socket having the passage L and slot E, of the cap adapted to be moved to cover or uncover the slot by the connection or disconnection of the trace or strap and the rocket, to prevent the access of dirt through the slot. 4th. In combination with the slotted socket, the sliding cap provided with the arms having ring-bearings seated in the faces of the socket.

No. 14,841. Improvements in Treadle Motive Power for Gig Saws and other Machines. (*Perfectionnements aux marches motrices pour les scies à évider et autres machines.*)

William Cooper, Jr., (Assignee Henry H. Holden), Strathroy, Ont., 25th May, 1882; for 5 years.

Claim.—One or two treadles A A, singly or combined, when suspended to the table I by means of hinges or horizontal axles adapted to give them a swinging and direct backward and forward horizontal movement, combined with the horizontal arms B B, connecting the treadle or treadles to crank of the drive wheel C, and which communicates to the drive wheel the horizontal motive power of the treadles.

No. 14,842. Lifting, Pressing and Weighing Machine. (*Machine à presser, lever et peser.*)

Robert Kirkpatrick, Richmond, N. B., 25th May, 1882; (Extension of Patent No. 9,327.)

No. 14,843. Improvements on Radiators. (*Perfectionnements aux calorifères.*)

William J. Carshore, (Assignee of Joshua Mason,) Paterson, N. J., U. S., 26th May, 1882; for 5 years.

Claim.—1st. The combination of an upper and lower water or steam chamber, or head outer and inner upright tubes, the former of which connect the said chambers or heads, and the latter of which pass through the former and through both chambers and heads, and a central tube communicating with the upper chamber or head, and having an inlet at the lower end thereof. 2nd. The combination of the lower head or chamber A constructed with the passage or conduit *a*, the upper head or chamber C, the outer and inner tubes C D and the central tube F.

No. 14,844. Improvements on Burnishing Knife Blades. (*Perfectionnements dans le brunissage des lames de couteaux.*)

LaGee Faber, Meriden, Ct., U. S., 26th May, 1882; for 5 years.

Claim.—1st. The combination of two hinged burnisher arms, each provided with its burnisher means, to impart a reciprocating movement thereto, with a holder constructed to hold the blade between

said burnishers and in the line of movement of said burnishers, mechanism to impart to the holder a movement in relation to the reciprocating burnishers, so that during the reciprocating movement of the burnishers the knife blade is gradually burnished from one edge to the other. 2nd. The combination of two hinged burnisher arms, each provided with its burnisher mechanism to impart a reciprocating movement thereto, with a holder constructed to hold the blade between said burnishers and in the line of movement of said burnishers, mechanism to impart to holder a movement in relation to the reciprocating burnishers, so that during the reciprocating movement of the burnishers the knife blade is gradually burnished from one edge to the other, and adjustable stops to prevent contact of the burnishers. 3rd. The combination of two hinged burnisher arms, each provided with its burnisher, mechanism to impart a reciprocating movement thereto, with a holder constructed to hold the blade between said burnishers and in the line of movement of said burnishers, and mechanism to impart to holder a movement in relation to the reciprocating burnishers, so that during the reciprocating movement of the burnishers the knife blade is gradually burnished from one edge to the other with mechanism to impart a forced yielding pressure to the burnishers.

No. 14,845. Improvements in Potato Separating Machines. (*Perfectionnements aux machines à séparer les patates.*)

William Penniston, St. Michel, Que., 26th May, 1882; for 5 years.
Claim.—1st. The hopper A provided with adjustable feed regulator screens C C' and elevator G. 2nd. A screen made up of a suitable frame work, wooden slats and metal wires. 3rd. The combination, with oscillating screens C C', of the elevator G. 4th. The combination, with the elevator G, of the slide or table M. 5th. The combination, with the slide or table M, of the retarding device N. 6th. The combination, with the slide or table M, of the guide M'. 7th. The combination, with the elevator G and frame, of the hinged flat Z. 8th. The combination, with the elevator G, of the cords, pulleys and braces.

No. 14,846. Improvements in Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

Herbert C. Shaw, Needham, Mass., U.S., 26th May, 1882; for 5 years.
Claim.—1st. The combination, with the needle carrier, of mechanism, for effecting simultaneous and equal movements of them in order to vary the length of stitch. 2nd. In combination with the needles and their main operative cam-bars and studs, the auxiliary studs, and cam-bar or bars, to aid in effecting the knitting into the fabric, of marking threads as explained.

No. 14,847. Improvements on Tricycles. (*Perfectionnements aux vélocipèdes.*)

James A. McKenzie, Galesburg, Ill., U.S., 26th May, 1882; for 5 years.
Claim.—1st. The combination, with two large front wheels and a small rear steering wheel, of treadles and devices connected to the inner ends of the front wheel hubs, and adapted to be locked thereto and disengaged therefrom, for propelling the vehicle, the parts being constructed to form an obstructed space between the foot pedals and front wheel spindles. 2nd. The combination, with two front wheels mounted on separate spindles attached to the opposite ends of a connecting piece extending rearwardly of said spindles, of devices connected to the front wheel hubs and foot treadles for propelling the tricycles through the medium of said devices, the parts being constructed and arranged to form an open and unobstructed space between the foot pedals and front wheel spindles. 3rd. The combination, with the two front wheels and a seat located in rear of the front wheel spindles, of foot pedals located in front of the spindles and devices connected therewith, and adapted to be engaged with and disengaged from the inner ends of the front wheel hubs and revolve the wheels, the several parts being arranged to form an unobstructed space between the foot pedals and the front wheel spindles. 4th. The combination of the two front wheels and a seat supporting frame having the front wheel spindles attached thereto, said supporting frame at its forward end being arranged practically in the same horizontal plane as the front wheel spindles, and formed to insure an unobstructed space between said spindles, and foot pedals located below and in front of said spindles. 5th. The combination, with two large front wheels mounted on independent spindles, and a rearwardly curved connecting piece having the front wheel spindle secured to its opposite ends, of foot treadle levers pivoted in rear of the front wheel spindles, and provided with foot pedals located below and in front of said spindles, pawl and ratchet propelling devices connected with the inner ends of the front wheel hubs, and flexible straps connecting the foot treadles and pawl and ratchet propelling devices. 6th. The combination, with the two large front wheels mounted on separate spindles rigidly secured to the opposite ends of a rearwardly curved connecting piece, of loosely mounted disks located between the ends of the curved connecting piece and wheels, pawl and ratchet mechanism for locking the disks to the wheel when the disks are rotated in one direction, and spring for rotating the disks in the opposite direction. 7th. The combination, with two front wheels and a rear steering wheel, of pawl and ratchet drive mechanism connected with the inner ends of the hubs of the front wheels, and foot pedals located below and in front of the wheel spindles and projecting inwardly therefrom, the parts being arranged to form an unobstructed space between the foot treadle and spindles. 8th. The combination, with two large front wheels, a small rear steering wheel, a forked-shape frame connecting said wheels, and a seat mounted on the connecting frame and located between the front wheels, of pawl and ratchet driving mechanism connected with the inner ends of the hubs of the foot wheels, and separate and independent foot pedals located below and in front of the front wheel spindles, the parts being constructed to form an open unobstructed space in front of the seat and between the foot pedals. 9th. The combination, with the two large front wheels and rearwardly-curved connecting piece, having its opposite ends secured to the front wheel

spindles, of depending arms provided with stops to limit the upward movement of the treadles. 10th. The combination, with two large front wheels, small rear steering wheel and fork-shaped frame connecting said wheels, of ratchet and pawl drive mechanism connected to the inner ends of the front wheel hubs, and treadles pivoted to the opposite ends of a bar or rod suspended from the reach portion of the frame. 11th. The combination, with disks located between the front wheels and opposite ends of the curved connecting frame, of a cross bar connected to the reach and springs, and flexible straps connecting said disks and opposite ends of the cross bar. 12th. The combination, with the steering wheel having an arm secured to its spindle, of a rotating handle shaft, provided with a pinion and a connecting rod, having a rack bar on its forward end. 13th. The combination, with the two large front wheels, of a rearwardly curved connecting piece, having the front wheel spindles secured thereto, the ends of said connecting piece extending in front of the spindle, and having handles connected thereto.

No. 14,848. Broom Bag. (*Sac à balai.*)

Valancy E. Fuller, Hamilton, Ont., (Representative of Edward D. Bronson, Amsterdam, N.Y., U.S.) 26th May, 1882; (Extension of Patent No. 7640.)

No. 14,849. Improvements on Crocheting Machines. (*Perfectionnements aux machines à tricoter au crochet.*)

Henry M. Paynter. (Assignee of Charles Young.) Chicago, Ill., U.S., 27th May, 1882; for 5 years.

Claim.—1st. In a machine for the manufacture of loop stitched fabrics, the construction of a single series of loop hooks, a single series of needles, a double series of oscillating and laterally reciprocating guide arms with mechanism, whereby the yarn or other material is carried up to and over the needle to the left by the guide arms, one remaining momentarily stationary while the other drops back to and around hook, and up again over the needle to the left, then both guide arms drop back, one going to the left, back of two needles, the other to the right back of one needle, then both up again, one to the third needle from where it commenced, and over it to the right, the other up to and over the same needle it first made the loop from the front guide arm remaining stationary long enough for the back guide arm to drop back to and over the loop hook, and return to the place where it left front guide arm, or over the same needle it commenced from then both guide arms drop backward and return to first position, front guide arm passing back of two needles, and back guide arm back of one needle to the right, at each complete operation, so as to form a double series of loops and holding stitches. 2nd. The plate E provided with guide arms Y Y, needle bar C, projections and openings A, arm Q, cam R, adjustable arm S, upright arm U with roller clutch B B, cams X and Y, cam V with disk for regulating feed, feed arm M M, hook bar K K, cam H provided with projections and depressions H' H' H' H' H' H', cam G with projections and depressions G' G' G' G' G' G', and a suitable supporting frame.

No. 14,850. Improvements on Wheel Hubs. (*Perfectionnements aux moyeux des roues.*)

Melvin L. Smith, Batavia, N. Y., and Henry F. Bancroft, Jefferson, Ohio, U.S., 27th May, 1882; for 5 years.

Claim.—1st. The combination of the continuous axle box A having cap E at one end integral therewith, with double row of spokes B B B' B', removable collar C centered on the axle box, cap G and nut D, when the inner ends of the spokes are clamped by friction in holes in the joints between the caps and the collar with nuts o o. 2nd. The combination of the axle box A having enlargement E, collar C, ring G, nut D and spokes B B' B' provided on their inner ends with nuts o o fitted against each other so as to prevent their turning.

No. 14,851. Improvements in the Processes and Apparatus for Manufacturing Gas. (*Perfectionnements dans les procédés et appareils à fabriquer le gaz.*)

William Duffield and Peter English, London, Ont., 27th May, 1882; for 5 years.

Claim.—1st. The process of manufacturing gas for illuminating and heating purposes, consisting substantially of admitting continuously or intermittently hydro-carbon oil or other carbonaceous substances, either liquid or solid, on the top and between a thick mass of perforated brick previously heated by internal combustion, and then for the purpose of fixing said carbonaceous substances in said perforated brick, passing or forcing air through a bed of coal in a state of incandescence and on through the perforated brick above the said coal being previously heated by direct internal combustion. 2nd. The process for producing an illuminating gas, by passing air through a bed of coal in a state of incandescence, and for the purpose of enriching and fixing said air into an illuminating gas, passing them while in a heated state up through the perforated brick above the coal bed containing hydro-carbon oils. 3rd. The combination, with generator E, of the perforated brick vaporizer I to receive and vaporize the oil from pan or pipe J and the perforated brick superheater N above inlet for oil, all contained in one furnace or cupola A heated by direct internal combustion, for the manufacture of gas. 4th. The air blast G below the coal bed or generator E, the similar air blast H above the coal bed doors D F and top door of cupola O, and in combination therewith, the adjustable pan J for the introduction of oil or other carbonaceous substances, the perforated brick retainers I N and the outlet pipe Q into washer, all contained in one furnace or cupola A.

No. 14,852. Improvements on Drill and Broadcast Sowers. (*Perfectionnements aux semoirs au sillon et à la volée.*)

John Fraser, Charlotteville, Ont., 29th May 1882; (Extension of Patent No. 7501.)

No. 14,853. Improvements in Holdbacks.*(Perfectionnements aux ragots des limonnières.)*

Mathias Miller, Grand Rapids, Mich., U. S., 29th May, 1882; for 5 years.

Claim.—1st. A holdback for harness, composed of the cylinder F of a single piece-form with the slot *f* and the peripheral groove, and arranged entirely within the cylindrical passage *e* of the lug E with its outer ends seated in and flush with the sides of said lug, in combination with lips *g* formed on the edges of the opening *e* of the lug, and turned into the peripheral groove of the cylinder. 2nd. The combination, with the lug E having the cylindrical seat, open at its ends on one side and the notch locking cylinder fitting in said seat, of the spring actuated pin passing through a passage in said lug, and bearing upon the periphery of said cylinder.

No. 14,854. Improvements on Spring Tooth Harrows or Cultivators.*(Perfectionnements aux herbes ou cultivateurs à dents élastiques.)*

Henry Springer and George L. Ives, Vicksburg, Mass., U. S., 29th June, 1882; for 5 years.

Claim.—1st. The combination of three rocking shafts carrying the spring teeth, the middle one arranged above the plane of the other two and having its teeth extending over and back of the rear shaft. 2nd. The box F having the top piece *c*, lower piece *f*, side flange *g*, rib *t* and axle arm K, the latter four parts made in one piece in combination with the frame, wheels and rocking shafts. 3rd. The sector arms N, catch plate O, bell crank lever L (U, socket R and pin *r*, in combination with the tongue and frame. 4th. The lever arms K and bail P, in combination with the rocking shaft E¹ and the draft power.

No. 14,855. Improvements in Self-Levelling Ship's Berths.*(Perfectionnements aux lits de bord suspendus.)*

Albert A. Young, Boston, Mass., U. S., 29th May, 1882; for 5 years.

Claim.—1st. In combination, the beam B secured adjustably to the cross head C and constituting at its ends the suspensory of the berth A, and the blocks DD mounted adjustably upon the bars E and supporting the pivots *e*, which in turn support the beam B. 2nd. The modification consisting of the bar *h* the cross head C adapted to slide upon such bar and containing the ears *i*, and the beam pivoted between such ears. 3rd. In combination, the beam B secured adjustably to the cross head C and constituting at its ends, the suspensory of the berth A, and the blocks DD mounted adjustably upon the bar E and supporting the pivots *e*, which in turn support the beam B, the locking device H and the coiled spring *r* or their equivalents.

No. 14,856. Improvements in Treating Railway Sleepers, Wood Blocks and Vegetable Fibre, and in Apparatus Therefor.*(Perfectionnement dans le traitement des traverses de chemins de fer, des blocs de bois et de la fibre végétale.)*

John A. Blythe, Bordeaux, France, 29th May, 1882; for 5 years.

Claim.—1st. The use of mixed concentric jets or discharges of carburetted and high pressure steam in the form of ejectors F and G, as applied to treat wood and vegetable fibre in general, whereby a jet of high pressure steam (superheated or not) is made to mix with and give pressure to a current of hydro-carbon vapour, or carburetted steam. 2nd. The combination, with the apparatus, of a superheater. 3rd. The construction and arrangement of the improved apparatus for treating railway sleepers, wood blocks, and vegetable fibre in general comprising a superheater D, ejectors F and G and steam boiler C, in combination with tank or reservoir A, oil measurer or charging vessel B, oil boiler E and cylinders or ovens H. 4th. The combination of condensing vessel I and ejector J, with cylinders or ovens H and oil boiler E.

No. 14,857. Improvements on Machines for Singeing Hogs.*(Perfectionnements aux machines à flamber les porceaux.)*

William Morgan, Montreal, Que., 29th May, 1882; for 5 years.

Claim.—1st. The combination of the system of pipes CD and their quadrant connections with concentric pipes FG, and the double cone receivers E E and their valves *g g g* appertaining thereto. 2nd. The double concentric in pipes F G. 3rd. The application and form of the hollow truncated cone receivers.

No. 14,858. Improvements on Fences.*(Perfectionnements aux clôtures.)*

Joseph DuBois, Waverley, N. Y., U. S., 29th May, 1882; for 10 years.

