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The Canadian Patent Office

RECORD

Vol. VIII.—No. 11.

NOVEMBER, 1880.

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

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INVENTIONS PATENTED.

No. 11,801. Compressed Air Engine. (*Machine atmosphérique.*)

Frederick E. B. Beaumont, Westminster, Eng., 23rd September, 1880; for 5 years.

Claim.—1st. The method of regulating the working power, to suit variations in the pressure of the working fluid, by expansion apparatus applied to the first cylinder, whereby the supply of working fluid can be cut off sooner or later during each stroke. 2nd. The method of obtaining temporary energetic action by holding open the supply valves of the first cylinder so that, while its piston moves in equilibrium, the full pressure of the fluid is admitted to act on the piston of the next larger cylinder. 3rd. The double supply valves *et*, the one of which is free to seat itself independently of the other. 4th. The combination, with the supply valves *et*, of the lever *G* worked by the eccentric link, the valve levers *es* with their rollers *es*, the screwed rod *A3* worked from the piston rod, and the sliding adjustable blocks *h*. 5th. In combination with the valves *et* and their lever *es*, the hand levers *kt*. 6th. In each compound engine, the combination of the one lever *G* and weight-shaft worked by the eccentric link, with the arms *f* and their links, and the several valve levers *et f*. 7th. In combination with the compound cylinders *E F*, the casings *d* supplied with steam or hot fluid.

No. 11,802. Improvements on Medical Batteries. (*Perfectionnements aux batteries médicinales.*)

Thomas H. Hicks, Brantford, Ont., 23rd September, 1880; for 5 years.

Claim.—1st. The discs *A*, *B*. 2nd. The combination of the said discs, in such a manner that every disc, both of primary and secondary will be in contact with iron core. 3rd. The combination and utilization of the power of both electro-magnets for producing interruptions of the primary discs, together with the production of a secondary electric current in every alternate disc. 4th. The combination of the branch wires *S P* with primary and secondary discs.

No. 11,803. Improvements on Field Fences. (*Perfectionnements aux clôtures des champs.*)

Gilbert Merritt, Scotland, Ont., 23rd September, 1880; for 5 years.

Claim.—In combination with the rails *A* of a zig zag fence, the wire *B* looped around the angles of intersection of the rails for binding the panels.

No. 11,804. Improvements in Cultivators and Seeders. (*Perfectionnement aux cultivateurs et aux semoirs.*)

Henry Springer, Vicksburg, Mich., U.S., 23rd September, 1880; for 5 years.

Claim.—1st. The short axle *F* mounted on the vertically sliding racks *G*, working the ways *H* at opposite sides of the frame *A*, the pinions *I* and segment levers, in combination with the seeder, the hopper *a* of which is provided with the downward extension vertically adjustable on the standards or arms *c c* by means of bolts and nuts. 2nd. The main frame *A* having bars *C* and *D* provided with segmental racks *R* with a continuous mortise through the rack and frame, in combination with the shaft *K* carrying the cultivator teeth, the rods *Q* and toothed plates *P*. 3rd. The combination of the shaft *K* provided with grooves *M* with the S-shaped tooth *L* having the slot *J* at its upper end, the supporting bolt and the plate *N*. 4th. The seed hopper *a* vertically adjustable on the main frame, carrying the rotary agitator *f* provided with the pinion *d*, in combination with the hand lever *t* and the cog-wheel *e* upon the short shaft *F* of one of the vertically adjustable wheels *E*.

No. 11,805. Improvements on Car-Couplings. (*Perfectionnements aux attelages des chars.*)

William L. Fisher, South Saginaw, Mich., U.S., 23rd September, 1880; for 5 years.

Claim.—The combination of the draw head, chambered as described, the dog *C* pivoted on a horizontal axis and weighted to cause its upper end to move forward, the link *D* and the coupling pin *B* slotted as described, and having a shoulder *a* adapted to rest either upon the upper end of the dog or the inner end of the link.

Claim.—The combination of the draw head, chambered as described, the dog *C* pivoted on a horizontal axis and weighted to cause its upper end to move forward, the link *D* and the coupling pin *B* slotted as described, and having a shoulder *a* adapted to rest either upon the upper end of the dog or the inner end of the link.

No. 11,806. Improvements on Rotary Churns. (*Perfectionnement aux barattes rotatoires.*)

Peter A. Ryckman, Duntroon, Ont., 23rd September, 1880; for 5 years.

Claim.—The pivoted hand lever *E* provided with the cross bar *F* and flexible cord *G*, in combination with the dasher spindle *C* provided with a fly or balance wheel, said lever being adapted to move up and down, and to rotate the dasher alternately in opposite directions by the winding and unwinding of the cord on the top of the spindle.

Claim.—The pivoted hand lever *E* provided with the cross bar *F* and flexible cord *G*, in combination with the dasher spindle *C* provided with a fly or balance wheel, said lever being adapted to move up and down, and to rotate the dasher alternately in opposite directions by the winding and unwinding of the cord on the top of the spindle.

No. 11,807. Improvements in Machines for Heating and Purifying Feed Water for Steam Boilers. (*Perfectionnements aux machines à chauffer et purifier l'eau d'alimentation des chaudières à vapeur.*)

Donald McMillan and Henry R. A. Boys, Barrie, Ont., 23rd Sept., 1880; for 5 years.

Claim.—1st. The cold water supply pipe *B* so placed in front of the exhaust pipe *A* as to feed the supply water directly on the steam as it issues from the cylinder. 2nd. The inclined pipe *C* in which the feed water is beaten into spray and instantly boiled. 3rd. The tank *D* with the exhaust pipe *E*, gauge cock *H* and hole *I*. 4th. The filter *F* with its feed water pipe *G*.

Claim.—1st. The cold water supply pipe *B* so placed in front of the exhaust pipe *A* as to feed the supply water directly on the steam as it issues from the cylinder. 2nd. The inclined pipe *C* in which the feed water is beaten into spray and instantly boiled. 3rd. The tank *D* with the exhaust pipe *E*, gauge cock *H* and hole *I*. 4th. The filter *F* with its feed water pipe *G*.

No. 11,808. Improvements on Gas Regulators. (*Perfectionnements aux régulateurs à gaz.*)

George S. Woodruff, Toronto, Ont., 23rd September, 1880; for 5 years.

Claim. 1st. The combination, formed inside of metal case *a*, of the cone-shaped seat *B* and the jam nut screw washers *C C* at the inlet *H* and outlet *I* of metal case *a*. 2nd. The combination of the coal cross bars *D D* connected with valve spindle *E* and valve *P* attached, and spiral spring *f* connected around valve spindle *E*, all formed in combination inside of cone-shaped seat *B* making a seat any desired point working automatically without the use of a flexible diaphragm.

No. 11,809. Apparatus for Drying Coffee, Grain, Fruit and other Materials. (*Appareil pour sécher le café, le grain, les fruits et autres objets.*)

Sir Henry Scholfield, Guatemala, 23rd September, 1880; for 5 years.

Claim.—1st. The closed chamber *A*, provided with perforated bottom, closed top *c* and chimney *C*, and having, combined with a steam coil beneath the bottom, steam aspirator placed in the chimney, and a suitable steam generator. 2nd. The combination with chamber *A* having the pyramidal top *e*, chimney *C* and perforated bottom *d*, of the screen *g* and steam aspirator *D*. 3rd. Drawing previously heated air through a chamber containing the material, by exhausting of the air in the chamber.

No. 11,810. Improvements in Cot Beds. (*Perfectionnements aux hamacs à l'anglaise.*)

Henry Whiteside, Sussex Vale, N.B., 23rd September, 1880; for 5 years.

Claim.—The combination of the legs *B B* with notched braces *D D* and head board *E*.

No. 11,811. Improvements on Saw-Mills.*(Perfectionnements aux scieries.)*

Daniel Cilley, Grand Rapids, Mich., U. S., 23rd September, 1880; for 5 years.

Claim.—1st. A reciprocating saw or gang, the swinging upper guides, in combination with mechanism for imparting a swinging movement in one direction to the saw and supporting it in rake, leaving the saw and its frame free to be returned or thrown out of rake in its ascent by the movement of the log. 2nd. The swinging upper guides, in combination with eccentrics terminating in concentric cams, and steps or shoulders adapted to act directly upon such guides to push them forward, hold them and leave them. 3rd. The rake producing, holding and releasing device of a saw, consisting of the cross shaft B carrying at or near each end of a double eccentric *b b*, a double cam *b₁ b₂* and dividing steps or shoulders in one and the same device, in combination with the upper saw guide A, pivoted as described, and provided with an arm or downward projection *e* against which the said eccentrics, cams and projections act. 4th. The combination of the upper pivoted guides, adapted by devices for free forward and backward movements, at their lower ends, with stops arranged to limit the forward movements of said guides. 5th. The combination of the upper pivoted guides adapted for free forward and backward movements, at their lower ends, with adjustable plates *c* over which the free ends of the guides lap, and which carry the cross shaft B, of the cam eccentrics and the front stops G G for co-operation with said free ends of the guides. 6th. The adjustable side plates *c* supported as described, and provided with the front stops G G, in combination with the cross shaft B carrying the cam eccentrics *b b₁*, the cross shaft D having the rake adjusting eccentrics *f f*, and the upper saw guides A adapted for co-operate in relation to each other, whereby the adjustment of said plates by the eccentrics *f f* to regulate the rake of the saw carries with said plates the rake producing, holding and releasing devices independent of the frame, with which the rake adjusting devices D *f f* has a fixed relation. 7th. The combination, with the upper saw guides pivoted as described, and the rake producing, holding and releasing cam eccentrics *b b₁* adapted to operate directly upon the free lower ends of said guides, of suitable gearing connecting the shaft B, of said cam eccentrics with the main driving shaft of the saw in a manner to allow the said cam eccentric shaft to be adjusted with the slides *c c* which carry it without interrupting said gearing connection.

No. 11,812. Improvements on Cigarette Machines.
(Perfectionnements aux machines à cigarettes.)

James A. Bonaack, Bonaacks, Va., U. S., 23rd September, 1880; for 5 years.

Claim.—1st. A feed device for a cigarette machine consisting of an endless travelling belt spaced into aliquot parts, a roller distending one end of the belt, and a curved table placed beneath the upper section of the belt and having a curved end for distending the other end of the belt. 2nd. A device for transferring and distributing the tobacco in a cigarette machine consisting of a roughened surface feed roller, a roller covered with card cloth, a concave fitting down into the space above the tangential point of these rollers, and a stripping roller. 3rd. The combination with two endless feeding belts, of a reciprocating carrier placed between the two belts and adapted to transfer the stock with a spreading or scattering action. 4th. The combination, with two endless feeding belts A D, of a reciprocating carriage or frame carrying an endless transferring belt C. 5th. The method of forming cigarettes in a continuous roll, which consists in rolling the tobacco in a continuous roll, then rolling this in a paper envelope and finally cutting this roll into definite lengths. 6th. The mechanism for forming the tobacco in a continuous roll, consisting of a travelling belt and a tapering compressing tube adapted to encompass the belt and roll up the same with its contents while it is passing through. 7th. The combination with the endless belt and the tapering rolling tube, of a feed wheel arranged to impart positive movement to the roll as it passes through and prevent choking. 8th. An endless belt and a tapering rolling tube enclosing a portion of said belt for rolling the tobacco in a continuous roll, in combination with a second endless wrapping belt adapted to receive and carry both the paper strips, and the tobacco roll, and a second rolling and wrapping tube. 9th. The tapering wrapping tube formed with a spiral guide for one edge of the belt, opening into a slit having a flanged lip *b₁* and then closed again, in combination with a belt carrying the paper and passing through said tube, a pasting device located at the slit in the tube and applying paste to the edges of the paper. 10th. The combination, with the belt and paper wrapping tube having slit with flange *b₁*, of a pasting wheel or brush I, a right angular paste delivering wheel J, a paste reservoir L located above the same and having a screw plunger, and the worm gears I, L actuating the plunger to force out the paste. 11th. The cutting devices consisting of the holding tube J and the circular knife J₄ having a rotary movement about its own axis, and also a rotary movement about a secondary axis. 12th. The combination with the revolving cutting knife, of a set of differential gears for actuating the same with a more rapid movement while in action than during the rest of its stroke. 13th. The combination, with the holding tube J, of the shaft J₇ having arm J₁, tubular bearing J₂, shaft J₃, cutting disc J₄, driving wheel J₅ and segmental track J₅. 14th. The combination, with the knife of a cigarette machine, of an endless belt for receiving the cigarettes spaced into divisions and a mechanism connecting the knife with the belt, so that a number of movements of the knife effects a definite movement of the belt for counting cigarettes placed therein.

No. 11,813. Improvements on Washboards.*(Perfectionnements aux planches à savonner.)*

Frank B. Howard, Etchemin, Que., 27th September, 1880; for 5 years.

Claim.—The alternate depressions D and elevations C, with intermediate space E forming zig-zig grooves X X.

No. 11,814. Improvements on Nut Locks.*(Perfectionnements aux arrête-noix.)*

Dosithe Duprat, Ste. Scholastique, Que., 27th September, 1880; for 5 years.

Claim. 1st. The combination with bolts and nuts for fish plates and nut locks, the nut lock plate D having nut locks E raised by the key F circumferentially and radially around the bolt and nut. 2nd. In combination with

the nut lock plates D having nut locks E, circumferentially and radially raised around the nut C, the key F.

No. 11,815. Improvements on Lifting Jacks.*(Perfectionnements aux crics.)*

Hiram R. Ferris, Cleveland, Ohio, U. S., 27th September, 1880; for 5 years.

Claim. 1st. A lifting shaft having a mutilated screw thread in combination with a nut also having a mutilated screw thread, whereby the nut can be made to engage with and disengage from the lifting shaft. 2nd. The combination of the lifting shaft B provided with a mutilated screw thread, nut C also provided with a mutilated screw thread, and the nut F adapted to turn upon the shaft B and support the weight thereon by resting upon the standard A. 3rd. A lifting shaft having a mutilated screw thread.

No. 11,816. Improvements in Explosive Compounds.
(Perfectionnements aux composés explosibles.)

Alfred Monnier, San Francisco, Cal., U. S., 27th September, 1880; for 5 years.

Claim.—1st. The improvement, in explosive compounds containing chlorate of potassa, consisting in the addition of coal tar or other tarry matter, and its incorporation with the explosive mixture, so as to surround the particles of chlorate and provide an elastic and permanently soft cushion, and thus segregate the particles of chlorate from one another. 2nd. The described process or method of making explosive compounds containing chlorate of potassa as a base consisting first, in dissolving in water the chlorate of potassa and soluble substances, and adding thereto the other insoluble ingredients, which absorb more or less of the soluble substances and form the body of the compound; secondly, in crystallizing the dissolved salts and simultaneously incorporating the crystals with the insoluble particles by evaporation and agitation, then grinding the mass and thereby reducing the insoluble substances; and, lastly, in incorporating coal tar or other tarry matter, by heating and kneading the entire mass as specified.

No. 11,817. Improvements on Neck Yokes.*(Perfectionnements aux jouguets.)*

Charles C. Keeue, Marengo, Iowa, U. S., 27th September, 1880; for 5 years.

Claim.—The recess pole A, provided with the ferrule a having a shoulder or abutment *a₁* and opening *a₂*, and the spring top or button C, in combination with the neck yoke B having a tapering collar or sleeve D connected thereto by a double swivel joint.

No. 11,818. Improvements on Glass Bottles.*(Perfectionnements aux bouteilles de verre.)*

Leslie E. Keeley, Dwight, Ill., U. S., 27th September, 1880; for 5 years.