Claim.—1st. A fence section composed of upper long rails and lower short rails with vertical battens and end posts secured to the ends of the upper long rails. 2nd. A fence composed of sections having their posts pivoted between standards secured in rectangular boxes, arranged at right angles with the fences and adapted to be filled with stones, in order to anchor the fence upon the ground. 3rd. A fence composed of sections having their posts pivoted between standards secured in boxes adapted to receive stones or other weighty articles, each of said sections being composed of an upper long and a lower short part. 4th. A fence formed in sections composed of horizontal rails held parallel with each other, at suitable distances apart, by vertical battens or pickets and united and suspended by a bolt passing through the ends of the top of the panels and through the top of a rigid post provided with a base consisting of a rectangular box, to be filled with ballast. 5th. A fence section composed of horizontal

rails or girts held parallel with each other by vertical strips or battens firmly secured thereto, so as to leave an open space between the rails and battens for the circulation of air and evaporation of moisture. 6th. The method of providing an air space between the opposing surfaces of the rails and battens of a fence section, without the interposition of washers or staples by, first, interposing an iron or steel rod between such surfaces, then firmly uniting the rails and battens by malleable nails, then withdrawing such rods.

No. 14,859. Improvements in Pulley-Blocks.*(Perfectionnements aux chapes des moules.)*

Joseph W. Norcross, Lockport, N. Y., U. S., 29th May, 1882; for 5 years.

Claim.—1st. In a pulley block embodying in its construction wooden cheek pieces and metallic frames arranged on the outside faces of the wooden cheeks and each constructed with inwardly projecting rims at their outer edges, which embraces the outer margins of the wooden cheeks, said metal frames and wooden cheeks being connected together by end pieces interposed between the cheeks, and transverse pins passing through the cheeks and the metal frames. 2nd. The combination of the metallic frames arranged on the outside faces of the wooden cheek pieces, and each constructed with inwardly projecting rims at their outer edges, which embrace the outer margins of the cheeks, with end pieces interposed between the wooden cheeks, and each provided at its opposite sides with attached lateral pins projecting through the cheeks and metallic frames and secured in place. 3rd. The metallic rim *d* having on its inner periphery a transverse spur *j* (one or more), in combination with two wooden disks having their peripheries transversely penetrated by the spur, said disks being connected together and provided with exterior straps forming bearings for the axial pin of the pulley-block. 4th. The combination of the metallic rim *d*, the wooden disks filling the interior of said rim, and a rib *b* (one or more) projecting from the inner surface of the rim for engaging with a notch (one or more) in the disks. 5th. The combination of the metallic rim *d*, the wooden disks *f* fitting the interior of said rim, the straps extending diametrically across the wooden disks, the rivets for securing the straps and the wooden disks together, and the hub projecting from one strap through the wooden disks and through the other strap. 6th. The combination of the metallic rim *d*, the wooden disks fitting the interior of said rim, the ribs projecting from the inner surface of the rim and engaging with notches in the disks, the straps extending diametrically across the wooden disks, the rivets for securing the straps and disks together, and the hub projecting from one strap through the disks and through the other strap.

No. 14,860. Improvements in Perpetual Calendars.*(Perfectionnements aux calendriers perpétuels.)*

Thomas H. Hovenden, Ingersoll, Ont., 29th May, 1882; for 5 years.

Claim.—1st. A cylinder having a series of unit figures, from one to zero inclusive, arranged in direct line around its periphery, in combination with a cylinder telescoping therewith and provided with a spirally arranged series of numerals adapted to act as decimal figures with the aforesaid unit figures. 2nd. The described series of calendar slips, each representing six months of successive years, in proper order, one above and the other below the line of apertures, said slips being suitably attached to the front or frame. 3rd. The cylinders carrying numerals indicating days of the month, in combination with a cylinder having the names of the days of the week, and with intermediate connecting mechanism, whereby the said numeral cylinder carries the name cylinder step by step in its advance, but leaves it undisturbed in reverse movement. 4th. The cylinder carrying numerals indicating days of the month, in combination with cylinders having names of the days and month respectively and with intermediate connecting mechanism, whereby advance only of the numeral cylinders moves the day name cylinder, and reverse movement only of the same moves the month name cylinder. 5th. The numeral carrying cylinders, in combination with the cylinder carrying the names of the month and with pawl and stop mechanism, whereby the last backward movement only of the numeral cylinders move the month cylinder one step. 6th. In a calendar and in combination, cylinders carrying on their periphery, numbers of the days of months rotated by positive movement of shaft, in a cylinder carrying names of the days, and intermediate mechanism between the shaft and name cylinder adapted to transmit to that the said name cylinder, an amount of motion varied from that of the shaft. 7th. In combination, the cylinder 6 fixed on shaft 1, the cylinder 2 connected to shaft by spline and the fixed spiral 8. 8th. In combination, the fixed case 10 having heads 9 and 11 and central opening, the cylinder 6 fixed to shaft 1, the cylinder 2 telescoping therein, and the spiral 8. 9th. In combination, cylinder 6 fixed to shaft cylinder 2 telescoping therein, fixed case 10 and cylinder 13 carrying the names of the days of the week and operated from the shaft by the push and pull pawls. 10th. The cylinder 2 and 3 and the fixed case 10, in combination with the wheel 16, shaft 1 and the connected pawls 17 and 18. 11th. The combination of the rod 22, pawls 17 and 18, wheel 16 and head 15, both provided with pins. 12th. The wheel 16 and head 15 provided with pins, in combination with the connected push and pull pawls 17 and 18 and the yielding stop pawls. 13th. In a calendar, the combination of the fixed cylinder carrying the unit figures, telescoping cylinder carrying the spirally arranged decimal figures, the stop pin or pins in the head of the telescoping cylinders and the shoulders adapted to arrest the rotation of the telescoping cylinder. 14th. The head 11 of the fixed case 2 slotted as described, in combination with weighted wheel 34 and pawl carried thereon by pin extending through slot in head 11 and connecting with pins in the head of cylinder 14. 15th. In combination with a cylinder having characters arranged spirally upon its surface, and with a fixed case having openings to display such characters, the revolving shaft 1, fixed spiral rod surrounding said shaft, and the cylinder head having a hole adapted to the shaft, and a surface bearing on the shaft, approximately spiral, said surface being adapted to pass between the coils and the overlapping or meeting ends of said spiral bearings surface, saddling closely the spiral rod, all the parts

being combined in a calendar. 16th. In combination with the cylinders of a calendar, having characters indicating the numbers of the days of the month, and adapted to turn to bring these characters successively to view, and with a cylinder carrying the names of the months arranged in proper order, a variable arresting device regulated by the month cylinder, and adapted to arrest the numeral cylinder at the proper point for each month. 17th. The combination of a cylinder having stop pin or rod and turning on its axis to bring successive numbers representing days of the month to an aperture, a weighted disk 34 having off set 36 for said stop pin or rod, pawl 35 acting on month cylinder latch 37 and devices for operating the same, said latch acting on pin 39 of the weighted disk. 18th. The combination of the weighted disk having off set adapted to act in connection with stop pin or rod on the cylinder, and carrying pawl 35, the latch pivoted on the head 11 having stops to act on pin 39 in weighted disk, and arm 40 adapted to be operated upon by the pins upon the head of the month cylinder. 19th. The improved double pawl 19, 23 formed out of one piece of wire, having an eye formed to fit over its holding pin, and with the pawls extending on opposite sides of the wheel, said pawl being formed with V-shaped bends to form yielding stops and adapted to the pins of the wheel and head, and in combination therewith.

No. 14,861. Improvement in Pulley-Blocks.
(*Perfectionnement des chapes de moufles.*)

Joseph W. Norcross, Lockport, N. Y., U. S., 29th May, 1882; for 5 years.

Claim.—1st. In a pulley-block the cheeks of which are made of wood, the skeleton metal frame *d* rivetted to said cheeks, and receiving the axle of the sheave. 2nd. The combination, with the two sides of a pulley-block, of the end pieces *g* slotted to receive the hook and becket, and provided with holes *h h* through which and the sides rivets are passed to secure the whole together. 3rd. In a pulley-block having a slotted end piece *g*, the becket *K* provided with the eye 3, loop 2 and thimble 1 made in one piece. 4th. In a pulley-block, composed of wooden cheeks and skeleton metal frames *d* placed over such cheeks, and all rivetted together, combined with sheave *a*, end pieces *g*, strap *c*, hook *i* and becket *k*.

No. 14,862. Improvements in Fog Horns.
(*Perfectionnements aux signaux de brume.*)

Ole C. Hansen, Skudesnoes, Norway, 23th May, 1882; for 5 years.

Claim.—1st. In a fog signal apparatus, the combination, with a horn I and air chamber B, of the bellows D D: having suitable link connections *g g*, and the shaft E provided with oppositely placed cranks *e e* and turn handle F. 2nd. The combination, with the horn I, of the box A having air vents *i* and provided interiorly with the rigid air chamber B, the latter having a super-adjacent spring pressed regulating bellows C, and the sub-adjacent bellows D D: operated simultaneously by the revolving of the double crank shaft E. 3rd. The case A provided with the supporting strap K, the operating crank F arranged upon one side of the said case, in combination with the horn I and the handle strap K arranged upon the opposite side of said case, for carrying and operating the apparatus when in use.

No. 14,863. Improvements on Window Blinds.
(*Perfectionnements aux jalousies.*)

Alexander C. Gibson and William W. Gibson, Toronto, Ont., 29th May, 1882; (Extension of Patent No. 13,547.)

No. 14,864. Improvements on Window Blinds.
(*Perfectionnements aux jalousies.*)

Alexander C. Gibson and William W. Gibson, Toronto, Ont., 30th May, 1882; (Extension of Patent No. 13,547.)

No. 14,865. Improvement on apparatus for measuring mechanical and electrical power.
(*Perfectionnement des appareils à mesurer la force mécanique et électrique.*)

Charles V. Boys, Wing near Oakham, Eng., 30th May, 1882; for 5 years.

Claim.—1st. For measuring mechanical or electrical power, the use of integrating apparatus wherein a cylinder is caused to travel longitudinally in frictional contact with a disk, and is thereby caused to turn more or less round its axis, according as the plane of the disk is more or less inclined thereto, so that the amount of rotary movement thus imparted to the cylinder represents the sum of a series of products of which the spaces moved over by the cylinder and the tangents of the inclinations of the disk are the factors. 2nd. For measuring the work of a steam or other fluid motor engine, the combination of the integrating apparatus with flexible diaphragms, or their equivalents, subject to the pressure of the working fluid. 3rd. For measuring the work transmitted by a revolving shaft, the combination of the integrating apparatus with a differential coupling of the shaft. 4th. For measuring the electricity transmitted through a conductor, the combination of the integrating apparatus with a deflecting galvanometer needle, or movable solenoid core acted on by the electricity measured.

No. 14,866. Improvement on Electric Meters.
(*Perfectionnement des électromètres.*)

Charles V. Boys, Wing near Oakham, Eng., Eng., 30th May, 1882; for 5 years.

Claim.—1st. The method of measuring and registering the quantity of electricity passed through a conductor, by counting the oscillations of armatures or cores operating as a balance wheel governed by the attraction of electro-magnets or solenoids having their coils in

the circuit of the conductor. 2nd. The method of measuring and registering the quantity of electricity passed through a conductor, by counting the oscillations of a balance wheel governed by a torsion spring, the operative length of which is determined by an electro-magnet having its coils in the circuit of the conductor. 3rd. An electric-meter consisting of a balance wheel, or its equivalent, having its oscillations governed by the electric force, in combination with a counter registering the number of oscillations. 4th. The combination of the balance of an electric meter with electric remontoir or impulse apparatus. 5th. The construction of electric meter as described with reference to Figs. 1 to 4 inclusive. 6th. The modified construction of electric meter as described with reference to Fig. 5 to 13 inclusive. 7th. The construction of electric meter as described with reference to Figs. 14, 15 and 16.

No. 14,867. Improvements on Buoyant devices.
(*Perfectionnements aux appareils flottants.*)

Francis W. Brewster, Westminster, Eng., 30th May, 1882; for 5 years.

Claim.—As a new article of manufacture, buoyant devices for life-preserving garments consisting of a series of strips of fabric, or material, stitched across, as at 2, to form pockets, inclosing rows of corks, or similar buoyant material 4, the series of such separately-inclosed rows or strips being connected by eyelets 7.

No. 14,868. Improvements on Harvesters.
(*Perfectionnements aux moissonneuses.*)

John K. Kepner, Little Valley, Min., U.S., 30th May, 1882; for 5 years.

Claim.—1st. The ordinary tongue having a secondary tongue connected with it by a cross bar. 2nd. Ordinary tongue having a secondary tongue connected with it by a cross bar rigidly secured to the ordinary tongue. 3rd. The ordinary tongue having a secondary tongue connected with it by a cross bar rigidly secured to the ordinary tongue by braces. 4th. The ordinary tongue having a secondary tongue connected with it by a cross bar, and a four horse evener pivoted to the said cross bar, and provided with two horse eveners having single trees attached to them. 5th. The ordinary tongue having the secondary tongue connected with it by a cross bar, and a jockey stick uniting the outer ends of the tongues. 6th. The ordinary tongue having a secondary tongue connected with it by a cross bar, and a jockey stick uniting the neck yokes and secured to the outer ends of the tongues.

No. 14,869. Improvements in Clothes Wringers and clothes mangles.
(*Perfectionnements aux essoreuses et aux calandres à linge.*)

Camille Gentesse, Montreal, Que., 30th May, 1882; for 5 years.

Claim.—1st. The combination, with a mangle or wringer of the longitudinals A, logs C, traces D, arms E, and securing device K forming a folding stand for the said machines. 2nd. The combination of the rollers S and N with heart-shaped springs forming bearings V and springs 3rd. The combinations of the rollers S and N and springs T having a bearing block attached thereon. 4th. The combination of the rollers S and N, cams O and springs T.

No. 14,870. Improvements on machines for raising or depressing buggy tops.
(*Perfectionnements aux machines à relever ou abaisser les soufflets des voitures.*)

William Hodge, Uxbridge, Ont., 30th May, 1882; for 5 years.

Claim.—1st. The combination of the lever A, front braces B B and front bows E E. 2nd. The combination of the lever A, front braces B B, bows E E and pin bolt or axle D, which combination controls the position of front bows of buggy top. 3rd. The combination of the prop O solid, or hollow *o*, and pin bolt or axle D, which combination connects the lever A, with the front braces B B. 4th. The combination of the lever A, and latch or stop G attached to inside of back bow F, which permits the lever A, to act as a concealed brace to back bows of top.

No. 14,871. Improvements on Stock Cars.
(*Perfectionnements aux chars à bestiaux.*)

John R. McPherson, Sea Bright, N. J., U. S., 30th May, 1882; for 5 years.

Claim.—1st. As an improvement in means for supplying water to stock in transit in cars, the top supply pipe *c* coupled throughout the train and having the distributing pipe connections *f* of each car, at the upper side, or top part of said supply pipe. 2nd. In railway cars for the transportation of live stock, the means for supplying water to the stock, consisting of the top supply pipe *c* coupled throughout the train, the perforated side distributing pipes, and the pipes J J, the latter connecting alternately one end of each distributing pipe of each car, with said supply-pipe at the upper side or top part thereof. 3rd. The combination in a stock car having side doors arranged alternately at each end, of the top coupled supply pipe *c*, the side distributing pipes *f* and the pipes *ff* arranged to connect one end of each distributing pipe of each car with one end of said supply pipe at its top part or upper surface, the said distributing pipes having the relation to the doors or upper surface.

No. 14,872. Improvements on roof coverings.
(*Perfectionnements aux couvertures des toitures.*)

William H. Kershaw, Widnes, Eng., 30th May, 1882; (Extension of Patent No. 7511.)

No. 14,873. Improvements on Grain Decorticators. (*Perfectionnements aux machines à decortiquer les grains.*)

Wilson Ager, Washington, D. C., U. S., 30th May, 1882; for 5 years.

Claim.—1st. In the process of decortivating grain or cereals, a horizontal screen cylinder which consists, first, in subjecting the grain in a mass sufficient to make its own weight a factor for keeping it against the decortivating surfaces with a pressure sufficient to remove all of the impurities, second, in maintaining an equal feed and discharge of the grain, third, in subjecting the grain to abrading surfaces receiving a relatively fast and slow motion, and fourth, in the withdrawal by air-currents of the impurities through the screen cylinder. 2nd. The combination of the horizontal screen cylinder, provided with a feed opening at one end, the adjustable discharge passages at the opposite end, the decorticators movable in opposite directions, an enclosing shell, and an air blast. 3rd. The combination of the screen-cylinder and its slotted head B₁ with the axially adjustable slotted head B₂ and means for fixing the latter to the head B₁ after its adjustment. 4th. The combination of the screen-cylinder, the decorticators secured both edgewise and flatwise to it, and the central shaft armed with radial decorticators. 5th. The combination of the horizontal cylinder provided with a feed opening at one end, the shaft C, having decorticators mounted on it, the adjustable discharging passages at the opposite end, means for moving the screen and decorticators attached thereto in opposite directions, with a relatively fast and slow speed, an enclosing shell for said cylinder and means for producing an air blast.