Claim.—The nearly semi-circular body A having the broad rectangular back C, neck portion D and mouth E provided with the tip F.

No. 11,819. Improvements on Perspective Drawing Apparatus.
(Perfectionnements aux appareils à dessiner en perspective.)

George Rosquist, Brooklyn, N. Y., U. S., 27th September, 1880; for 5 years.

Claim.—1st. The combination, with a sight piece F and a drawing surface A, of a pantograph G arranged to present its tracing point *g₂*, for use as the arm piece between the sighter and the object, to trace the latter while the drawing point *g₁* reproduces the fac-simile visible upon the drawing surface A. 2nd. The combination of the drawing board A and transparent tracing board B, adjustable as to inclination, with the sight piece F and with the pantograph G, adjustably connected to the board A. 3rd. The transparent tracing board B provided with the adjustable sight F, to facilitate the sketching of objects on the said board B by a pencil or other point *g₂*.

No. 11,820. Improvement on Horseshoe Nails.*(Perfectionnement au clou à cheval.)*

Caleb M. Talcott, Hartford, Aaron W. C. Williams, Brookfield, and George J. Capewell, Cheshire, Ct., U. S., 27th September, 1880; for 5 years.

Claim.—1st. An ordinary horseshoe nail provided with bars, or serrations which resist its withdrawal from the hoof. 2nd. A horseshoe nail having its edges provided with bars, or serrations which have transverse ridges or grooves in their inclined faces, said ridges or grooves being adapted to resist a loosening movement either forward or backward. 3rd. A half length horseshoe nail having its edges provided with bars, or serrations which have transverse ridges or grooves in their inclined faces, said ridges or grooves being adapted to resist a loosening movement, either forward or backward.

No. 11,821. Improvements in Wind-Mills.*(Perfectionnements aux moulins à vent.)*

Henry Helmka and James Clark, Brownsville, Ont., 27th September, 1880; for 5 years.

Claim.—The combination of the bucket B, and counterpoise C, (by means of the float e, tap beam *k*, tap *b*, rope or chain H, lever F, sliding clutch G, and arms *h h h h*) and the regulating springs *f f*, with the sails E.

No. 11,822. Improvements in Street Signs.*(Perfectionnements aux enseignes des rues.)*

Edwin J. Hardy, Buffalo, N. Y., U. S., 27th September, 1880; for 15 years.

Claim.—The combination of two plates B connected together and arranged at an angle to each other, a circular clasp consisting of a body portion *f* and a locking portion *q* connected together by locking devices *h i m*, and rods *h* or arms *d* provided with branches or bars *e*, whereby both plates B are rigidly connected with the body *f* of the clasp.

No. 11,823. Improvements on Vehicle Hubs.*(Perfectionnements aux moyeux des roues.)*

Francis Culham, Burford, Ont., 27th September, 1880; for 5 years.

Claim.—The combination of the nut A A, the box B, the flange C C, the flange D D and the cap E.**No. 11,824. Improvements on Type Setting and Distributing Machines.***(Perfectionnements aux machines à poser et distribuer les caractères d'imprimerie.)*

Joseph Thorne, Port Richmond, N. Y., U. S., 29th September, 1880 for 5 years.

Claim.—1st. A distributing type case having vertically arranged type channels in which the types descend by gravity, which is constructed so as to move with a step-like action, whereby its said type channels are periodically brought into register with, and to a state of rest over the type channels of a composing case. 2nd. The combination, with the vertical type channels of a composing case which are constructed with wards determining the character or letter which may enter them, of a distributing type case provided with vertical type channels, each adapted to contain types bearing various characters, which distributing type case is constructed to be moved with a step-like action, so as to periodically bring its channels into register with, and to a state of rest over those of the composing case. 3rd. The combination, with the stationary composing type case C, having vertical channels Q that are provided with wards governing their mouths, of the distributing type case D having vertical type channels 12, and provided with means for imparting to it a step-like rotative movement. 4th. The combination of the horizontally moving distributing type case D having vertical channels 12, with the stationary composing type case C having vertical channels 2 that are provided with wards governing their mouths and with horizontally reciprocating type ejectors. 5th. The combination, with the horizontally moving distributing type case D having vertical channels 12, the stationary composing type case C having vertical channels 2 that are provided with wards governing their mouths and with horizontally reciprocating type ejectors, of the horizontally moving carrying table that transfers the ejected types to the line forming mechanism. 6th. The combination, with the type channels of the distributing case having open outer or front sides, and in which channels the types gravitate, of the removable fenders arranged a distance from said open sides, whereby the types may be introduced into and held in the channels, and the condition of the same inspected. 7th. The combination with the vertical type channels of a moving distributing case, of the frictional drag blocks 75. 8th. The combination, with the type channels of a stationary type composing case, of a distributing type case arranged to move over the same, the type channels whereof are provided with frictional drag blocks. 9th. The combination, with the channels of the type distributing case, of a line feeding device consisting of a galley supported vertically before said type case and at an appropriate angle relative to its type channels, and providing with a feeding plate. 10th. The combination, with a composing type case having vertical type channels from which the types are ejected, of a horizontally moving table that receives the types and carries the same to the line forming mechanism that communicates with the edge of the said table, opposite to that upon which the types are received. 11th. The combination, with a composing type case having vertical type channels and type ejectors reciprocating therein, of a horizontally moving type carrying table and a conveying belt as 25. 12th. The combination, with a composing type case having vertical type channels and type ejectors reciprocating therein, of a horizontally moving type carrying table and a type conveying chute, the said table receiving the types at one edge of its surface and delivering them to the chute over the opposite edge. 13th. The combination, with a composing type case having vertical type channels and type ejectors reciprocating therein, of a horizontally moving type carrying table, a conveying belt as 25, and a conveying chute. 14th. The combination, with a composing type case having vertical channels 2, ejectors reciprocating therein, and a rotating type receiving carrying table, of a guard as 21 situated a distance in front of said channels and having a throat at 3. 15th. The combination, with the composing type case, the horizontally moving type carrying table and the conveying chute 28, of the deflector 19, the said table receiving the types at one edge of its surface and delivering them to the chute over an opposite edge. 16th. The combination, with the type case C and the ejectors 6 that reciprocate in its type channels, of the horizontally moving type receiving carrying table 30, and a guard as 21 that is situated a distance in front of said channels. 17th. The combination, with the type case C and the ejectors 6 that reciprocate in its type channels, of the horizontally moving type receiving carrying table 30 and guards 21 22. 18th. The combination with the type case C, its channels and type ejectors, of the moving carrying table 30 and the guards 24. 19th. The combination with the vertical type channels and a receiving table, of the type ejectors having bevelled ends. 20th. The combination, with the vertical channels of the type case, the type carrying table and its guard 21, of the reciprocating type ejectors having bevelled ends. 21st. The combination, with the vertical channels of the type case, the type carrying table and its guards 24, of the reciprocating type ejectors having bevelled ends. 22nd. A type case provided with vertical type channels, the rear walls whereof have a ward, whereby a thin type is prevented from turning or cutting as it descends. 23rd. A line forming mechanism consisting of a type carrying wheel having type receiving steps, an inclined stationary type elevator 15 and a setting stick. 24th. The combination, with the type conveying chute 28, the type carrying wheel having receiving steps, the inclined stationary elevator and the setting stick. 25th. The combination with the type conveying belt, conveying chute, stepped carrying wheel, inclined stationary elevator and the setting stick. 26th. The combination with the type channels of the case C and their ejectors, the rotating carrying table, the deflector belt, stepped carrying wheel, inclined stationary elevator and setting stick. 27th. The combination, with the type channels in the case C and their ejectors, the rotating carrying table, the deflector, conveying chute, stepped carrying wheel, inclined stationary elevator and setting stick. 28th. The combination, with the stepped type carrying wheel, inclined elevator and setting stick, of the spring 14. 29th. A type ejecting mechanism consisting of a reciprocating ejector, a vertically vibrating type bar having tappets 32, 33, 34 and a rotating driver, the latter being constructed with a multiplicity of angularly arranged plates that engage said tappets to propel

the type bar forward, and disengage from the tappets, to permit the rearward movement of said type bar. 30th. The combination with the ejectors 6, the type bars 70 and their tappets 32, 33, 34, the rotating type bar driving plate 23 and retaining springs 37. 31st. The combination, with the keys 36, the key bars 70 and their studs 43, of the slotted plates 42 having rearward and forward recesses, whereby a key bar, when depressed, may be held down during its forward movement and at the end of its stroke rise and be held upward during the rearward movement. 32nd. The combination, with the keys 36, the spring seated key bars 70, their studs 43 and the slotted and recessed division-plates 42, of the rotating type bar driving plates 23 and the tappets 32, 33, 34.