No. 14,874. Lacing Stud for Boots and Shoes. (*Bouton pour lacer les chaussures.*)

Mellen Bray, Newton, (assignee of Alfred Dawes, Wakefield,) Mass., U.S., 30th May, 1882; (Extension of Patent No. 7558.)

No. 14,875. Lacing Stud for Boots and Shoes. (*Bouton pour lacer les chaussures.*)

Mellen Bray, Newton, (assignee of Alfred Dawes, Wakefield,) Mass., U.S., 31st May, 1882; (Extension of Patent No. 7558.)

No. 14,876. Improvements on Ash-Sifters (*Perfectionnements aux cribles à cendree.*)

Edward G. Schultz and Frederick Linderman, Buffalo, N. Y., U. S., 31st May, 1882; for 5 years.

Claim.—1st. As an improved article of manufacture, an ash-sifter composed of two semi-circular sections having end walls, said sections being journaled upon axes located in the centre of said sections, whereby the sections are opened and closed by revolving one section around the other. 2nd. Two semi-cylindrical sections D D₁ journaled as specified, in combination with angular sections F F₁ of the journal G and bolt *f*, and the handle H with the socket *h*. 3rd. As an improved article of manufacture, an ash sifter consisting of a hinged casing A having the drawer B, two semi-cylindrical perforated sections D D₁ provided with pivot E and hollow journal G respectively, the latter having the angular section F₁, and the bolt *f* having the angular section F. 4th. In ash sifters having a drum consisting of two semi-cylindrical sections journaled as specified, the means as described whereby said sections are locked together in either an open or a closed position for the object mentioned.

No. 14,877. Improvements on Lumber Dryers. (*Perfectionnements aux séche-ries à bois.*)

Andrew F. Barron, Montreal, Que., (assignee of John J. Curran, Chicago, Ill., U.S.) 31st May, 1882; for 5 years.

Claim.—1st. A drying kiln having the ground floor A of the heating chamber A inclined towards the flue chimney, and steam header pipes B C following the inclination of the floor and connected by circulating coils D. 2nd. The dead air chamber G, fixed to the ceiling of the heating chamber A, the bottom of said air chamber correspondingly inclined to the floor A₁. 3rd. A drying kiln having the floor

G₂ of the drying chamber G₁, and the floor A₁ of the heating chamber A inclining in opposite directions. 4th. The metallic floor section R at the outlet of the hot air space S, to distribute and equalize the heat. 5th. The chimney J built the full width of the drying chamber G₁ and contracted towards the top. 6th. The chimney J having a damper chamber M extending the full width of the drying chamber G₁ and provided with a damper N, for deflecting the current into the damper chamber, or directly up the flue. 7th. The portable truck sections, consisting of planks V V carried upon two wheels W W, each having a centre projecting flange X, to run between rails, and a tread Y, on both sides, to bear on the top of rails T T.

No. 14,878. Improvements on Hoes. (*Perfectionnements aux hoes.*)

Frank A. Tryon, Unionville, Ct., U.S., 31st May, 1882; for 5 years.

Claim.—The hoe blade *a* having the acute angle end, and the turned up leaf with its edge meeting the edge of the blade.

No. 14,879. Process for manufacturing white lead pigments. (*Procédé de préparation des couleurs au blanc de plomb.*)

George T. Lewis, Philadelphia, Pa., and Eayre O. Bartlett, Pemberton, N.J., U.S., 31st May, 1882; for 5 years.

Claim.—1st. The manufacture of white lead-pigment by subjecting lead compounds to the joint action of heat and a blast of air. 2nd. The process of connecting white lead fumes produced by volatilization and oxidation of lead in lead-compounds, by forcing them through cooling pipes, in combination with strainers of textile fabric, thus arresting the solid lead fumes and allowing the gases to pass through the interstices of the fabric.

No. 14,880. Sickle Grinding Machine. (*Machine à remouler les faucilles.*)

William S. Ingraham, Wankegan, Ill., U.S., 31st May, 1882; (Extension of Patent No. 7516.)

No. 14,881. Improvement on Finger, Scarf and other rings. (*Perfectionnement des joncs, anneaux de cravates, etc.*)

Robert J. LaGrange, Philadelphia, Pa., U.S., 31st May, 1882; for 5 years.

Claim.—1st. The ring having a socket, and a head removably fitted to said socket, whereby the head may be removed and different heads substituted therefor. 2nd. A ring having an adjustable bow and a fastening therefor concealed by the head of the ring. 3rd. A ring formed of a head and an adjustable bow, the movable section or portion whereof is formed with openings, and a fastening pin on the head of the ring engaging with either of said openings. 4th. The ring formed with a removable head with a sectional bow and a fastening pin, the parts being combined and operating as described. 5th. In an adjustable ring, the movable section, in combination with a fastening pin attached to, and concealed by the head of the ring.

No. 14,882. Improvements on Adjustable Writing Tables. (*Perfectionnements aux secrétaires.*)

John A. Harriman, Bellaire, Mich., U.S., 31st May, 1882; for 5 years.

Claim.—1st. The sunken top table A, movable frames D K, frame L, carrying curved supports M and springs O, vertically moving book rest N and adjustable elastic arm rest U. 2nd. The book rest N having two sections N₁ N₂, pivoted supports and springs, whereby the sections are movable alternately up and down from right to left, and left to right to hold the book. 3rd. The combination, with the frames D K, of the angle bat Q, carrying sheave or pulley *q*, the weighted cord V and the pivoted shoe R, and the treadle mechanism. 4th. The combination, with the movable frames D K, of the frame L provided with lugs *f f*, rods *g g*, curved supports M and springs O. 5th. The combination of the slotted adjustable bearing-brackets *n* with the shaft U₁, the flat spring X and the loosely hinged plate U.

INDEX OF INVENTIONS.

Alarm apparatus, electric, S. S. Applegate.....	14,761	Fixtures, curtain, C. Buckley.....	14,727
Arms, magazine fire, A. Schneider.....	14,787	Fog horns, O. C. Hansen.....	14,862
Bag, broom, V. E. Fuller.....	14,848	Gas apparatus, W. Duffield et al.....	14,851
Bags, mail, S. Smith et al.....	14,745	Gates, E. P. Compton.....	14,724
Baking powder, A. Giesecke.....	14,803	Gathering machines, The Toronto Reaper and Mower Company.....	14,711
Barrel heads, The American Paper Barrel Co'y.....	14,759	Generators, steam, G. H. Watson.....	14,814
Barrels, F. S. Olmstead, et al.....	14,725	Grain decorticators, W. Ager.....	14,873
Bars, grate, J. C. Knoeppel.....	14,749	Grate bars, J. C. Knoeppel.....	14,749
Battling machine, cotton, T. F. Dunn.....	14,779	Grinding mills, J. Elliott.....	14,816
Bearings, anti-friction, T. F. Hemmick.....	14,764	" machine, sickle, W. S. Ingraham.....	14,880
Beds, folding, F. B. and W. A. Williams.....	14,731	Halters, C. S. Upton et al.....	14,729
Berths, ships, A. A. Young.....	14,855	Harrows, E. E. Whipple.....	14,771
Binders, grain, L. Miller.....	14,772	" sulky, C. La Dow.....	14,770
" " P. Wallace.....	14,794	" spring tooth, H. Springer et al.....	14,854
Blinds, window, A. C. and W. W. Gibson.....	14,863	Harvesters, D. Patterson.....	14,795
" " E. W. Bowslaught.....	14,837	" J. K. Kepner.....	14,868
Blocks, Pulley, J. W. Norcross.....	14,861	Head, barrel, The American Paper Barrel Co'y.....	14,759
" treating wood, J. B. Blythe.....	14,856	Heaters, E. E. Spencer.....	14,708
Blueing packages, E. W. Gillett.....	14,822	" feed water, G. H. Watson.....	14,814
Bolt fastener, M. Thibault.....	14,755	" " J. H. Turner.....	14,739
Boring feloes, machine for, H. J. Miller.....	14,808	Hoes, F. A. Tryon.....	14,878
Boots and shoes, A. O. Lemay.....	14,757	Hogs, machine for singeing, W. Morgan.....	14,857
" M. Bray.....	14,874	Holdbacks, M. Miller.....	14,853
Box, car axle, W. W. Whitaker.....	14,774	Hoop, barrel, W. Bowker.....	14,835
Boxes, journal, C. E. Sampson.....	14,775	" planing machines, H. F. Campbell.....	14,628
Brakes, railway, G. O. S. Conway et al.....	14,788	" splint machines, ".....	14,738
" " J. F. Mallinckrodt.....	14,806	Houses, portable, J. Rielly.....	14,733
Bricks, J. A. Dupuis.....	14,818	Hubs, wheel, M. L. Smith et al.....	14,850
Buckles, tug, M. T. Shadduck.....	14,832	Indices, J. H. Wagstaff.....	14,750
Buffer, shoe sole, F. Winslow.....	14,789	Knitting machines, H. C. Shaw.....	14,846
Buggy tops, W. Hodge.....	14,870	" " The Shaw Glove Co'y.....	14,732
Building materials, A. Pelletier et al.....	14,768	Knives, burnishing, L. Faber.....	14,844
Buoyant devices, F. W. Brewster.....	14,867	Label holders, J. F. Burdordf.....	14,831
Burners, hydro-carbon, E. A. Edwards.....	14,747	Lamps, electric, A. G. Waterhouse.....	14,767
" vapour, A. H. Watkins.....	14,740	" " J. Jamieson.....	14,721
Burning process, lime, F. B. Livingston.....	14,726	" gas, I. M. Rose.....	14,807
Burnishing knives, L. Faber.....	14,844	" self-extinguishing, W. Scott.....	14,839
Bustles, J. Stewart.....	14,743	Lanterns, signal, J. J. Robinson.....	14,764
Calendars, perpetual, T. H. Hovendon.....	14,860	Lead pigments, white, G. T. Lewis et al.....	14,879
" time piece, G. E. Sanford et al.....	14,769	Leather cutting machines, J. I. and H. Pellerin.....	14,798
Cars, stock, J. R. McPherson.....	14,871	Lifting machine, R. Kirkpatrick.....	14,842
Chairs, invalid, A. S. Evans.....	14,763	Lighting mechanism, I. M. Rose.....	14,807
Chambers, preserving, C. Boss.....	14,710	Lime burning process, F. B. Livingston.....	14,726
Cheese machines, W. Cooley.....	14,776	Mangles, clothes, C. Gentesse.....	14,869
Chucks, planer's, J. H. Greenwood.....	14,719	Measuring apparatus, C. V. Boys.....	14,865
Coating process, wire, L. L. Smith.....	14,714	Mechanical power, ".....	14,865
Cockeyes and sockets, M. Miller.....	14,880	Meters, electric, ".....	14,866
Coffer dams, H. P. Kirkham.....	14,826	Mills, fanning, R. J. Horton.....	14,709
Coloring process, H. M. Vaugham.....	14,829	" grinding, J. Elliott.....	14,816
Concentrators, ore, E. Warne.....	14,811	" pulverizing, C. Ross, Jr.....	14,762
Corsets, F. Compton.....	14,758	Mittens, J. Nelson et al.....	14,796
Couplers, car, G. O. S. Conway et al.....	14,789	Moccasins, G. Bolvin.....	14,783
" " H. Mitchell.....	14,802	Mortar and plaster, W. Arrouquier et al.....	14,786
" " W. Hunter.....	14,778	Motors, J. Sutliff.....	14,813
Couplings, car, A. Leyden.....	14,787	Moulds, car wheel, J. Thierry.....	14,792
" " W. E. Thompson.....	14,780	Mowing machines, A. Gordon et al.....	14,734
" waggon, T. C. Waller.....	14,834	Ores, concentrators for, E. Warne.....	14,811
Coverings, roof, W. H. Kershaw.....	14,872	Ottomans and registers, J. A. Graham et al.....	14,756
Crocheting machines, H. M. Paynter.....	14,849	Ox shoes, A. Sanford.....	14,785
Cultivators, spring tooth, H. Springer et al.....	14,854	Packages, blueing, E. W. Gillett.....	14,822
Curtain fixtures, C. Buckley.....	14,727	Pails, C. Kinney.....	14,804
Cutting machine, leather, J. I. and H. Pellerin.....	14,798	Paving materials, A. Pelletier et al.....	14,768
Cutting tenons, machine for, H. J. Miller.....	14,808	Pigments, white lead, G. T. Lewis et al.....	14,879
Decorticators, grain, W. Ager.....	14,873	Planer's chucks, J. H. Greenwood.....	14,719
Distilling apparatus, G. Race.....	14,836	Planing machines, hoop, H. F. Campbell.....	14,728
Drill and broadcast sowers, J. Fraser.....	14,852	Plaster and mortar, W. Arrouquier et al.....	14,786
Dryers, lumber, A. F. Barron.....	14,877	Plastic material, M. B. Church.....	14,800
Drying apparatus, wood, D. F. Noyes.....	14,742	Powder, baking, A. Giesecke.....	14,803
Electrical power, C. V. Boys.....	14,865	Power measuring apparatus, C. V. Boys.....	14,865
Engines, rotary, R. Hodson.....	14,815	" treadle, motive, W. Cooper.....	14,841
Evaporating apparatus, D. H. Gowling.....	14,748	Potato separating machines, W. Penniston.....	14,845
Evaporators, sap, P. S. Ewins.....	14,735	Preserving chambers, C. Boss.....	14,710
Fabrics, elastic, T. Taylor et al.....	14,824	Presses, baling, N. W. Herring.....	14,825
" fibrous, E. M. Doubleday.....	14,827	" printing, E. Prouty.....	14,809
" fur-coated, ".....	14,791	" " The Gilman Vertical Pruss Co'y.....	14,716
Fanning mills, R. J. Horton.....	11,709	Pressing machine, R. Kirkpatrick.....	14,842
Fastener, bolt, M. Thibault.....	17,755	Printing machines, H. P. Feister.....	14,793
Feed mechanism, J. H. Hermance.....	14,712	Pulley blocks, J. W. Norcross.....	14,859
Feloes, machine for boring, H. J. Miller.....	14,808	Pulverizers, dry, S. P. M. Tasker.....	14,717
Fences, J. DuBois.....	14,858	Pulverizing mills, C. Ross, Jr.....	14,762
Fence strips, barbed, T. C. Hewitt.....	14,744	Radiators, W. J. Carshore.....	14,843
Fibre, treating vegetable, J. B. Blythe.....	17,856	Rakes, hay, W. Hitchcock.....	14,781
Fibrous materials, H. M. Vaughan.....	17,829	Registers and ottomans, J. A. Graham et al.....	14,756
Fifth wheels, G. Dynes.....	14,782	Rings, finger and scarf, R. J. Lagrange.....	14,881
Filters, H. C. Rice.....	14,823	" neck yoke, C. Shuman.....	14,751
Fire arms, magazine, A. Schneider.....	14,737	Roof coverings, W. H. Kershaw.....	14,872
		Rowlocks, S. Irwin.....	14,819

Saws, gig, W. Cooper.....	14,841	Bronson, E. D., broom bag.....	14,848
Sawing machines, J. Campbell.....	14,723	Brown, O. L., evaporating apparatus.....	14,748
“ “ J. H. Hermance.....	14,712	Buckley, C., curtain fixtures.....	14,727
“ machinery, hoop, W. Bowker.....	14,855	Burgdorf, J. F., label holders.....	14,831
Scrapers, road, J. D. Smith et al.....	14,840	Campbell, H. F., hoop splint machines.....	14,738
Screws, C. D. Rogers.....	14,891	“ “ hoop planing machines.....	14,728
Separating machines, potato, W. Penniston.....	14,845	“ J. sawing machines.....	14,723
Separators and thrashers, J. Fisher.....	14,713	Campton, A. P., gates.....	14,724
“ gold, E. S. Bennett.....	14,784	Carmon, E. D., sleigh shoes.....	14,777
“ ore, E. Warne.....	14,811	Carshore, W. J., radiators.....	14,843
Sewing machines, A. M. Leslie.....	14,833	Church, M. B., plastic material.....	14,800
“ “ J. I. and H. Pellerin.....	14,798	Clark, H. S., vehicle springs.....	14,741
Shirts, I. Schuer.....	14,722	Coates, C. E., et al., halters.....	14,729
Shoes, sleigh, E. D. Cannon.....	14,777	Cooley, W., cheese machines.....	14,776
Shoe sole buffer, F. Winslow.....	14,799	Compton, F., corsets.....	14,758
Shovels, H. W. Sheppard.....	14,780	Conway, G. O. S., et al., car couplers.....	14,789
Sickle grinding machine, W. S. Ingraham.....	14,880	“ “ railway brakes.....	14,788
Sifters, ash, E. G. Schultz et al.....	14,876	Cooper, J., et al., car couplers.....	14,789
Signal lanterns, J. J. Robinson.....	14,764	“ “ railway brakes.....	14,788
Singeing hogs, machine for, W. Morgan.....	14,837	“ “ W., treadle motive power.....	14,841
Sizing tubes, method of, S. A. M. Tasker.....	14,766	Dawes, A., lacing stud.....	14,874
Sleepers, treating, J. B. Blythe.....	14,856	Degarno, D., et al., mowing machines.....	14,734
Sockets and cockeyes, M. Miller.....	14,840	Doubleday, E. M., fibrous fabrics.....	14,827
Soda, perfumed caustic, G. T. Lewis.....	14,817	“ W. E., fur coated fabrics.....	14,791
Sowers, drill and broadcast, J. Fraser.....	14,852	“ “ fibrous fabrics.....	14,827
Spike machines, H. W. Fowler.....	14,715	Dougherty, J., washing machines.....	14,720
Spokes, machine for cutting, H. J. Miller.....	14,808	Draper, J., walking sticks.....	14,736
Springs, car, C. T. Schoen et al.....	14,716	Drummond, G. A., sugar refining process.....	14,805
“ “ G. F. Godley.....	17,773	DuBois, J., fences.....	14,858
“ vehicle, H. S. Clark.....	14,741	Duffield, W., et al., gas apparatus.....	14,851
Sticks, walking, J. Draper.....	14,736	Dunn, T. F., cotton batting machine.....	14,779
Stoppers, bottle, F. Will.....	14,820	Dupuis, J. A., bricks.....	14,818
Stove ornaments, H. A. Matthews.....	14,765	Dynes, G., fifth wheels.....	14,782
Strips, barbed fence, T. C. Hewitt.....	14,714	Edwards, E. A., hydro-carbon burners.....	14,747
Stud, lacing, M. Bray.....	14,874	Elliott, J., grinding mills.....	14,816
Sugar refining process, G. A. Drummond.....	14,805	Emerson, R., et al., mittens.....	14,796
Swages, saw, N. Johnson.....	14,797	Engle, J. L., et al., mail bags.....	14,745
Switches, railway, F. S. Scheffler.....	14,828	English, P., et al., gas apparatus.....	14,851
Tables, writing, J. A. Harriman.....	14,882	Evans, A. S., invalid chairs.....	14,763
Tedders, hay, H. Hitchcock.....	14,781	Ewins, P. S., sap evaporators.....	14,735
Tenons, machine for cutting, H. J. Miller.....	14,808	Faber, L., burnishing knives.....	14,844
Thrashers and separators, J. Fisher.....	14,713	Fairman, F., et al., railway brakes.....	14,788
Time-piece calendars, G. E. Sanford et al.....	14,769	“ “ car couplers.....	14,789
Tops, buggy, W. Hodge.....	14,870	Felster, H. P., printing machines.....	14,793
Toys, mechanical, W. A. Webber.....	14,718	Fisher, J., thrashers and separators.....	14,713
Traces and neckyokes, M. Miller.....	14,848	Fowler, H. W., spike machines.....	14,715
Treadle motive power, W. Cooper.....	14,841	Fraser, J., drill and broadcast sowers.....	14,852
Tricycles, J. A. McKenzie.....	14,817	Fuller V. E., broom bag.....	14,848
Trusses, N. Herrick.....	14,821	Gentesse, C., wringers and mangies.....	14,869
Tubes, welding and sizing, S. P. M. Tasker.....	14,766	Gibson, A. C. and W. W., window blinds.....	14,864
Tuyeres, W. M. and A. A. Riggis.....	14,730	Giesecke, A., baking powder.....	14,803
Undercarriages, P. C. Waller.....	14,834	Gillett, E. W., bluing packages.....	14,822
Valves, steam, J. Neff.....	14,753	Gilman, The, Vertical Press Co'., printing presses.....	14,716
Vaults, grave, G. W. Boyd.....	14,790	Godley, G. F., car springs.....	14,773
Washing machines, J. Dougherty.....	14,720	Gordon, A., et al., mowing machines.....	14,734
Weighing machine, R. Kirkpatrick.....	14,842	Gowing, D. H., evaporating apparatus.....	14,748
Welding tubes, method of, S. P. M. Tasker.....	14,766	Graham, J. A. and A. L., et al., registers and ottomans.....	14,756
Wheels, fifth, G. Dynes.....	14,782	Graves, J., shovels.....	14,760
“ moulds for, J. Thierry.....	14,792	Greenwood, J. H., planers' chucks.....	14,719
Wire coating process, L. L. Smith.....	14,714	Hanson, O. C., fog horns.....	14,862
Wringers, clothes, C. Gentesse.....	14,869	Harriman, J. A., writing tables.....	14,882
Yoke rings, neck, C. Shuman.....	14,751	Hemmick, T. P., anti-friction bearings.....	14,754
“ and traces, neck, M. Miller.....	14,840	Hermance, J. H., sawing machines.....	14,712
INDEX OF PATENTEES.			
Ager, W., grain decorticators.....	14,873	Herrick, N., trusses.....	14,821
American, The, Paper Barrel Co'., barrel heads.....	14,739	Herring, N. W., baling presses.....	14,825
Applegate, S. S., electric alarm apparatus.....	14,761	Hewitt, T. C., barbed fence strips.....	14,744
Armstrong, T., preserving chambers.....	14,710	Hitchcock, H., tedders and rakes.....	14,781
Arrouquier, W., et al., mortar and plaster.....	14,786	Hodge, W., buggy tops.....	14,870
Bancroft, H. N., et al., wheel hubs.....	14,850	Hodson, R., rotary engines.....	14,815
Barrett, T., et al., mortar and plaster.....	14,786	Holden, H. H., treadle motive power.....	14,841
Barron, A. F., lumber dryers.....	14,877	Horton, R. J., fanning mills.....	14,709
Bartlett, E. O., et al., white lead pigments.....	14,879	Hovenden, T. H., perpetual calendars.....	14,860
Bennett, E. S., gold separators.....	14,784	Huffman, G., et al., barrels.....	14,725
Blythe, J. B., treating sleepers, etc.....	14,856	Hunter, W., car couplers.....	14,778
Boivin, G., moccasins.....	14,783	Ingraham, W. S., sickle grinding machine.....	14,880
Bonney, E. G., et al., time piece calendars.....	14,769	Irwin, S., rowlocks.....	14,819
Boss, C., preserving chambers.....	14,710	Ives, G. L., et al., harrows or cultivators.....	14,854
Bowker, W., sawing machinery.....	14,752	Jamieson, J., electric lamps.....	14,838
Bowslaugh, E. W., window blinds.....	14,835	Johnson, N., saw swages.....	14,797
Boyd, G. W., grave vaults.....	14,837	Kellogg, H., fur-coated fabrics.....	14,791
Boys, C. V., electric meters.....	14,790	Kepler, J. K., harvesters.....	14,868
“ “ power measuring apparatus.....	14,867	Kershaw, W. H., roof coverings.....	14,872
Bray, M., lacing stud.....	14,874	Kinney, C., palls.....	14,804
Brewster, F. W., buoyant devices.....	14,866	Kirkham, H. P., coffer dams.....	14,826
		Kirkpatrick, R., lifting machine.....	14,842
		Knoepfel, J. C., grate bars.....	14,749
		LaDow, C., sulky harrows.....	14,770
		LaGrange, R. J., finger and scarf rings.....	14,881

Laraway, G. W., et al., barrel heads.....	14,759	Schoen, C. T., et al., car springs	14,746
Lemay, A. O., boots and shoes.....	14,757	Schultz, E. G., et al., ash sifters	14,876
Lestle, A. M., sewing machines.....	14,833	Scott, C., et al., car springs.....	14,746
Lewis, G. T., perfumed caustic soda.....	14,817	" W., selfextinguishing lamps.....	14,839
" " et al., white lead pigments.....	14,879	Shaddock, M. T., tug buckles.....	14,832
Leyden, A., car couplings.....	14,787	Shaw, H. C., knitting machines.....	14732 14,846
Lindemann, F., et al., ash sifters.....	14,876	" The Glove Co'y., knitting machines.....	14,732
Livingston, F. B., lime burning process.....	14,726	Shephard, H. W., shovels.....	14,780
Lunas, T., et al., building materials	14,768	Shuman, C., neck yoke rings	14,751
McKenzie, J. A., tricycles.....	14,847	Slate, D., et al., barrel heads.....	14,759
McPherson, J. R., stock cars.....	14,871	Smith, G. H., grinding mills.....	14,816
Mallinckrodt J. F., railway brakes.....	14,806	" J. D., et al., road scrapers	14,810
Mason, J., radiators.....	14,843	" L. L., wire coating process.....	14,714
Matthews, H. A., stove ornaments.....	14,765	" M. L., et al., wheel hubs.....	14,850
Miler, H. J., machine for boring felloes.....	14,808	" S., et al., mail bags.....	14,745
" L., grain binders.....	14,772	Spencer, E. E., heaters.....	14,708
" M., neck yokes and traces.....	14,849	Springer, H., et al., harrows or cultivators.....	14,854
" " holdbacks.....	14,853	Stewart, J., bustles.....	14,743
Mitchell, H., car couplers.....	14,802	Strong, F. M., et al., road scrapers.....	14,810
Morgan, W., machine for singlug bogs.....	14,857	Sutliff, J., motors.....	14,813
Morrison, W. A., heaters.....	14,708	Talcott, W. A., et al., mittens	14,796
Neff, J., steam valves.....	14,753	Tasker, S. P. M., dry pulverizers.....	14,717
Nelson, J., et al., mittens	14,796	" S. P. M., welding and sizing tubes.....	14,766
Norcross, J. W., pulley blocks	14,859 14,861	Taylor, T. T., corsets.....	14,758
Noyes, D. F., wood drying apparatus.....	14,742	" T., et al., elastic fabrics.....	14,824
Olmstead, F. S., et al., barrels.....	14,725	Thibault, M., bolt fastener.....	14,755
Patterson, D., harvesters.....	14,795	Thierry, J., moulds for car wheels.....	14,702
Paynter, H. M., crocheting machines.....	14,849	Thompson, W. E., car couplings.....	14,780
Pellerin, J. I. and H., latner cutting machine.....	14,798	Toronto, The, Reaper and Mower Co'y., gathering machines	14,711
Pelletier, A., et al., building materials	14,768	Tryon, F. A., hoes.....	14,878
Penniston, W., potato separating machines.....	14,845	Turner, J. H., feed water heaters.....	14,739
Poppowell, W. W., et al., elastic fabrics.....	14,824	Upton, C. S., et al., halters	14,729
Prouty, E., printing presses.....	14,809	Vaughan, H. M., colouring process	14,830
Race, G., distilling apparatus.....	14,836	Wagstaff, J. H., indices.....	14,750
Rausch, E. C., et al., registers and otomans.....	14,756	Wallace, P., grain binders.....	14,794
Rice, H. C., filters.....	14,823	Waller, T. C., waggon couplings.....	14,834
Richard, F. H., printing presses.....	14,716	Warden, A., journal boxes.....	14,775
Rielly, J., portable houses.....	14,733	Warne, E., concentrators and separators for ores.....	14,811 14,812
Riggin, G. W., tuyeres.....	14,730	Waterhouse, A. G., electric lamps.....	14,767
" W. M. and A. A., tuyeres.....	14,730	Watkins, A. H., vapour burners.....	14,740
Robinson, J. J., signal lanterns.....	14,764	Watson, G. H., steam generators.....	14,814
Rogers, C. D., screws	14,801	Webber, W. A., mechanical toys.....	14,718
Rorebeck, H., halters.....	14,729	Whipple, E. E., harrows	14,771
Rose, I. M., lighting mechanism.....	14,807	Whitaker, W. W., car axle box.....	14,774
Ross, C., Jr., pulverizing mills	14,762	Whiteley, W. N., gathering machines.....	14,711
Sampson, C. E., journal boxes.....	14,775	Will, F., bottle stoppers.....	14,820
Sanford, A., ox shoes.....	14,785	Williams, F. B. and W. A., folding beds.....	14,731
" G. E., et al., time piece calendars.....	14,769	Winslow, F., suce sole buffer.....	14,799
Scheffer, F. S., railway switches.....	14,828	Young, A. A., ships berths.....	14,855
Schneider, A., magazine fire arms.....	14,737	" C., crocheting machines	14,849
Schneefer, I., shirts.....	14,722		

Patents issued up to 31st July, 1882, Claims and Drawings of which will appear in a subsequent number of the Patent Record.