No. 11,825. Improvements on Screw Cutting Die Holders.*(Perfectionnements aux porte-filières à fileter les vis.)*

Robert Mitchell, (Assignee of Ambrose Chatwin), Montreal, Que., 29th September, 1880; for 5 years.

Claim.—In a die-holder for screwing machines, for tubes and bolts, the combination of jaws carrying the divided screw-cutting dies, with the operating lever, by means of which the dies may be opened and closed, while the machine is in motion.**No. 11,826. Improvements on Chucks.***(Perfectionnements aux mandrins.)*

Robert Mitchell, (Assignee of Ambrose Chatwin), Montreal, Que., 29th September, 1880; for 5 years.

Claim.—An internal adjustable gripping chuck, for screwing machines for tubes or bolts and for other purposes, said chuck consisting of a face plate carrying two or more serrated roughened or toothed cams adjustable to various sizes of tubes or bolts, in combination with an actuating ring and lever, or equivalent mechanism whereby the cams may be opened or closed simultaneously in order to grip or release the tube or bolt or other object, while the machine is in motion.**No. 11,827. Improvements on Hose Pipes.***(Perfectionnements aux tuyaux élastiques.)*

John Bestwick, Dedham, Mass., U. S., 29th September, 1880; for 5 years.

Claim.—1st. The hose pipe, combined with the removable plates a centrally connected and adapted to be inserted into, or removed from the hose pipe at will. 2nd. The hose pipe plates a centrally connected and provided with the annulus c for arresting the issuing water and condensing, solidifying and lengthening the stream.**No. 11,828. Improvements on Steam Engines.***(Perfectionnements aux machines à vapeur.)*

George B. Dixwell, Boston, Mass., U. S., 29th September; (Extension of Patent No. 5,311).

No. 11,829. Improvements on Horse Collars.*(Perfectionnements aux colliers de cheval.)*

Samuel Peters, Sydney, N.S., 29th September, 1880; for 5 years.

Claim.—1st. The curved metal plate A, curved link B and loops C C. 2nd. The combination of the curved plate A and correspondingly curved link B with loops C C. 3rd. The combination, with the curved plate A and curved link B and loops C C, of the collar tops D D.**No. 11,830. Improvements on Waggon Springs.***(Perfectionnements aux ressorts des wagons.)*

William G. Hughes, Churnbusco, Ind., U. S., 29th September, 1880; for 5 years.

Claim.—1st. The spiral spring E enclosed in a frame upon the end of the bolster A, in combination with the said bolster, the yoke H, the eye bolts or clips and links I and the waggon body G. 2nd. The combination of the spiral spring E, the arched rods F and the slotted yoke H with the bolster A, the eye bolts or clips and links I and the waggon body G.**No. 11,831. Improvements in Rocking Chairs.***(Perfectionnement aux chaises berçantes.)*

William H. Bartelo, Carthage, Ill., U. S., 29th September, 1880; for 5 years.

Claim. The foot board B, the brackets E having bearings or perforations, the roller C C having projecting axes D, the single adjustable connection composed of rods F G and set screw J, in combination with a rocking chair having an eye bolt or staple H attached to its seat.**No. 11,832. Improvements on Hinges.***(Perfectionnements aux pentures.)*

Daniel N. Stewart, Cobourg, Ont., 29th September, 1880; for 5 years.

Claim.—The combination of head section A, arm section B, rivet C, shoulder D, with churn dash E.**No. 11,833. Improvements on Thrashing Machines.***(Perfectionnements aux machines à battre.)*

Gregory S. Thompson, Port Hope, Ont., 30th September, 1880; (Extension of Patent No. 5,221.)

No. 11,834. Improvements on Forming Seams of Boots and Shoes.*(Perfectionnement dans la manière de faire les coutures des chaussures.)*

Jeremiah Fogarty and Timothy F. Fogarty, Montreal, Que., (Assignees of Laurens E. De Waru, Philadelphia, Pa., U. S.), 30th September, 1880; (Extension of Patent No. 5,220).

No. 11,835. Improvements on the Manufacture of Wheels. (*Perfectionnements dans la fabrication des roues.*)

William Newlin, Attica, Ind., U. S., 30th September, 1880; for 5 years.

Claim.—1st. The combination of a metallic hub having recesses to receive the end of the spokes, with a metallic tire having recesses to receive the other ends of said spokes, which are entered therein by the contraction of the said tire after heating. 2nd. The metallic tire provided, along its inner circumference, with recesses to receive the outer ends of the spokes. 3rd. In securing the spokes in the upper series of holes in the hub, then dropping the heated and expanded tire around the spokes and in line with the centre of the hub, next subjecting the hub to pressure so as to cause it to pass the centre of the tire, and finally fitting a second series of spokes in the hub and the expanded tire and removing pressure from the hub. 4th. A metallic hub and metallic tire, and spokes adjusted in recesses in said hub and tire, and retained in position by shrinking the latter.

No. 11,836. Improvements in Shoe Lace Hooks. (*Perfectionnements aux crochets pour lacier les chaussures.*)

Mellen Bray, Newton, Mass., U.S., 30th September, 1880; for 15 years.

Claim.—1st. A shoe lace hook or stud composed of two discs connected at one side by a neck made in one piece, and a tubular rivet made in a separate piece and united thereto, to form the shank by which the hook may be attached to a shoe or other article. 2nd. A shoe lace stud or hook composed of two discs united by an eccentrically located neck made oval in cross section or having its edges rounded, all in one piece, and a tubular rivet made separate and united to one of said discs to form the shank, by which the hook may be securely attached to the shoe or other article. 3rd. A tubular rivet attached to the hook head by inserting its shank through a hole therein and upsetting the tubular shank of said rivet, to throw out a bead-lip or flange beneath said hook head.

No. 11,837. Improvements on Boat Seats.

(*Perfectionnements aux sièges des bateaux.*)

Andrew McFarren, jr., and Charles Field, Toronto, Ont., 30th September, 1880; for 5 years.

Claim.—A seat A secured to the metal frame B which support the rollers C D, in combination with the guide plates or slides E.

No. 11,838. Improvements in Car-Couplings.

(*Perfectionnements aux attelages des chars.*)

Marion W. McCann, Dublin, Ind., U.S., 30th September, 1880; for 5 years.

Claim.—1st. The combination, with coupling pin *d*, of the levers *e e* pivoted thereto and provided with spring or springs, for forcing the pin quickly in position to couple the cars. 2nd. The combination of the pin *d*, levers *e e*, connecting rods *h h* and springs *k*. 3rd. The combination of levers *e e*, connecting rods *h h*, springs *k*, pin *d*, spring *a*, stop bolt *e* and draw head B.

No. 11,839. Improvements on Milk Creamers. (*Perfectionnements aux garde-lait.*)

Peter H. McIntosh, L'Orignal, Ont., 30th September, 1880; for 5 years.

Claim.—The cylinder B.

No. 11,840. Improvements on Straw-Cutters.

(*Perfectionnements aux hache-paille.*)

David Maxwell, Paris, Ont., 2nd October, 1880; (Extension of Patent No. 5,234.)

No. 11,841. Process and Apparatus for Casting Leads. (*Procédé et appareil pour couler les blancs et les interligines.*)

John Fleming, Toronto, Ont., 2nd October, 1880; (Extension of Patent No. 11,267.)

No. 11,482. Process and Apparatus for Casting Leads. (*Procédé et appareil pour couler les blancs et les interligines.*)

John Fleming, Toronto, Ont., 2nd October, 1880; (Extension of Patent No. 11,267.)

No. 11,843. Improvements on Straw-Cutters,

(*Perfectionnements aux hache-paille.*)

Henry S. Havill, Paris, Ont., (Assignee of William Barrett, Sedalia, Mo., U.S.), 4th October, 1880; for 5 years.

Claim.—1st. A cutting box A provided with a press board B, and a stationary cutting bar I, in combination with a triangular knife C fastened to the bar D. 2nd. A sickle-shaped handle K pivoted at *a* to the bar D, in combination with the link L pivoted to the post M. 3rd. A triangular movable knife C working in connection with a stationary cutting bar I, in combination with the bar H and guide bar J.

No. 11,844. Improvements in Cooking Ranges. (*Perfectionnements aux landiers de cuisine.*)

George R. Prowse, Montreal, Que., 4th October, 1880; for 5 years.

Claim.—1st. The chamber H, in combination with the hook K pivoted thereto and having gridiron *f*, the whole arranged in connection with the fireplace. 2nd. The chamber H, in combination with the hook K provided with gridiron *f* and swinging cover *d*, the whole arranged in connection with the fireplace.

No. 11,845. Improvements in Mail Bags.

(*Perfectionnements aux valises à lettres.*)

Charles J. Becktel and Frank M. Horner, Mimico, Ind., U. S., 4th October, 1880; for 5 years.

Claim.—1st. A mail bag having a central opening and two side projections adapted to fold and close over each other and secured by a staple passing through such folded sides. 2nd. A mail bag having the projection the central projections of which are closed and folded by closing and folding the side projection. 3rd. A mail bag having two sides and two rear fastening ears, the side ears being provided with double eyelets passing over a single central staple, and the rear ears folding over the side ears and passing over the same central staple. 4th. A mail bag provided with two side and rear projections, and having a tag holder located between the rear projections in such manner that, when the projections are folded, the tag holder is on the front of the bag. 5th. The eyelet *c* made in two pieces or plates *c₁ c₂* having tongues *c₃ c₄*, adapted to turn over each opposite plate and be secured thereto and to the mail bag. 6th. The combination of the side ears B, rear ears D, staple H and eyelets F G.

No. 11,846. Improvements on Fanning Mills.

(*Perfectionnements aux tarares-cribleurs.*)

George Brooks, Detroit, Mich., U.S., 4th October, 1880; for 15 years.

Claim.—1st. The combination of the hopper slide D with the lever *a*, link *j* and lever *l*. 2nd. A chess board for a fanning mill composed of the screen H and seed board H'. 3rd. The combination of the shoe C having the channels *o p*, with a chess board having the inner face of its front bar inclined and provided with the screen H and opening *n*, and seed board H' with oppositely inclined gutters *m*.

No. 11,847. Improvements on Feeding Apparatus for Steam Boilers.

(*Perfectionnements aux appareils d'alimentation des chaudières à vapeur.*)

Sally G. Cohusfeld, Dresden, Germany, (Assignee of Nicolas Yagu, St. Petersburg, Russia), 4th October, 1880; (Extension of Patent No. 5,257.)

No. 11,848. Improvements on Steam and other Cocks and Valves.

(*Perfectionnements aux robinets et aux soupapes de vapeur et autres.*)

James Mallinson, Welwyn, Eng., 9th October, 1880; (extension of Patent No. 5,419.)

No. 11,849. Improvements on Gas and Air Engines. (*Perfectionnements aux machines à gaz et à air.*)

Charles W. King and Alfred Cliff, London, Eng., 9th October, 1880; for 5 years.

Claim.—1st. A main working cylinder receiver with displacer and regenerator, and a compressing pump. 2nd. A motive power engine driven by internal combustion of the fuel in which, between the working cylinder and the place where combustion occurs, there is at all times free communication from one to another as far as pressure is concerned, but a large surface regenerator is interposed so that the cylinder cannot be unduly heated by the combustions. 3rd. Exploding or burning a mixture of gas and air at one end of a receiver, provided with a regenerator, and in which a displacing piston or plunger works, when such gas and air enter together and are already mixed before their introduction, or during their introduction into the receiver. 4th. Using a displacing plunger and regenerator to increase the pressure during the forward stroke and diminish it during the backward stroke in engines driven by internal combustion of the fuel, when there is at all times free communication for pressure between the receiver in which these work and the working cylinder.

No. 11,850. Improvements on Grain Car Doors. (*Perfectionnements aux portes des chars à grain.*)

Thomas Hibbert, Cochran, Ind., U.S., 9th October, 1880; for 5 years.

Claim.—The combination, with the entrance *a*, door B and upright C, of the hinge plate D having the stop *n* and pivoted at one end to the door, and at the other to said upright, the guide D' secured to the floor of the car and to the upright and engaged by the said pin, and the flanged stop or guard G having a fastening.

No. 11,851. Improvements in Oil Stoves.

(*Perfectionnements aux poêles à huile.*)

David E. Bangs, Medford, Mass., U.S., 9th October, 1880; for 5 years.

Claim.—1st. The combination, in a vapour burning stove, of the plate A and cone B erected thereon, the burner tube *d* having trough *d* on its upper side, and the perforations *i*, the pipes E E' upon the outside of the cone and communicating with each other, and the gas receiver F communicating at one end with the pipe *d* and at the other with pipe E, the pipes E E' F being in the smoke passage of the stove or furnace, and the pipe F being above the pipes E E'. 2nd. The combination, in a vapour burner for stoves of the cone plate A, the burner tube *d* below the same, and the oil tube E; above said plate and in contact with the outside of the cone wall *a*. 3rd. A vapour burner for stoves or furnaces consisting of the plate A, a tube *d* under the said plate and attached thereto and provided with the trough *d*, and perforations *i* in the bottom of said trough, and the cone B formed on the plate A and having a swinging side piece *b*.

No. 11,852. Improvements on Velocipedes,

(*Perfectionnements aux vélocipèdes.*)

George W. Preasey and Edwin L. Crowell, Hammondon, N. J., U. S., 9th October, 1880; for 5 years.

Claim.—1st. The bicycle having a front steering wheel B, a hind driving

wheel A, and a driver's seat D located over or nearly over the centre of said hind driving wheel. 2nd. The front steering wheel having a fork N extending perpendicularly to the point *f*, in combination with the turning rod *g* set back from the top of said fork and provided with a handle or tiller. 3rd. The reach C and front wheel B, in combination with the spring bearing P between the fork N of said wheels B, and boss *g'* of the turning rod *g*. 4th. The velocipede having a front steering wheel B, hind driving wheel A and treadles G, which are connected to said driving wheel A and have their foot rests project forward and upward. 5th. The velocipede having a clutch mechanism operating the driving wheel and connected to an operating treadle consisting of the block or pawl K, fixed friction disc or ratchet H and loose disc or annulus c. 6th. The annulus c provided with a stop pin m. 7th. The clutch mechanism, in combination with the treadle G and the returning or restoring spring M.

No. 11,853. Improvements on Attachments for Gates and Doors. (*Perfectionnement aux fermetures des barrières et des portes.*)

George W. Simons, St. Catharines, Ont., 9th October, 1880; for 5 years.

Claim.—The combination of the sliding bar A and the boxing D with the latch B.

No. 11,854. Improvements on Drawbars for Car Bumpers (Buffers). (*Perfectionnements aux ressorts de traction pour les tampons des chars.*)

Thomas Hibbert, Cochran, Ind., U.S., 9th October, 1880; for 5 years.