- No. 15,044. W. C. Kewen, Rochester, N. Y., "Refrigerator," 4th July, 1882.
- No. 15,045. E. C. Converse, Pittsburg, Penn., "Tube Coupling," 4th July, 1882.
- No. 15,046. O. H. Dervell, Chicago, Ill., "Lubricator," 4th July, 1882.
- No. 15,047. A. L. Blakman, New York, N. Y., "Aerial Ship," 4th July, 1882.
- No. 15,048. F. Outram, Montreal, Que., "File Cutting Machine," 5th July, 1882.
- No. 15,049. W. Downham, St. Johns, Mich., "Waggon Wheels," 5th July, 1882.
- No. 15,050. T. Guerin, San Francisco, California, "Sink and Sewer Trap," (Extension of Patent No. 7646.) 5th July, 1882.
- No. 15,051. L. B. Benton, Milwaukee, Wisconsin, "Mould for Casting Printers' Leads," 5th July, 1882.
- No. 15,052. C. L. Travis, Minneapolis, Minnesota, "Sweeper," 5th July, 1882.
- No. 15,053. G. Walsh, Brockwayville, Penn., "Saw Dressing Tool," 5th July, 1882.
- No. 15,054. G. Walsh, Brockwayville, Penn., "Saw Jointer," 5th July, 1882.
- No. 15,055. P. J. Kern, Frankport, Indiana, "Vehicle Springs," 5th July, 1882.
- No. 15,056. O. C. White, Kopkinton, Mass., "Ball and Socket Joint," 5th July, 1882.
- No. 15,057. P. B. Delany, New York, N. Y., "Electric Cable," 5th July, 1882.
- No. 15,058. S. W. Martin, Springfield, Ohio, "Fences and Gates," 5th July, 1882.
- No. 15,059. H. Wesson, Manuphis, Tenn., "Wire Fence," 6th July, 1882.
- No. 15,060. C. F. Anderson, Bay, Mich., "Lanterns," 6th July, 1882.
- No. 15,061. B. J. Willard, Portland, Maine, "Life Preserver," 6th July, 1882.
- No. 15,062. E. W. L. Rice, Aurora, Ill., "Stove Platforms," 5th July, 1882.
- No. 15,063. J. Beiersdorf and W. I. Bunker, Chicago, Ill., "Rocking Chairs," 6th July, 1882.
- No. 15,064. H. F. Bindseils, New York, N. Y., "Reversible Cloaks," 6th July, 1882.
- No. 15,065. J. A. Bartholomew and H. Bartholomew, Vanessa, P. O. (Assignee of O. F. Tiffany, of Rochester, N. Y.), "Evaporator," 8th July, 1882.
- No. 15,066. J. E. Q. Maddox, Cincinnati, Ohio, and G. P. Humphries, Alexandria, Kentucky, "Gates," 8th July, 1882.
- No. 15,067. J. H. Nolan, Boston, Mass., "Fire Proof Boxes, Safes and Material," 8th July, 1882.
- No. 15,068. Francis Lattimer, Richmond, Halifax, A. C. Van Meter, Hiram Hyde, N. H., Bates W. McCully, A. L. McKenzie, and John Ahern, Turo, N. S., "Knob Spindle Fastenings for Mortis Locks," 8th July, 1882.
- No. 15,069. J. W. Swan, Newcastle, Eng., "Apparatus for Storing Electricity," 8th July, 1882.
- No. 15,070. E. E. Brown and G. E. Bird, Portland, Maine, "Blanket Fasteners," 8th July, 1882.
- No. 15,071. D. H. Burrell, Little Falls, N. Y., Assignee of D. H. Burrell, and W. W. Whiteman, "Vat for Heating and Saturating Hoops, Planks, etc.," 8th July, 1882.
- No. 15,072. E. Thompson, New Britain, Conn., "Commutators for Dynamo," 8th July, 1882.
- No. 15,073. L. Daul, Buffalo, N. Y., "Rectifying Apparatus," 8th July, 1882.
- No. 15,074. A. R. Appleman, Washington, "Double Huller Clover Machine," (Extension of Patent No. 7616.) 8th July, 1882.
- No. 15,075. J. M. Fair, Buffalo, N. Y., (Assignee of D. Leib, Columbus, Ohio, "Sewing Machine Treadle," (Extension of Patent No. 11,441.) 8th July, 1882.
- No. 14,076. J. M. Laughlin, Boston, Mass., (Assignee of J. D. Sumner, Sexington, Middlesex, "Machine for Making Horse Shoe," (Extension of Patent No. 7693.) 8th July, 1882.
- No. 15,077. W. B. Noyes, Saginaw, Mich., "Curtain Roller," 10th July, 1882.
- No. 15,078. T. Green, Northampton, Eng., "Lace Grip," 10th July, 1882.
- No. 15,079. T. Marshall, East Greenwich, Eng., "Tube Cleaner," 10th July, 1882.
- No. 15,080. S. J. Spittler, Greenville, Mich., "Carpet Fastener," 10th July, 1882.
- No. 15,081. R. M. Appleton, Lake Village, N. H., "Widening Gasket Stockings," 10th July, 1882.
- No. 15,082. J. Earle, Darby, Penn., "Engraving Machines," 10th July, 1882.
- No. 15,083. M. Griffin, Vienna, P. O., "Thrashing Machines," 10th July, 1882.
- No. 15,084. W. Heckert, Yonkers, N. Y., "Card Press," 10th July, 1882.
- No. 15,085. W. Lehmann, Milwaukee, Wisconsin, "Bosom Staff," 10th July, 1882.
- No. 15,086. E. H. Farrar, New Orleans, Louisiana, "Mode and Manner of Securing Shifting Bulk Cargo," 10th July, 1882.
- No. 15,087. E. Thayer, Worcester, Mass., "Hydraulic Elevator," 11th July, 1882.
- No. 15,088. J. Earle, Darby, Penn., "Engraving Script," 11th July, 1882.
- No. 15,089. A. Knowlton, Boston, Mass., "Mailing Machine," 11th July, 1882.
- No. 15,090. M. A. Nicholson, Richwood, Ohio, "Cooking Stoves and Ranges," 11th July, 1882.
- No. 15,091. P. H. Kells, A. Kells and J. M. Kells, Adrian, Mich., "Brick Machine," 11th July, 1882.
- No. 15,092. F. W. Boxer, et al., Montreal, Que., (Assignee of F. N. Boxer), Quebec, "Fire Proof Solution and Roofing Compound," 11th July, 1882.
- No. 15,093. D. W. Davis, Detroit, Mich., "Beer Cooler," 11th July, 1882.
- No. 16,094. E. Dunlop, Chester, Penn., "Safety Signal," 11th July, 1882.
- No. 15,095. D. G. Weems, Baltimore, Maryland, "Artificial Stone," 12th July, 1882.
- No. 15,096. J. Daigneau, Hyacinthe, Que., "Car Covering," 11th July, 1882.
- No. 15,097. C. Kinney, Windsor, Ont., "Fence Posts," 12th July, 1882.
- No. 15,098. A. Gordon, Detroit, Mich., "Cigar Bunching Machine," 12th July, 1882.
- No. 15,099. J. Dickieson, Summerside, P. E. I., "Seed Sower," 12th July, 1882.
- No. 15,100. F. M. Lechner, Columbus, Ohio, "Sprocket Wheels," 12th July, 1882.
- No. 15,101. A. Haller, Delaware, O., "Foot Spring," 12th July, 1882.
- No. 15,102. G. A. Cochrane, New York, N. Y., "Darning Last," 12th July, 1882.
- No. 15,103. G. Beck, Waco, Texas, "Lamp Wick," 12th July, 1882.
- No. 15,104. G. F. Sterne, Guelph, Ont., "Stove Board," 12th July, 1882.
- No. 15,105. R. L. Walker, Boston, Mass., "Fire Box," 12th July, 1882.
- No. 15,106. F. C. Ayer, Columbus, Ohio, "Dash Feet and Foot Rail," 12th July, 1882.
- No. 15,107. H. B. Butterfield, Toronto, Ont., "Paragon Check Book," 12th July, 1882.
- No. 15,108. E. Speeler, Boston, Mass., (Assignee of A. T. Anderson-Chelsea, Mass., "Netting Machine," (Extension of Patent No. 12,614.) 12th July, 1882.
- No. 15,109. E. Keeler, Boston, Mass., (Assignee of A. T. Anderson-Chelsea, Mass., "Netting Machine," (Extension of Patent No. 12,614.) 13th July, 1882.
- No. 15,110. H. Frasch, Philadelphia, Penn., "Separation and Treatment of Oils," (Extension of Patent No. 7691.) 13th July, 1882.
- No. 15,111. H. Frasch, Philadelphia, Penn., "Separation and Treatment of Oils," (Extension of Patent No. 7691.) 14th July, 1882.
- No. 15,112. J. Head, Strathroy, Ont., "Stone Turret Walling," (Extension of Patent No. 7642.) 14th July, 1882.
- No. 15,113. H. A. Stearns, Lincoln, R. I., "Gate," (Extension of Patent No. 8016.) 14th July, 1882.
- No. 15,114. J. S. Fox, Oshawa, Ont., "Wringer," (Extension of Patent No. 7658.) 15th July, 1882.
- No. 15,115. W. Wheeler, Concord, Mass., "Reflector Attachments," 15th July, 1882.
- No. 15,116. J. Cosgrove, et al., Mount Pleasant, Iowa, "Dray Scraper," 15th July, 1882.
- No. 15,117. J. H. Schoonmaker, Winona, Minn., (Assignee of H. D. Morse, et al., Winona, Minn., "Lightning Rods," 15th July, 1882.
- No. 15,118. B. W. Webb, London, Eng., "Registering Till," 15th July, 1882.
- No. 15,119. H. H. Beach, Litchfield, Ill., "Slide Valve," 15th July, 1882.
- No. 16,120. A. S. Burnham, Parkersburg, Iowa, "Bed Bottoms," 15th July, 1882.
- No. 15,121. L. B. Spencer, Kingston, Ont., (Assignee of G. Adams, Kingston) "Locks," 15th July, 1882.
- No. 15,122. O. C. Whitney, Cleveland, Ohio, "Organ Cases," 15th July, 1882.
- No. 15,123. W. W. Bell, Valley Springs, Dakota, "Hame Fasteners," 15th July, 1882.
- No. 15,124. J. L. Clark, et al., Oshkosh, Wis., (Assignees of B. M. Soule, Cedar Rapids, Iowa, "Gear for Buggies," 15th July, 1882.
- No. 15,125. R. Mowry, Ashburnham, Ont., Assignees, "Gang Shoe," (Extension of Patent No. 7648.) 15th July, 1882.
- No. 15,126. O. L. Hatch, Elmira, N. Y., Assignees, "Spring Bed," (Extension of Patent No. 7667.) 15th July, 1882.
- No. 15,127. W. H. Field, Port Chester, N. Y., Assignees, "Horse Hay Rake," (Extension of Patent No. 7671.) 15th July, 1881.

No. 15,128. W. H. Field, Port Chester, N. Y., Assignees, "Horse Hay Rake." (Extension of Patent No. 7671, 17th July, 1882.

No. 15,129. P. J. Singer, Chicago, Ill., Assignees, "Safety Elevator for Hatchways," 17th July, 1882.

No. 15,130. O. Sweet, Benson, Hamilton, N. Y., "Blanket Fasteners," 19th July, 1882.

No. 15,131. D. M. Schell, Syracuse, N. Y., "Bookcase," 19th July, 1882.

No. 15,132. J. H. Ayres, Park, Ks., "Snow Plough," 19th July, 1882.

No. 15,133. J. J. Wright, Parkdale, Ont., "Armatures for Dynamo Electric Machines," 19th July, 1882.

No. 15,134. E. T. Durmby, Hanover, Hampshire, "Telephone Switch," 19th July, 1882.

No. 15,135. W. S. Holland, Burlington, Vermont, "Thin Wood Planer," 19th July, 1882.

No. 15,136. W. Robinson, Boston, Mass., "System of Radial Cars and Trucks," 19th July, 1882.

No. 15,137. J. A. Bonnell, New York, N. Y., "Interlocking Switch and Signal System," 19th July, 1882.

No. 15,138. W. S. Lawson, Lowell, Mass., "Automatic Cash Carrier," 19th July, 1882.

No. 15,139. C. Schofield, Bridgeport, Conn., "Lounge Bed," 19th July, 1882.

No. 16,140. G. Smith, Astoria, N. Y., "Telegraphic Receiving instrument," 19th July, 1882.

No. 15,141. J. Stewart, New Glasgow, N. S., "Lifting Jack," 19th July, 1882.

No. 15,142. J. S. Trites, Moncton, N. B., "Telegraph and Railway Balance Signal," 19th July, 1882.

No. 15,143. A. J. Schultze et al., Galveston, Texas, "Snatch Fastener," 21st July, 1882.

No. 15,144. E. Salomon et al., Montreal, P. Q., "Rotary Cutter," 21st July, 1882.

No. 15,145. C. J. Blakely, Janesville, Wis., "Burnishing Machine," 21st July, 1882.

No. 15,146. W. D. Schooley, Richmond, Ind., "Electric Gas Lighter," 21st July, 1882.

No. 15,147. F. S. Griffith, Toledo, Ohio, "Folding Beds," 21st July, 1882.

No. 15,148. J. W. Cuthbertson, Bothwell, P. Q., "Lamp Filler," 21st July, 1882.

No. 15,149. A. J. Rice, Sodus, N. Y., "Apple Parer," 21st July, 1882.

No. 15,150. A. W. Burke, Stayner, P. O., "Valved Dash Churn," 21st July, 1882.

No. 15,151. A. H. Marden, Cambridge, Mass., "Railway Car Brake," 21st July, 1882.

No. 15,152. S. J. Plant, York, P. O., "Brick Kiln," (Ext. of Patent No. 13,500,) 22nd July, 1882.

No. 15,253. S. J. Plant, York, P. O., "Brick Kiln," (Ext. of Pat. No. 13,500,) 22nd July, 1882.

No. 15,154. W. A. Baglin, Brooklyn, N. Y., and G. Yule, Newark, N. J., "Napped Hats," 22nd July, 1882.

No. 15,155. E. P. Monroe, New York, N. Y., "Metallic Packing for Valve and other Rods," 22nd July, 1882.

No. 15,156. J. W. Norcross, Lockport, N. Y., "Pulley Block," 22nd July, 1882.

No. 15,157. L. W. Serrell, Plainfield, N. J., in trust, "Illuminating Gas," (Ext. of Pat. No. 7677,) 22nd July, 1882.

No. 15,158. P. Learn, Bertie, P. O., "Assignee of E. Hammelmann, Buffalo, N. Y., Portable Forge," (Ext. of Pat. No. 8405,) 22nd July, 1882.

No. 15,159. P. Learn, Bertie, P. O., (Assignee of E. Hammelmann, Buffalo, N. Y., "Portable Forge," (Ext. of Pat. No. 8405,) 24th May, 1882.

No. 15,060. W. Garrity, Malden, and M. Avery, Boston, Mass., "Coating Metallic Articles with Vulcanized Rubber," 24th July, 1882.

No. 15,161. O. Gassett, Boston, Mass., "Electric Railway Signalling Apparatus," 24th July, 1882.

No. 15,162. J. K. Ross, Springfield, Ohio, "Roller Skates and Castors," 24th July, 1882.

No. 15,163. W. A. Baglin, Brooklyn, N. Y., and G. Yule, Newark, N. J., "Shaking Cotton from Napped Hats," 24th July, 1882.

No. 15,164. C. M. Johnson, Lexington, Kentucky, "Rack for Storing Ageing Whiskey," 24th July, 1882.

No. 15,165. E. Bruncker, Cologne, Prussia, "Sewing Machine," 24th July, 1882.

No. 15,166. E. Thompson, New Britain, Conn., "Regulators for Electric Currents," 24th July, 1882.

No. 15,167. A. Webster, et al., Waltham, Mass., "Signalizer," 25th July, 1882.

No. 15,168. J. Lajeunesse, et al., Montreal, Que., "Hub," 25th July, 1882.

No. 15,169. M. E. Dayton, Chicago, Ill., (Assignee of F. V. Phillips,) Chicago, Ill., "Transom Lifter," 25th July, 1882.

No. 15,170. T. Brewer, Toronto, Ont., "Wheeled Barrow," 25th July, 1882.

No. 15,171. C. A. Williamson, Louis, Miss., "Corset and Shoulder Brace," 25th July, 1882.

No. 15,172. G. P. McConnell et al., Cincinnati, Ohio, "Self Belting Pulley," 25th July, 1882.

No. 15,173. G. E. Tewksburg, Newark, N. J., "Elevator," 25th July, 1882.

No. 15,174. D. Jesseman, et al., Lisbon, N. H., (Assignees of C. Jesseman,) "Sewing Machine," 25th July, 1882.

No. 15,175. A. W. Burke, Stayner, P. O., "Liquid Mineral Paint," 25th July, 1882.

No. 15,176. S. K. Hindley, Worcester, Mass., (Assignee of C. W. Shippee, Millford, Mass., "Boots or Shoes," 25th July, 1882.

No. 15,177. F. M. James, Big Rapids, Mich., and J. W. Fearn, "Barrel Cover," 25th July, 1882.

No. 15,178. W. H. Knapp, Galesburg, Mich., "Reel Rake," 25th July, 1882.

No. 15,179. F. J. Lee, et al., Mallorytown, P. O., (Assignees of J. L. Simons, Potsdam, N. Y., "Windmill," 25th July, 1882.

No. 15,180. T. S. Nowell, Boston, Mass., (Assignee of B. Holland,) Newport, R. I., "Hose Pipe and Joint," 25th July, 1882.

No. 15,181. T. H. Nowell, Boston, Mass., (Assignee of B. Holland,) Newport, R. I., "Hydraulic Packing Ring," 25th July, 1882.

No. 14,182. F. M. James et al., Big Rapids, Mich., "Lamp Chimney," 25th July, 1882.

No. 15,182. E. Thomson, Britain, Conn., "Electric Lamp Mechanism," 25th July, 1882.

No. 15,184. H. T. Stock, Toledo, Ohio, "Snow Plough," 26th July, 1882.

No. 15,185. J. W. Krepps, New York, N. Y., "Car Door Fastener," 26th July, 1882.

No. 15,186. O. P. Briggs, Chicago, Ill., "Barbed Wire Machine," 26th July, 1882.

No. 15,187. G. A. Harvie, Windsor, N. S., "Lifting Jack," 26th July, 1882.

No. 15,188. W. King, Montreal, Que., (Assignee of A. Spencer,) "Sectional Boiler," 26th July, 1882.

No. 15,189. C. G. C. Simpson, Montreal, Que., "Ashes Sifter," 26th July, 1882.

No. 15,190. O. M. Hidden, Detroit, Mich., Knob Attachments," 26th July, 1882.

No. 15,191. S. A. McCoffrey and C. M. Leonard, Boston, Mass., "Rocking Chair," 26th July, 1882.

No. 15,192. Atwood Railway Wheel Company, (Assignees, New York, "Car Coupling," 26th July, 1882.

No. 15,193. S. A. IV. Hartwell, Valley Center, Kansas, "Car Coupler," 26th July, 1882.

No. 15,194. D. C. Southwick, Ogdensburgh, N. Y., "Car Coupler," 26th July, 1882.

No. 15,195. The Spiral Spring Buggy Company, Assignee, Grand Rapids, Mich., "Spiral Spring for Vehicles," 26th July, 1882.

No. 15,196. J. W. Krepps, New York, N. Y., Assignee, "Car Door Lock," 26th July, 1882.

No. 15,197. E. Brown, Bowmanville, P. Q., "Organ," 26th July, 1882.

No. 15,198. A. T. Keegan, Pawcatuck, Conn., Assignee, Corn Shelter," 26th July, 1882.

No. 15,200. A. Gardel, Sherbrooke, P. Q., Non-heating French Burr Millstone," 26th July, 1882.

No. 15,201. E. L. Baker, Red Wing, Minn., "Grain Reducing Mill," 26th July, 1882.

No. 15,202. R. Elkwood, Sycamore, Ill., Assignee, "Wire Stretcher," 26th July, 1882.

No. 15,203. W. Jones, Niagara, Falls, N. Y., "Apparatus for Actuating the Followers of Pulping Engines," 31st July, 1882.

No. 15,204. P. B. Delany, New York, N. Y., "Non-Induction Electric Cables," 31st July, 1882.

No. 15,205. Union Electric Manufacturing Company, New York, N. Y., Assignees, "Electric Light Regulator," 31st July, 1882.

No. 15,206. E. Thomson, New Britain, Conn., "Dynamo-Electric Machines," 31st July, 1882.