Claim.—The combination, with the car frame having the parallel buffer blocks *b* springs *e* recessed into the ends of said blocks, the guide pins *d*, the brackets *f*, followers *g* and the stirrups K, of the rabbeted draw-heads B C extending through the stirrups and followers and provided with the transverse keys *l*, and the draw rods D having longitudinal slots *i* in their ends, and passed over and secured on the ends of said keys.

No. 11,855. Process of Preparing Grain for after Milling. (*Procédé de traitement du grain à mouler.*)

Jacob Cornwell, Cadillac, Mich., U.S., 9th October, 1880; for 5 years.

Claim.—The process of preparing wheat or other grain previous to the reduction of the same into chop or meal for the manufacture of flour, which consists in moistening the kernel or berry, and then removing the outer portion of the hull of the berry and the fuz and fibre thereto attached, by means of a decortiating machine, and afterwards separating and cleaning the wheat from the bran, fuz and fibre produced by the action of the decortiating machine.

No. 11,856. Improvements in Sweat Pads. (*Perfectionnements aux matelas de transpiration.*)

Frederick Benoit, Rockton, Ill., U.S., 9th October, 1880; for 5 years.

Claim.—A pad for horse collars, composed of a series of detachable sections and an enclosing envelope or casing adapted to secure such sections.

No. 11,857. Improvements on Dynamo-Magneto-Electric Machines and Motors. (*Perfectionnements aux machines et aux moteurs dynamo-magneto-electriques.*)

Thomas A. Edison, Menlo Park, N. J., U. S., 9th October, 1880; for 5 years.

Claim.—1st. A rotating armature composed of thin metal plates, discs or rings with alternating interposed insulating material secured together upon a shaft or hub. 2nd. The combination, with a commutator, of contact brushes or springs arranged at an angle to the axis of the commutator. 3rd. The combination, with the shaft of a commutator or rotating armature, or both, adapted to have a reciprocating movement in its supporting journals, of means for giving such motion. 4th. The combination, with a rotating shaft of a commutator or armature, or both, of an armature, a magnet, a circuit controlling device for giving a reciprocating motion to the shaft. 5th. The combination, with a revolving armature, of a governor receiving motion therefrom and adapted to control the main circuit. 6th. The combination, with a revolving armature, of a fly or balance wheel. 7th. The combination, with the main circuit, of a circuit breaker adapted to break or close the main circuit at several points simultaneously. 8th. The combination, with an electro-motor, of a brake applied to the main driven wheel. 9th. The combination, with an electro-motor, of a friction pulley on the rotating shaft of the motor, and a brake applied to the main driven wheel and adapted to control its speed. 10th. The combination, with an electro-motor, of a mechanical brake applied to the main driven wheel and adapted to control its speed.

No. 11,858 Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

James McAllister, Chicago, Ill., U. S., 9th October, 1880; for 5 years.

Claim.—1st. As a means for operating the vibrating arm K and in combination therewith, the shaft M provided with the disc O and crank pin *o*, the shaft P having the radial arm *p* provided with the slot *p'*, the sliding block Q fitted within said slot and over said crank pin, and the connecting bar R pivoted at its ends to, or upon the lower end of said vibrating arm K and the outer end of said slotted arm *p*, said parts being combined to operate as specified. 2nd. As a means for operating the shuttle carrier T and in combination with the same, lever V pivoted at its upper end within the hollow boss B, the bar W connected at its lower end with, and forming part of the eccentric straps *w* and having the upper end pivoted to said

lever, in front of and below the pivotal bearing of the same, the eccentric X secured upon and revolving with the shaft M, and the bar Y pivoted upon and extending between the lower end of said lever and the rear end of said carrier, said parts being combined to operate as shown. 3rd. As a means for imparting longitudinal motion to the feed bar Z and in combination therewith, the eccentric X, the strap *w*, the bar W provided with the longitudinal slot *w'*, the pivoted block *b*, the bar B' having the angular arm *b''*, the pivoted bar C' engaging with a shoulder of said feed-bar and provided with the cam recess *c'* which engages with a bearing D, said parts being combined to operate in the manner set forth. 4th. The means employed for imparting vertical motion to the feed bar Z consisting of the shaft H', journalled lengthwise of and below the base plate A, provided at its front end with a crank arm *h* which extends beneath said feed-bar and having at its rear end a second crank arm *h''* that at its end engages with a cam groove *o*, which is formed within the inner face of the plate or disc O, said parts being combined to operate as described. 5th. The means employed for regulating the longitudinal motion of the feed-bar Z consisting of the bar E', provided at its inner end with a roller D' and made longitudinally adjustable towards or from the cam recess *c'* of the bar C' by means of the screw F', said parts being combined to operate in the manner specified. 6th. As a means of giving to the tension plate L' a yielding pressure against the plate M: in the flat spring *o'* contained within the head D having its lower end secured in position between the sections of said head, and its upper end forked, the screw N' passing through said tension plate and at its inner end in engagement with the forked end of said spring, and the thumb nut *n'* placed upon the outer end of said screw, said parts being combined to operate as shown. 7th. As a means for taking up the slack of the thread, the head D provided with the thread eyes *d''* *d'''*, the vibrating arm K having near its outer end the stud K', and the plate P pivoted at its upper end, within or upon the upper rear portion of said head, provided at its lower end with a thread eye *p* and having a longitudinal slot *p'* which extends downward, and then rearward and downward and engages with said stud K', said parts being combined to operate in the manner shown, so that the said thread eye *p* is caused to move forward in a line parallel with the length of the machine, while said vibrating arm K is passing from the centre of oscillation to the lower limit of its motion and to move rearward as said vibrating arm rises to its centre of oscillation. 8th. The means employed for giving the presser bar F' downward a yielding pressure, consisting of the spiral spring S' resting upon the lug *f* of said bar, the block T' placed at the upper end of said spring and provided with a radial lug *t'* which engages with a vertical groove *d'''*, which is formed in the head D and the threaded rod U' that passes downward through said head, said block T', said spring S' and said lug *f*, said parts being combined to operate as described. 9th. As a means for connecting the presser foot W' to or with the presser bar F' and in combination therewith, the interiorly threaded lug *w'* projecting rearward from the former through the opening *f''* in said presser bar, and the pointed screw X', which passes through said lug and fits within a half round groove *f'''* in said presser bar. 10th. The means employed for pivoting the shaft P having in one end a conical recess and upon the opposite end a conical bearing, and for compensating for pivotal wear of said shaft, consisting of the screw Y' provided at one end with a screw thread *y* and near its head with an inclined shoulder *y''* and having beneath its head *y'* a washer *y'''*.

No. 11,859. Improvements on Wood Pavements. (*Perfectionnements au pavage en bois.*)

William H. Stow, Chicago, Ill., U. S., 9th October, 1880; for 5 years.

Claim.—1st. The upper course of a wood pavement composed of round blocks and half round blocks mingled promiscuously, so that the edges of the round blocks will be protected by the half round blocks. 2nd. A wood pavement composed of a board flooring A and an upper course B of round blocks and half round blocks mingled promiscuously, so that the edges of the round blocks will be protected by the half round blocks. 3rd. A round and split block pavement having the gutters composed wholly of small round blocks. 4th. A wood pavement having the centre of the roadway made wholly of half round blocks placed in regular rows, breaking joints, and with gutters paved with small round blocks.

No. 11,860. Improvements on Oscillating Steam Engines. (*Perfectionnements aux machines à vapeur oscillantes.*)

Augustus B. Wood, Moses A. Rice, Hamburg, and William A. Wood, Monticello, Ark., U.S., 9th October, 1880; for 10 years.

Claim.—1st. The steam chest of an oscillating engine supported by a trunnion and an adjusting screw, at right angles to the axis, by additional set screws. 2nd. The adjustable valve chest H of an oscillating engine, divided into two compartments, each connected by a pipe and ports with the valve M for reversing the engine.

No. 11,861. Improvements in Saddle stirrups. (*Perfectionnements aux étriers des selles.*)

David B. Comly, Adena, Ohio, (Co-inventor with Horace Updegraff, Hampton, Ks.,) U. S., 9th October, 1880; for 5 years.

Claim.—1st. A stirrup composed of a frame or yoke adapted to be attached to the saddle strap and of a loop for the foot, the said yoke and loop being held together by projections and stands *a* *b* *c*, so that said loop will be detached from the yoke and remain on the foot of the rider if the latter should be thrown from the saddle. 2nd. The combination, with the frame a having shoulders *a* and notches *c*, of the loop *d* provided with the projections *f*, and pins *e*. 3rd. The combination, with the frame a provided with recesses *a* and cam surfaces *a'* leading into said recesses, of the detachable loop *d* having the pins or projections *g* adapted to slide into the recesses *a* and provide an additional safety support for the stirrup. 4th. The combination, with the frame a constructed with the open notches or recesses *e* in the lower ends of its arms *a'* and having the bevelled edges *e'* surrounding said notches, of the detachable loop *d* provided with pins *e* having heads *e'* enlarged or rounded on their inner sides, and adapted to fit snugly in the notches *e* and bevells *e'*.

No. 11,862. Improvements on Waggon Racks.*(Perfectionnements aux râteliers des wagons.)*

Jacob Katz, Wilmot, Ont., 9th October, 1880; for 5 years.

Claim.—A waggon hay rack having a bed frame composed of the said rails A contracted together at the one end, and rail D bent around such end to form a lateral extension corresponding to the distance apart of the other ends of the side rails A, the rails stayed apart by intervening braces F and bolts G, said bed frame supporting a fixed superstructure of suitable character on which to load hay, &c.

No. 11,863. Improvements on Car Platforms.*(Perfectionnements aux chars plateformes.)*

Rensselaer A. Cowell, Cleveland, Ohio, U. S., 9th October, 1880; for 5 years.

Claim.—1st. In combination with a supplemental or yielding platform C and adjusting bar F, any suitable cam device whereby, through said bar F, the spring resistance of said platform C may be adjusted. 2nd. The combination, with the supplemental or yielding platform C, of one or more springs D, bar E, cam bar F and cam G or its equivalent, whereby through the movement of said cam the yielding or supplemental platform C may be adjusted. 3rd. The combination, with the yielding platform C adjusting bar F and cam G, of the lever H provided with an arm or short lever I.

No. 11,864. Fire and Water-Proof Paint.*(Peinture réfractaire et imperméable.)*

Harvey Hall, London, Thp., 9th October, 1880; for 5 years.

Claim.—Coal tar, ground slate, rock salt, powdered alum, powdered copers and asbestos.

No. 11,865. Improvements on Elastic Hubs.*(Perfectionnements aux moyeux élastiques.)*

The Rubber Cushioned Axle Company, (Assignee of John B. Sammis,) New York, U. S., 13th October, 1880; (Extension of Patent No. 7,619.)

No. 11,866. Improvements on Ventilating Apparatus. *(Perfectionnements aux appareils de ventilation.)*

David Groesbeck, New York, U. S., 13th October 1880; for 5 years.

Claim.—1st. The combination, with an inducing air current passage, and an air chamber having an opening into said passage and communicating by flues or passages with an inclosed space or apartment to be ventilated, of an adjustable deflector placed in said passage in relation with said opening and means for adjusting the same within said apartment, whereby the quantity of air drawn through said opening may be regulated. 2nd. The combination, with a railway car, of an inducing air current passage placed on the top of the car, a chamber having an opening into said passage and communicating with the interior of the car through flues or passages, and an adjustable deflector placed in relation with said opening, for drawing air from the interior of said car in regulated quantities and discharging it through said opening. 3rd. The combination, with a railway car, of an inducing air current passage A, chamber C having the opening O and de-

flector B, all placed at the top of the car, and a flue or flues or passages leading therefrom down to and communicating with the middle of the bottom of the car, whereby the mass of air in the car is caused to flow from the ends of the car toward the middle thereof, and the velocity of its flow is reduced. 4th. The combination, with an inclosed apartment, of an inducing air current passage A, chamber C having an opening O into said passage and communicating through a flue passage or opening with the interior of said apartment, a reversible and adjustable deflector B placed in relation with the opening O in said passage A, and means whereby the adjustment and reversal of said deflector may be made by a person in said apartment. 5th. In combination with apparatus for drawing air from the middle part of the bottom of a railway car, air diffusers and filters placed at or near the ends and at or near the top of the car, whereby the flow of the mass of air in the car is directed from the ends toward the middle of the car for more uniform distribution of heat, and reduction of the velocity of the moving mass of air therein. 6th. In an air diffuser for ventilation, the air chamber D and removable slide S, fitted to slide in said chamber and composed of a frame, perforated or reticulated diaphragms attached to opposite sides of said frame, and sponge packed between said diaphragms, whereby the air is both diffused and filtered in its passage into an apartment and whereby the said slide may be readily removed for cleaning and replaced after cleaning. 7th. The combination, with an air chamber C communicating by flues or passages with an inclosed apartment to be ventilated and having an opening O formed therein, of an inducing air current passage A, having the adjustable reversible deflector B arranged in relation with the opening O and lateral openings L arranged midwise in said passage and below said deflector.

No. 11,867. Improvements in Spring Bed Bottoms. *(Perfectionnements aux sommiers élastiques des lits.)*

La Fayette Wildermuth, New Lexington, Ohio, U. S., 13th October, 1880 for 5 years.

Claim.—1st. The spring connection for spiral springs consisting of wire bent outwardly into two semi-circles *b* and sharp return curves *b'* joined by a central straight section *b''*, the curved and straight sections lying in one plane. 2nd. The double spring C having its integral connecting portion on the same plane with the tops of the springs bent outward into semi-circles, and by sharp return curves *b'* forming a straight central section *b''* connecting said semi-circles, whereby a yielding spring connection is made. 3rd. The combination of the double springs C and armed springs D with their spring connections arranged diagonally with the springs B B', wire spring connections E and links c.

No. 11,868. Combined Truck and Bag Holder.*(Camion accroche-sac.)*

Benjamin Will, Petersburg, Pa., U. S., 13th October, 1880; for 5 years.

Claim.—1st. The combination of a truck and a pivoted bag holder placed thereon. 2nd. The combination of the two uprights or standards, a suitable support and a bag holder pivoted at or near its centre upon the supports, so that it can be turned about one half around, and provided with means for holding the mouth of the bag open, whereby after the bag has been filled, a man can tilt it upon his shoulder. 3rd. The combination of a truck provided with standards, with a pivoted bag-holder, the holder being provided with adjustable supporting arms.

List of Patents issued up to 27th November, 1880, but not yet Officially published in the Patent Office Record.

No. 11,936. Ole Oleson Storle, Milwaukee, Wis., U.S.A., "Knot Tying Machine," Nov. 7th, 1880.

No. 11,937. Alexander Ephraim Brown, Cleveland, Ohio, U.S.A., "Hoisting and Conveying Machine," Nov. 7th, 1880.

No. 11,938. Richard Troy, Oshawa, Ont., "Window Blind Hinges," Nov. 7th, 1880.

No. 11,939. Edward Stillman May, Detroit, Mich., U.S.A., "Cigar and Cigarette Holder," Nov. 7th, 1880.

No. 11,940. Albert Marion Guyton, Orbisonia, Penn., U.S.A., "Dry Goods Measures," Nov. 7th, 1880.

No. 11,941. Francois Xavier Blais, St. Remi, Que., "Milk Cooler," Nov. 7th, 1880.

No. 11,942. John Franklyn Tyrrell, New York, N.Y., U.S.A., "Compound for Soups," Nov. 7th, 1880.