No. 15,207. P. Medard, St. Louis, Miss., "Belt Pulley," 31st July, 1882.

No. 15,208. F. Plumb, Streaton, Ill., "Steam Ditcher," 31st July, 1882.

No. 15,209. E. Salmon and E. Armand, Montreal, Que., "Anti-Friction Bearing," 31st July, 1882.

No. 15,210. W. Titmas, Brantford, P. Q., "Warp Dresser," 31st July, 1882.

No. 15,211. J. Judson, Rochester, N. Y., "Governors," 31st July, 1882.

No. 15,212. C. A. Hege, Salem, N. C., "Saw Mill," 31st July, 1882.

No. 15,213. W. C. Carpenter, North Stratford, N. H., "Nursing Bottle Regulator," 31st July, 1882.

No. 15,214. O. Tower, Wilson, N. Y., "Thill Coupling," 31st July, 1882.

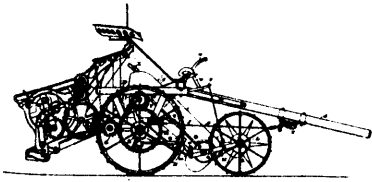
No. 15,215. E. F. Flaherty, Few Baltimore, Mich., "Dry Kiln," 31st July, 1882.

THE
CANADIAN PATENT OFFICE RECORD.
ILLUSTRATIONS.

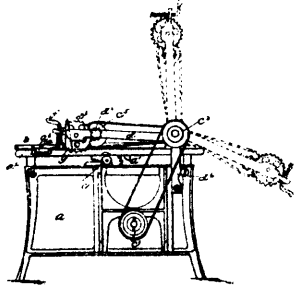
Vol. X.

JUNE, 1882.

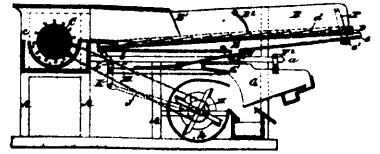
No. 6.



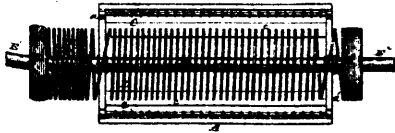
14711 Whiteley's Improvements on Gathering Machines.



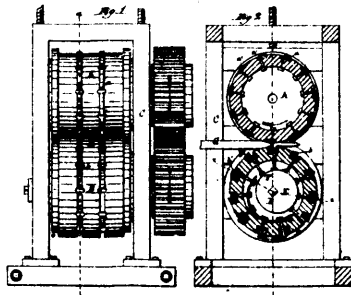
14712 Hermance's Improvements on Feed Mechanism for Circular Sawing Machines.



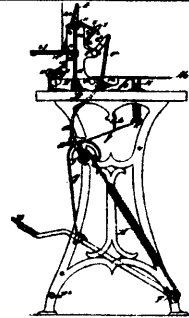
14713 Fisher's Improvements on Thrashers and Separators.



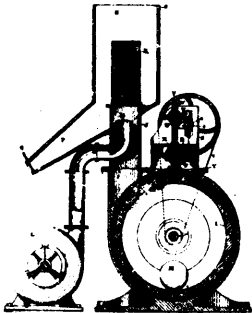
14614 Smith's Improvements on Process and Apparatus for Coating Wire.



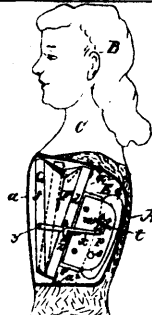
14715 Fowler's Improvements in Spike Machines.



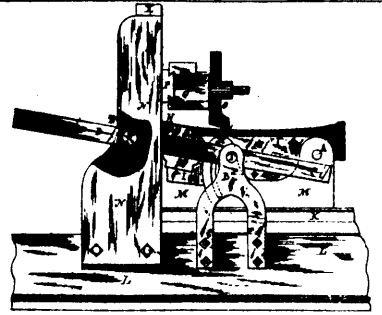
14716 Richards's Improvements on Printing Presses.



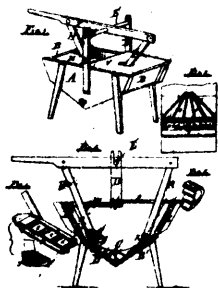
14717 Tasker's Improvements on Dry Pulverizers.



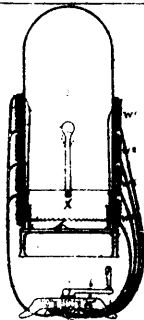
14718 Webber's Improvements on Mechanical Toys.



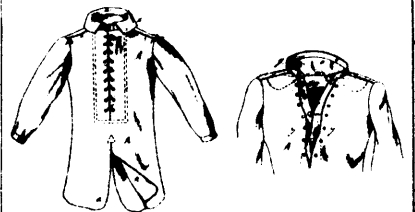
14719 Greenwood's Improvements on Planers' Chucks.



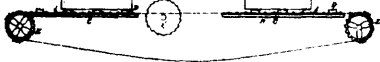
14720 Dougherty's Improvement on Washing Machines.



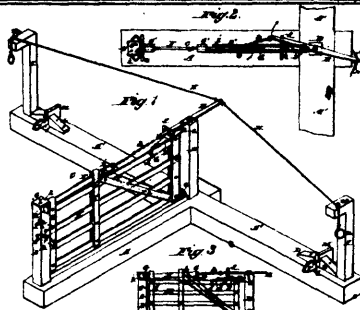
14721 Jamieson's Improvements in Incandescent Electric Lamps



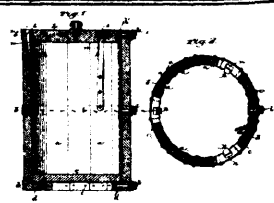
14722 Schnoor's Improvement on Shirts.



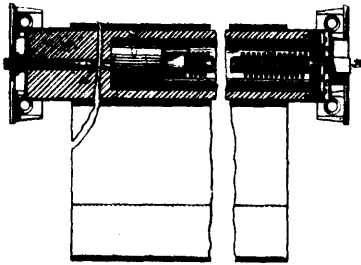
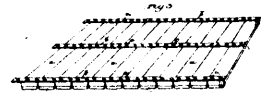
14723 Campbell's Improvements on Railway Tie Sawing Machines.



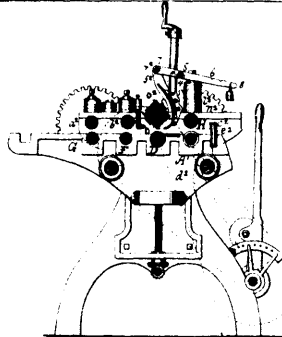
14724 Campton's Improvements in Gates.



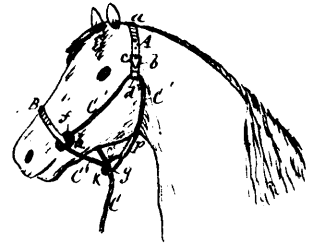
14725 Olmsted & Huffman's Improvements in Knock Down Return Barrels.



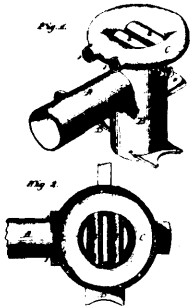
14727 Buckley's Improvements on Curtain Fixtures



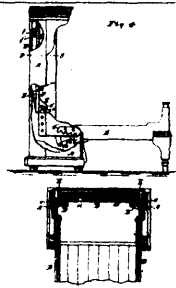
14728 Campbell's Improvements on Hoop Planing Machines.



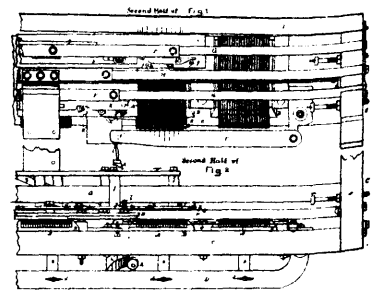
14729 Rurebeck's Improvements on Halters.



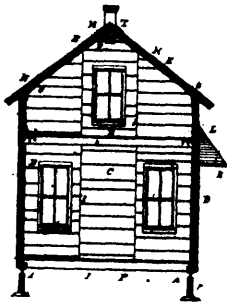
14730 Riggie's Improvements in Tuveres.



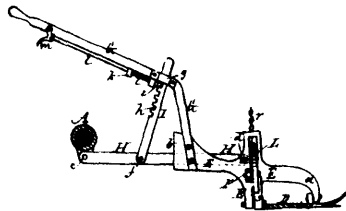
14731 Williams' Improvements in Folding Beds.



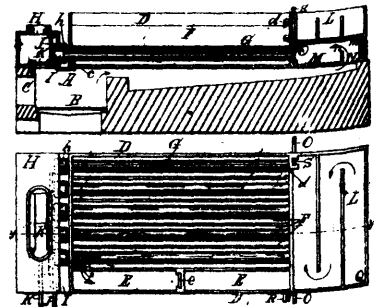
14732 Shaw's Improvements in Knitting Machines.



14733 Rielly's Improvements on Portable Houses.



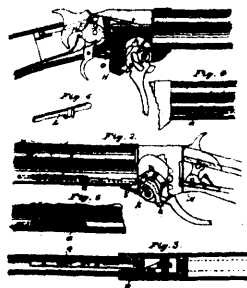
14734 Gordon & DeGarno's Improvements on Mowing Machines.



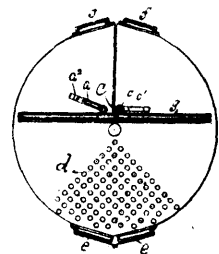
14735 Ewins' Improvements on Sap Evaporators.



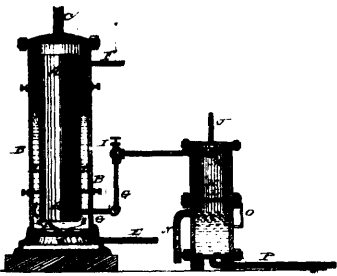
14736 Draper's Improvements on Walking Sticks.



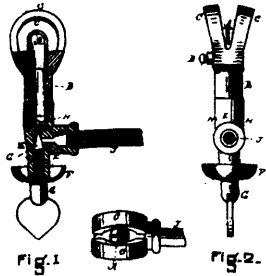
14737 Schneider's Improvements in Magazine Fire Arms.



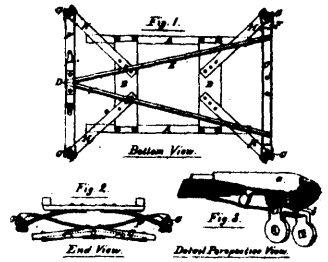
14738 Campbell's Improvements on Hoop Splint Machines.



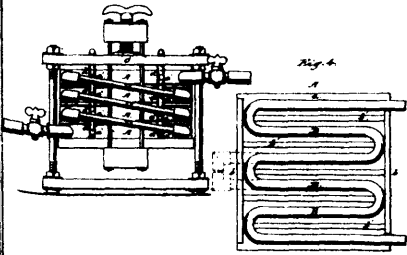
14739 Turner's Improvements on Feed Water Heaters.



14740 Watkins's Improvements on Vapour Burners.



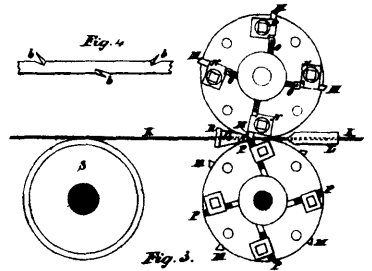
14741 Clark's Improvements on Vehicle Springs.



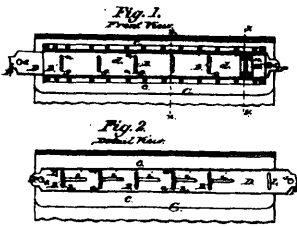
14742 Noyes's Improvements on Wood Drying Apparatus.



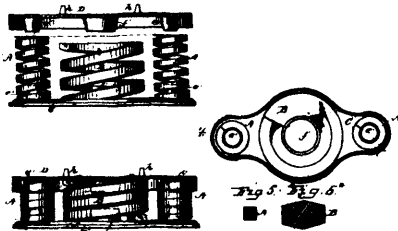
14743 Kelley's Improvements on Bustles.



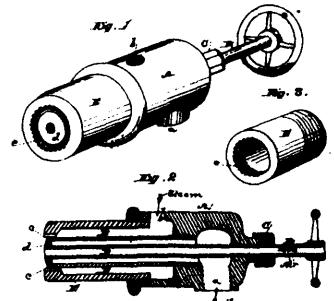
14744 Walmley's Improvements on Machines for Manufacturing Barbed Metal Fence Strips.



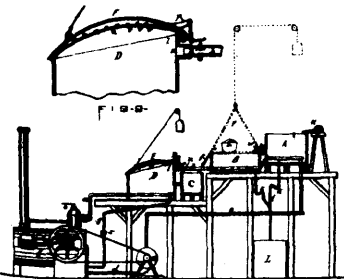
14745 Smith's Improvements on Mail Bags.



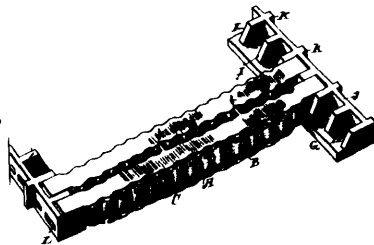
14746 Schoen & Scott's Improvements on Car Springs.



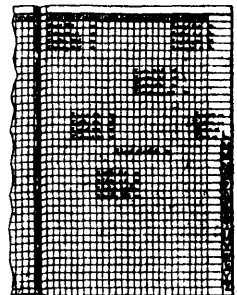
14747 Edwards's Improvements in Hydro-Carbon Burners.



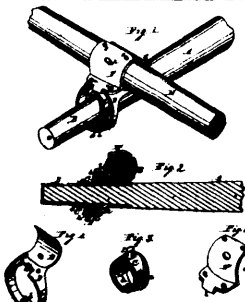
14748 Browney's Improvements on Salt Water Evaporating Apparatus.



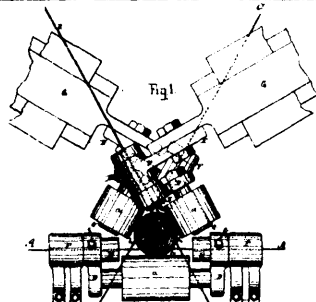
14749 Knoepfel's Improvements in Grate Bars.



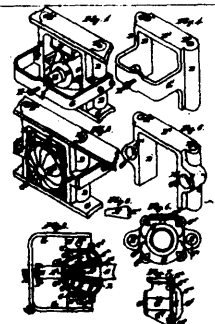
14750 Waggstaff's Improvements in Indicos.



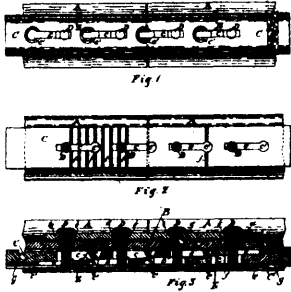
14751 Shuman's Improvements in Neck Yoke Rings.



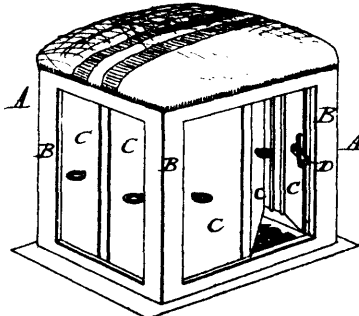
14752 Bowker's Improvements in Machines for Sawing Barrel Heads.



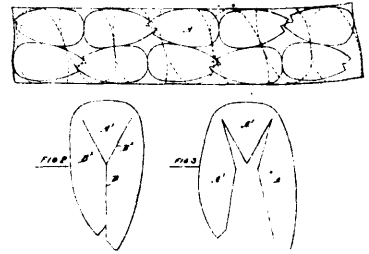
14754 Hemmich's Improvements on Anti-Friction Bearings.



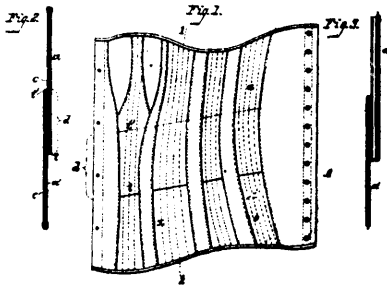
14755 Thibault's Fish-Plate Bolt Fastener.



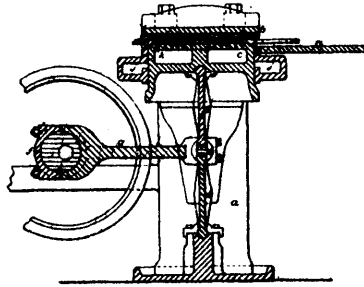
14756 Graham & Rausch's Improvements on Combined Registers and Ottomans.



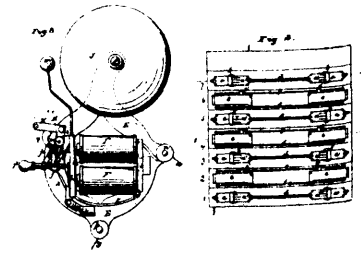
14757 Delorme's Improvements in Boots and Shoes.



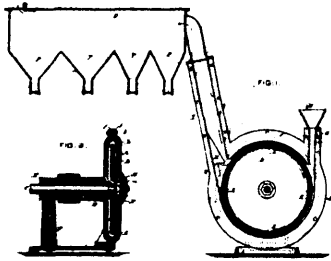
14758 Crompton's Improvement on Corsets.



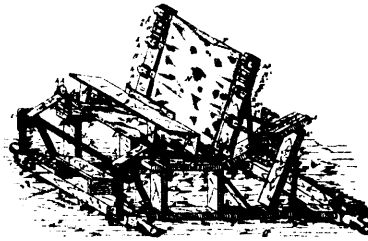
14759 Laraway's Improvements in the Manufacture of Barrel Heads.



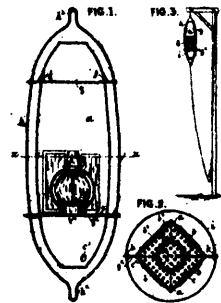
14781 Applegate's Improvements on Electric Alarm Apparatus.



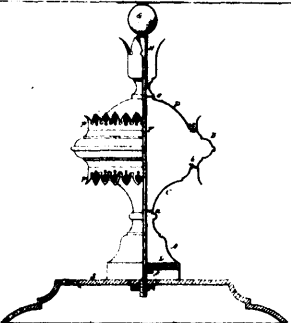
14762 Ross's Improvement in Mills for Pulverizing Hard and Refractory Materials.



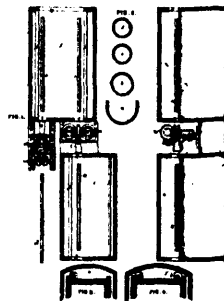
14763 Evans's Improvements on Adjustable Invalid Chairs.



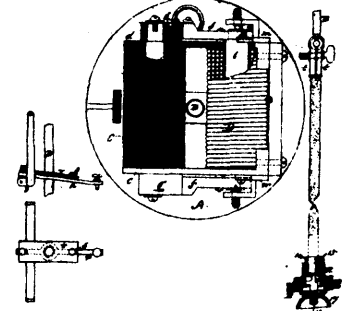
14764 Robinson's Improvements on Signal Lanterns.



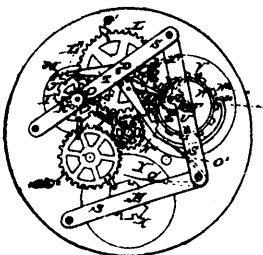
14765 Matthews's Improvements in the Manufacture of Stove Ornaments.



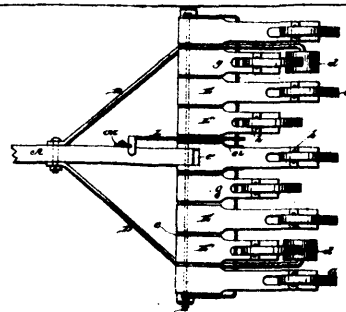
14766 Tasker's Improvements in the Method of Welding and Sizing Tubes.



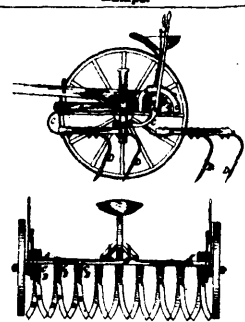
14767 Waterhouse's Improvements on Electric Lamps.



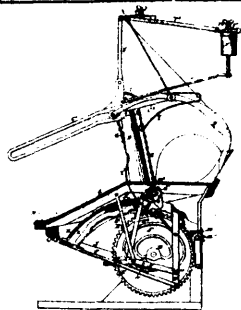
14769 Sanford's Improvements on Time-Piece Calenders.



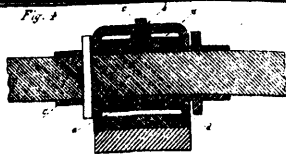
14770 La Dow's Improvements on Sulky Harrows.



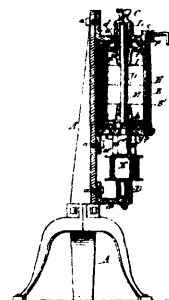
14771 Whipple's Improvement on Harrows.



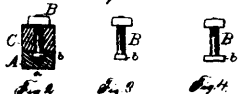
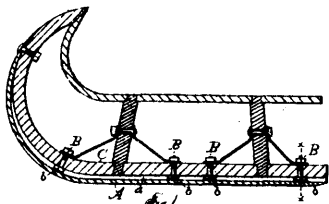
14772 Miller's Improvements in Grain Binders.



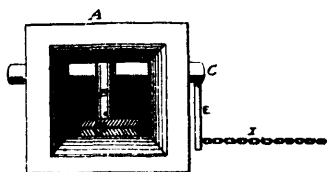
14775 Warden's Improvements on Journal Boxes.



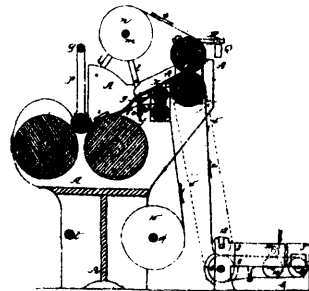
14778 Cooley's Improvements in Cheese Machines.



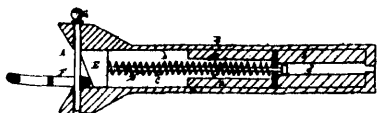
14777 Cannon's Improvements on Sleigh Shoes.



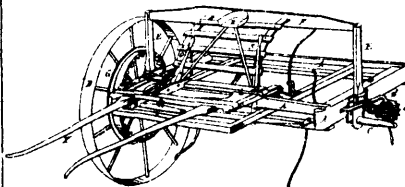
14778 Hunter's Improvements on Car Couplers.



14779 Dunn's Machine for making Cotton Batting.



14780 Thompson's Improvements on Car Couplers.



14781 Hitchcock's Improvements on Hay Todders and Rakes.

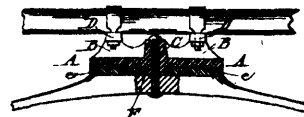
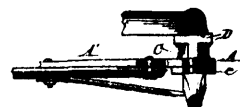
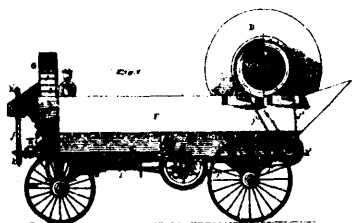


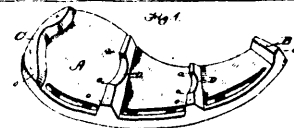
Fig. 2.



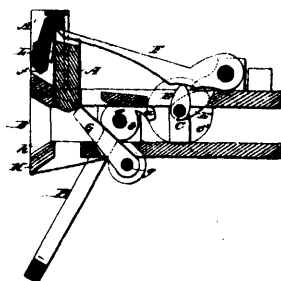
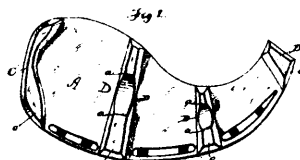
14782 Dynes's Improvements on Fifth Wheels Vehicle.



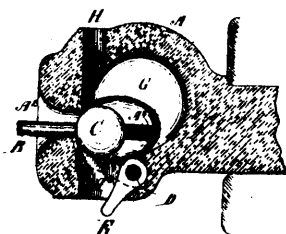
14784 Bennett's Improvements on Gold Separators.



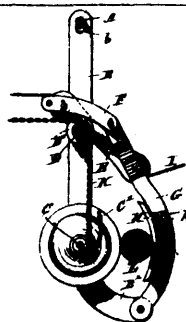
14785 Sanford's Improvements on Ox Shoes.



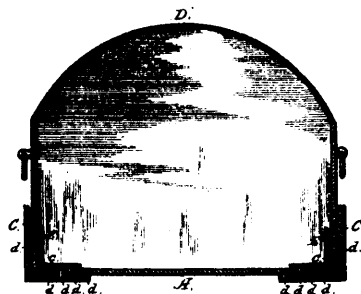
14787 Leyden's Improvements on Car Couplings.



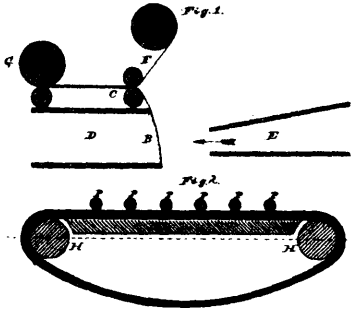
14788 Conway's Improvements on Railway Brakes.



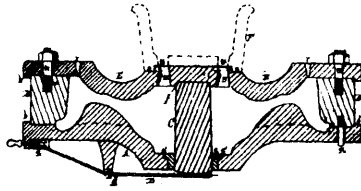
14789 Conway's Improvements on Car Couplings.



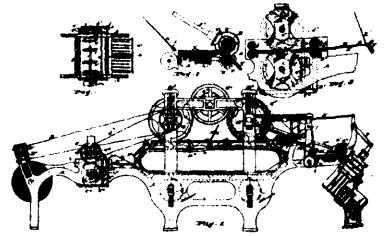
14780 Boyd's Improvements in Grave Vaults.



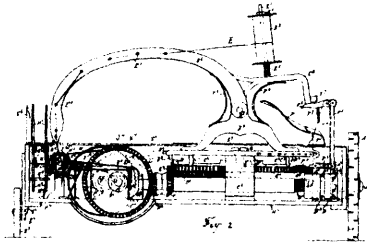
14791 Kellogg's Improvements in the Manufacture of Fur Coated Fabrics.



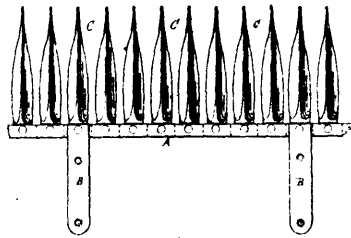
14792 Thierry's Improvements on Moulds for casting Car Wheels.



14793 Feister's Improvements in Printing Machines.



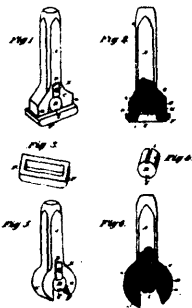
14794 Wallace's Improvement in Grain Binders.



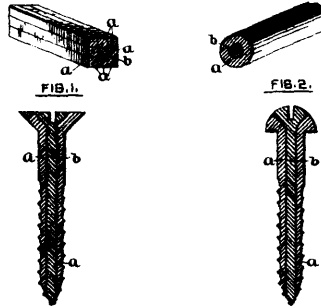
14795 Patterson's Improvements on Harvesters.



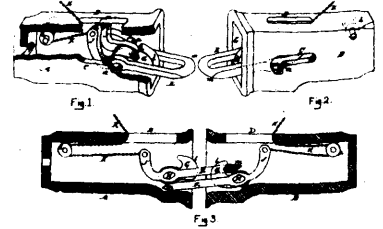
14796 Nelson's Improvements in Mittens.



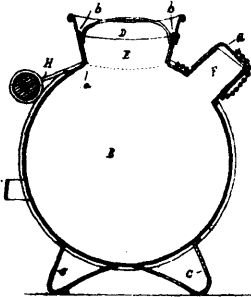
14797 Johnson's Improvements in Saw Swages.



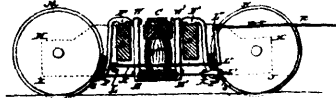
14801 Rogers's Improvements on Screws.



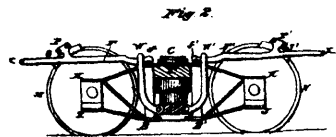
14802 Mitchell's Improvements on Car Couplers.



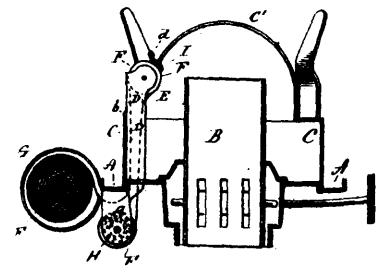
14804 Kinney's Improvement on Pails.



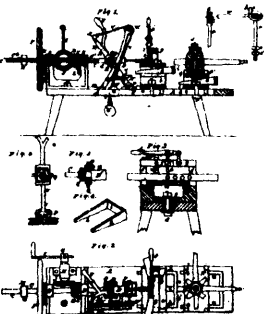
14806 Mallinkrodt's Improvements in Automatic Railway Brakes.



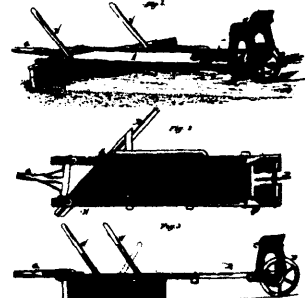
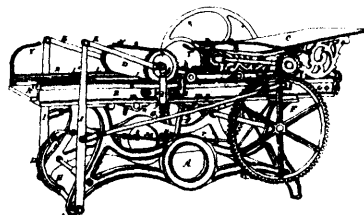
14808 Frouty's Improvements on Printing Presses.



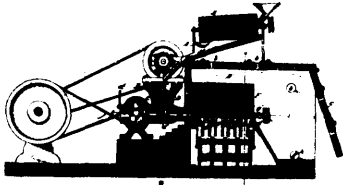
14807 Rose's Improvements on Lighting Mechanism for Gas Lamps.



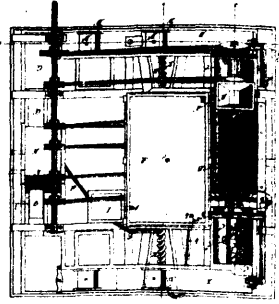
14898 Miller's Machine for Boring Felloes and Cutting Tenons or Spokes.



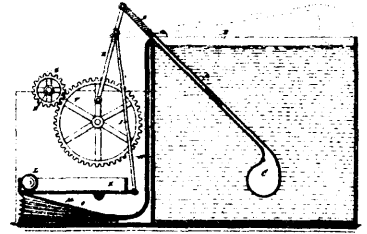
14810 Smith's Improvements in Road Scrapers.



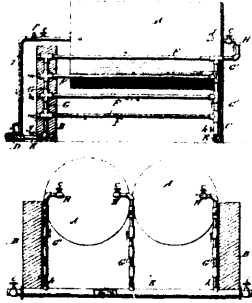
14811 Warne's Improvements in Concentrators and Separators.



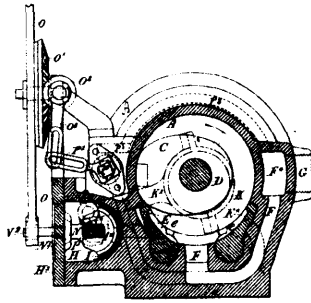
14812 Warne's Improvements on Separators and Concentrators.



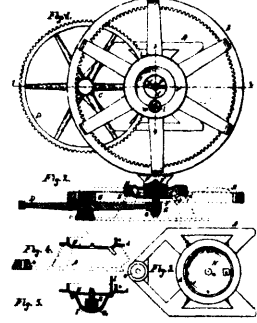
14813 Sutliff's Improvements on Motors.



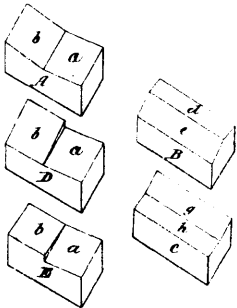
14814 Watson's Improvements on Steam Generators and Feed Water Heaters.



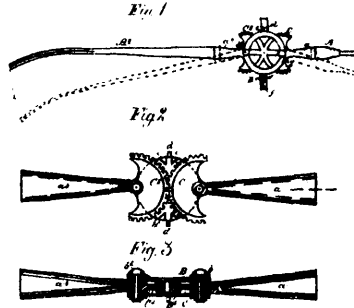
14815 Hodson's Improvements in Rotatory Engines.



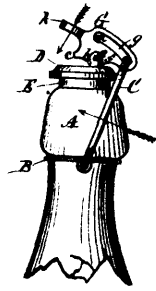
14816 Smith's Improvements on Grinding Mills.



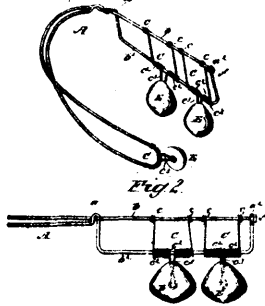
14818 Duput's Improvements in Bricks.



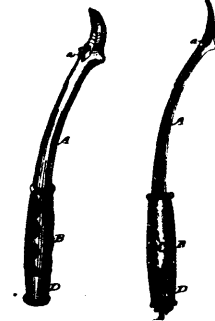
14819 Irwin's Improvements on Row-Locks.



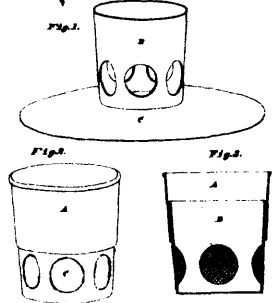
14820 Osgood's Improvements on Bottle Stoppers.



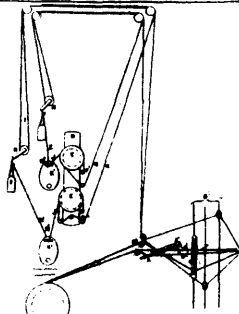
14821 Herrick's Improvement in Trusses.



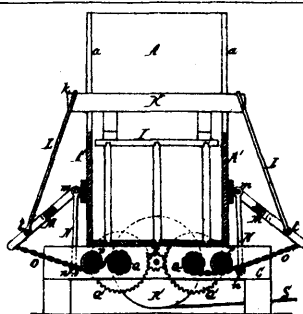
14822 Gillett's Improvements in Bluing Packages.



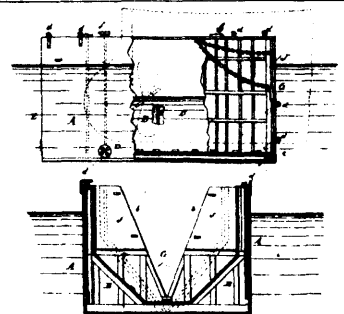
14823 Rice's Improvements on Filters.



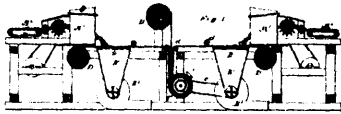
14824 Taylor's Improvements on and Apparatus for the Manufacture of Elastic Fabrics.



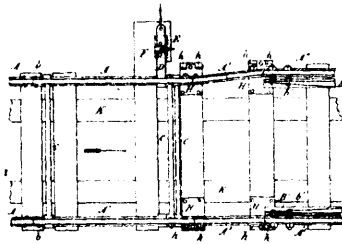
14825 Herring's Improvements in Baling Presses.



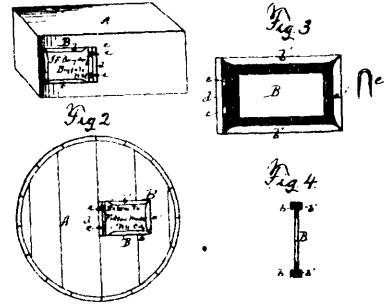
14826 Kirkham's Improvements in Coffier Dams.



14827 Doubleday's Improvements on Fibrous Fabrics, and Process and Machine for Manufacturing the Same.



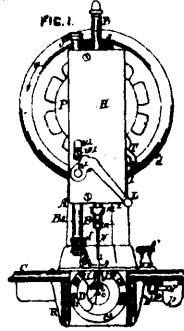
14828 Scheffer's Improvements in Railway Switches.



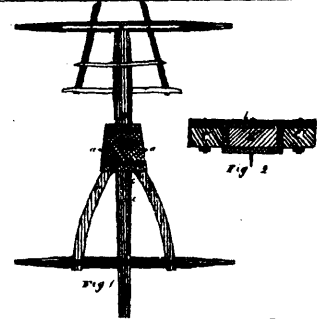
14831 Burgdorf's Improvements on Label Holders.



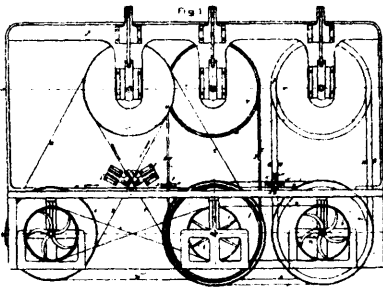
14832 Shadduck's Improvements on Tug Buckles.



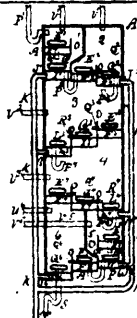
14833 Leslie's Improvements on Sewing Machines.



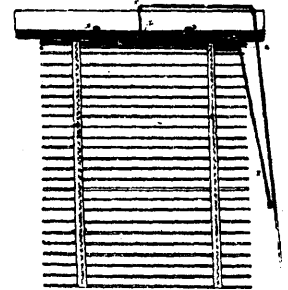
14834 Waller's Improvements on Wagon Couplings.



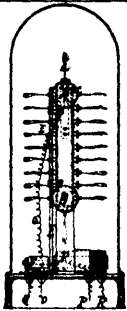
14835 Bowker's Improvement in Machinery for Sawing Barrel Heads.



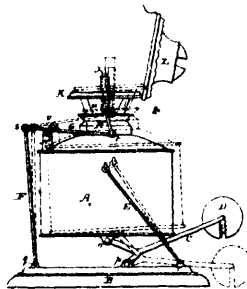
14836 Race's Improvements on Distilling Apparatus.



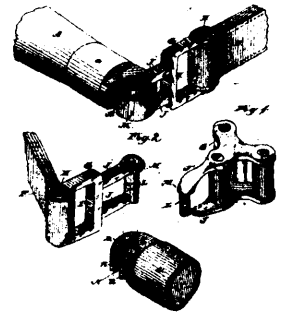
14837 Bowslough's Improvements on Inside Windows Blinds.



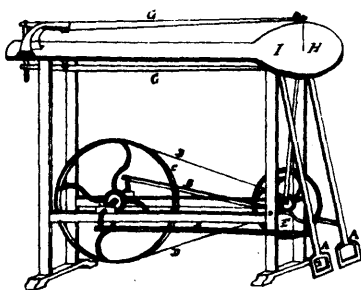
14838 Jamieson's Improvements on Incandescent Electric Lamps.



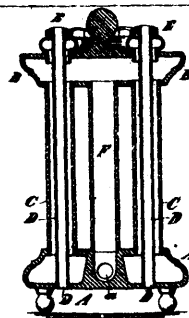
14839 Scott's Improvements on Self-Extinguishing Lamps.



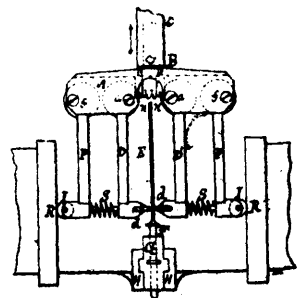
14840 Miller's Improvements on Sockets and Cock-eyes for Traces and Neck Yokes.



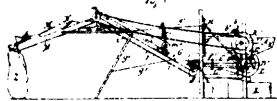
14841 Holder's Improvements in Treadle Motive Power for Gig Saws and other Machines.



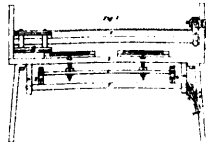
14843 Cashore's Improvements on Radiators.



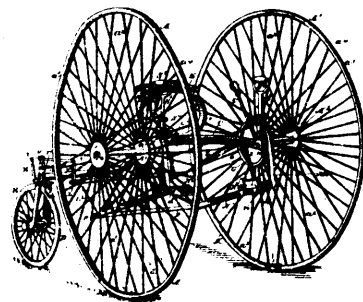
14844 Taber's Improvements on Burnishing Knife Blades.



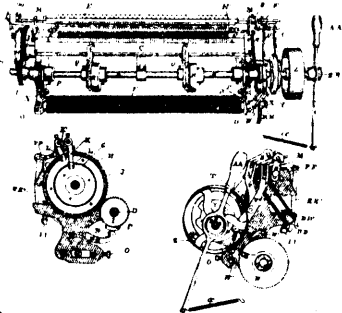
14845 Penniston's Improvements in Potato Separating Machines.



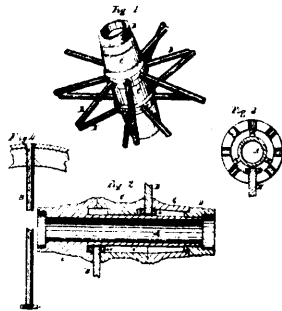
14846 Shaw's Improvement in Knitting Machines.



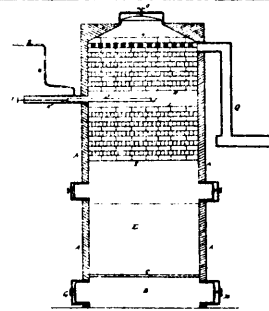
14847 McKenzie's Improvements on Tricycles.



14849 Young's Improvements on Crocheting Machines for Making Looped Fabrics.



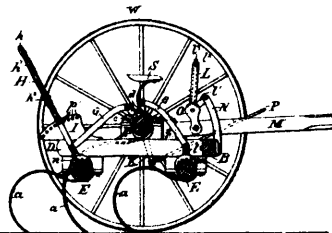
14850 Smith's Improvements on Wheel Hubs.



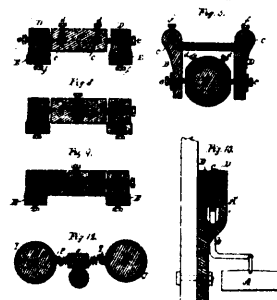
14851 Duffield & English's Improvements in the Processes and Apparatus for Manufacturing Gas.



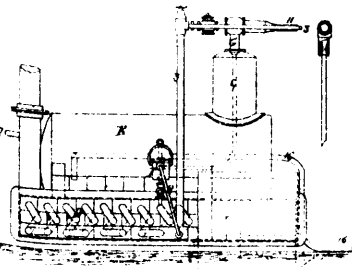
14853 Miller's Improvements in Holdbacks.



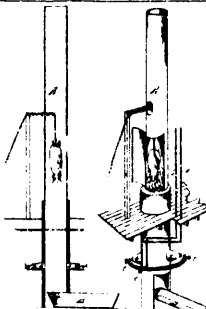
14854 Springer & Ives's Improvements on Spring Tooth Harrows or Cultivators.



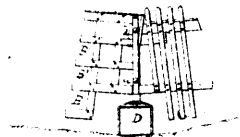
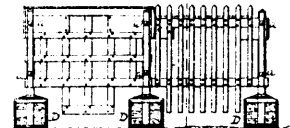
14855 Improvements in Self-Leveling Ship's Berths.



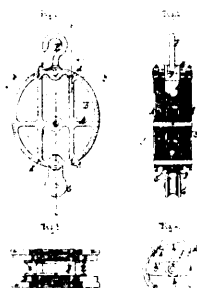
14856 Blythe's Improvements in Treating Railway Sleepers, Wood Blocks and Vegetable Fibre, and in Apparatus Therefor.



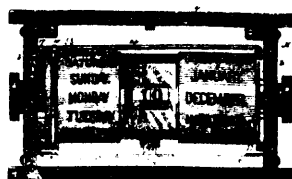
14857 Morgan's Improvements on Machines for Singeing Hogs.



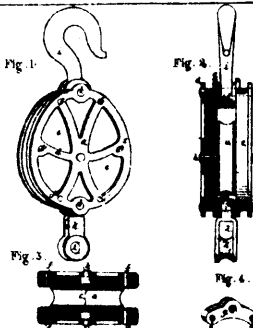
14858 DuBois's Improvements on Fences



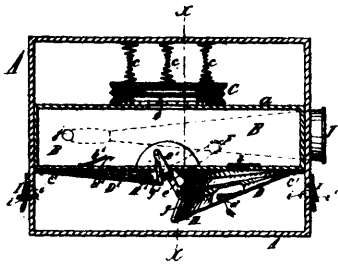
14859 Norcross's Improvements in Pulley Blocks.



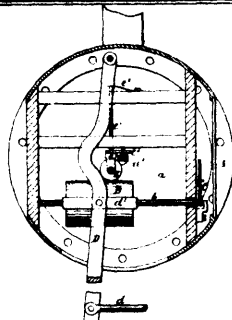
14860 Hovenden's Improvements in Perpetual Calendars.



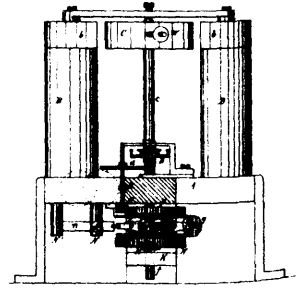
14861 Norcross's Improvement in Pulley Blocks.



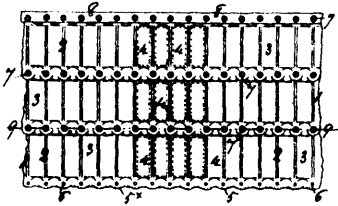
14862 Hansen's Improvements in Fog Horns.



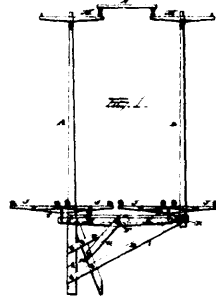
14865 Boys's Improvement on Apparatus for Measuring Mechanical and Electrical Power.



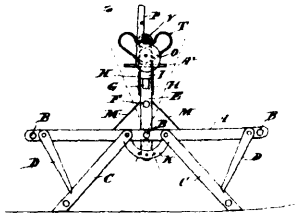
14866 Boys's Improvement on Electric Meters.



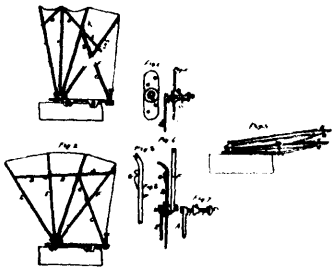
14867 Brewster's Improvements on Buoyant Devices.



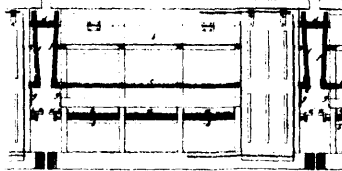
14868 Kepner's Improvements on Harvesters.



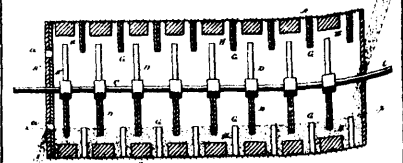
14869 Gentesse's Improvements in Clothes Wringers and Clothes Mangles.



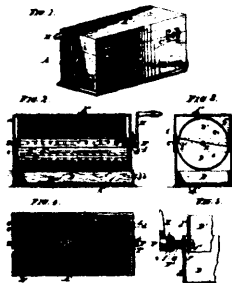
14870 Hodge's Improvements on Machines for raising or Depressing Buggy Tops.



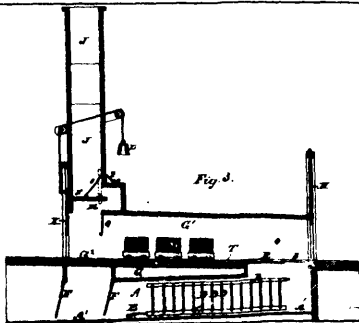
14871 McPherson's Improvements on Stock Cars.



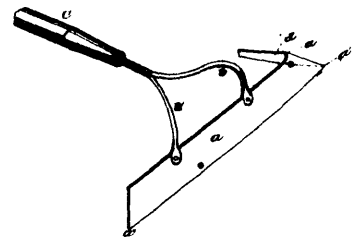
14873 Ager's Improvements on Grain Decorticators.



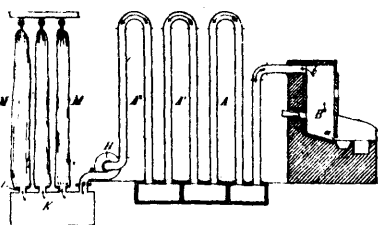
15876 Schultz's Improvements on Ash Sifters



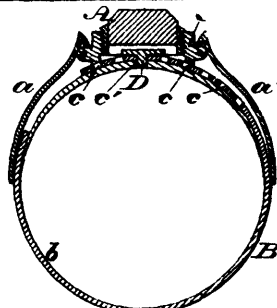
14877 Barron's Improvements on Lumber Drivers



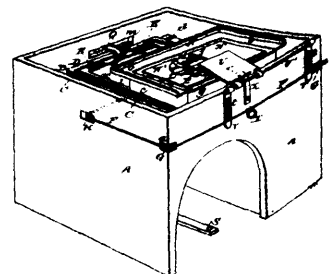
14878 Tryon's Improvements on Hoes.



14879 Lewis & Bartlett's Process for Manufacturing White Lead Pigments.



14881 LaGrange's Improvement on Finger, Scarf and other Rings.



14882 Harriman's Improvements on Adjustable Writing Tables.