No. 11,943. Henry Rammel Alves Boys, Barrie, Ont., "Oil Cups," Nov. 7th, 1880.

No. 11,944. Eugene L. Titch, Breda, Iowa, U. S. A., "Thread Case," Nov. 7th, 1880.

No. 11,945. William Manuel Wilcox, Port Perry, Ont., (Assignee of John Stephen Manuel Wilcox,) Whitby, Ont., "Pumps," Nov. 7th, 1880.

No. 11,946. George White, Greenville, Penn., U. S. A., "Spring Vehicle," Nov. 7th, 1880.

No. 11,947. James Argall, Mineral Point, Wis., U.S.A., "Feed Water Heaters," Nov. 8th, 1880.

No. 11,948. Electus Backus Ward, Detroit, Mich., U. S. A., "Sewer Trap," Nov. 8th, 1880.

No. 11,949. James Stoneman and William Alexander Lloyd, both of Eldred, Penn., U.S.A., "Gas Manufacture," Nov. 8th, 1880.

No. 11,950. Ole Oleson Storle, Milwaukee, Wis., U.S.A., "Cord Holder and Cutter for Grain Binder," Nov. 8th, 1880.

No. 11,951. Horatio Gale, Albion, Mich., U.S.A., "Spring Tooth Harrow," Nov. 8th, 1880.

No. 11,952. Charles Edward Anderson, Londona, East, Ont., "Sulky Hay Rake," Nov. 8th, 1880.

No. 11,953. William McClary, London, Ont., "Bridges," Nov. 8th, 1880.

No. 11,954. William Young and Andrew Young, both of Almonte, Ont., "Pitman Connection," Nov. 8th, 1880.

No. 11,955. Neil Smith, Lucknow, Ont., "Grain Separators," Nov. 8th, 1880.

No. 11,956. James Rodger McCall and Henry Ernest Duncan, both of Schoolcraft, Mich., U.S.A., Nov. 8th, 1880.

No. 11,957. Richard Frederick Carter, Clifton, Ont., and Charles Edwin Lacey, Drummondville, Ont., and George Hiram Kindall, Montreal, Que., (Assignees of Abram Quakinbush Allis and Hugh McConnell,) both of Cleveland, Ohio, U.S.A., (Extension of Patent No. 5,528,) "Oil Stove," Nov. 8th, 1880.

No. 11,958. Charles Listern Kellogg, Gasport, N. Y., U. S. A., "Plaiter and Ruffler," Nov. 8th, 1880.

- No. 11,959. Levi Wesley Pond, Eau Claire, Wis., U. S. A., "Saw-mill Head Block," (Extension of Patent No. 5,368.) Nov. 18th, 1880.
- No. 11,960. Levi Wesley Pond, Eau Claire, Wis., U. S. A., "Saw-Mill Head Block," (Extension of Patent No. 5,368.) Nov. 11th, 1880.
- No. 11,961. Avila S raphin Vinet, Narcisse Belanger and Jean Baptiste Vinet, all of Montreal, Que., (Assignees of Auguste Chavasse and Ors ne Rambouillet, both of Montreal, Que., "Composition for Removing Boiler Scale," (Extension of Patent No. 5,392.) Nov. 11th, 1880.
- No. 11,962. Robert Reginald Rae, Acton, Ont., (Assignee of John Wilda) of same place, "Glove Fastener," Nov. 11th, 1880.
- No. 11,963. Edmond Lorenzo Wood, Henry Slaven Schmick, Charles Ulrich Connelle and Daniel Borne, Eastland City, Texas, U.S.A., "Black-ing Brush," Nov. 11th, 1880.
- No. 11,964. Charles Albert Hussey and Anxyi Smith Dodd, New York, N.Y., U.S.A., "Electric Machine," Nov. 11th, 1880.
- No. 11,965. William Smith, Montreal, Que., "Seed Distributor," Nov. 11th, 1880.
- No. 11,966. Thomas Thompson Eckert, James William Clendenin, David Homer Bates, New York, N. Y., U. S. A., and Robert Garrett, Baltimore, Maryland, U.S.A., (Assignees of William Hadden.) Brooklyn, N.Y., U.S.A., "Electric Signalling Instrument," Nov. 11th, 1880.
- No. 11,967. George Murray, Cambridgeport, Mass., U. S. A., "Rotary Engine," Nov. 11th, 1880.
- No. 11,968. Thomas Alva Edison, Menlo Park, N. Jersey, U. S. A., "Electric Lamp," Nov. 11th, 1880.
- No. 11,969. Thomas Hennessey, Oakland, Cal., U.S.A., "Water Closet Valve," Nov. 13th, 1880.
- No. 11,970. Jabey Tepper Warren and The Warren Manufacturing Com-pany, Le Roy, New York, U.S.A., "Horse Power," Nov. 13th, 1880.
- No. 11,971. George Honey Preston, Ottawa, Ont., "Hay and Steam Rake," Nov. 13th, 1880.
- No. 11,972. Simeon Annett, Ephemia, Ont., "Hand Drag Saw," Nov. 13th, 1880.
- No. 11,973. Jeremiah Keith, Providence, Rhode Isl., U. S. A., "Sewing Machine," Nov. 13th, 1880.
- No. 11,974. James Elbert Treat, Boston, Mass., U. S. A., "Pneumatic Valve," Nov. 13th, 1880.
- No. 11,975. Frank Moses Wright, Palmyra, N. Y., U. S. A., "Bosom Board," Nov. 13th, 1880.
- No. 11,976. James Butler, Ingersoll, Ont., "Roof Paint," Nov. 13th, 1880.
- No. 11,977. Israel F. Alger, Fitchburg, Mass., U.S.A., "Horse Hitcher," Nov. 13th, 1880.
- No. 11,978. Thomas Armstrong, Rockton, Ont., "Steam Thrashing Ma-chine," Nov. 13th, 1880.
- No. 11,979. James Alexander Weed, Binghamton, N.Y., U.S., "Paper Pails," Nov. 13th, 1880.
- No. 11,980. Jules Roy dit Desjardins, Burlington, Vermont, U.S.A., "Portable Wind Engine," Nov. 13th, 1880.
- No. 11,981. James Livingston and Joseph Wright, Toronto, Ont., "Hot Water and Steam Boiler," (Extension of Patent No. 10,310.) Nov. 13th, 1880.
- No. 11,982. James Livingston and Joseph Wright, Toronto, Ont., "Hot Water and Steam Boiler," (Extension of Patent No. 10,310.) Nov. 15th, 1880.
- No. 11,983. James Lottridge, John Harvey, Richard Porter Street and James Simpson, (Assignees of Cornelius Edward Haynes, Boston, Mass., U. S. A., "Wringer," (Extension of Patent No. 3,412.) Nov. 15th, 1880.
- No. 11,984. Frederick Lavack and Robert Linton Cox, Gouverneur, N.Y., U.S.A., "Butter Cooler," Nov. 15th, 1880.
- No. 11,985. George Simeon Colburn, Gardner, Mass., U.S.A., "Cane Shaving Machine," Nov. 15th, 1880.
- No. 11,986. George Simeon Colburn, Gardner, Mass., U. S. A., "Ma-chine for Scraping and Stripping Rattan," Nov. 15th, 1880.
- No. 11,987. James Alexander Gavitt and Malcolm Steaurt McQuarrie, Walla, Washington, U.S.A., "Harness Buckle," Nov. 15th, 1880.
- No. 11,988. Thomas James Deakin, Columbia, Penn., U.S.A., and Wil-liard Thomas Block, Hannibal, Miss., U. S. A., "Process for the Manuf-acture of Iron," Nov. 15th, 1880.
- No. 11,989. Archibald Cron, Brantford, Ont., "Car Coupler," Nov. 15th, 1880.
- No. 11,990. Edward Pincus, Philadelphia, Penn., U.S.A., (Assignee of Abel Henning.) Phil., Penn., U. S. A., "Gas Machine," Nov. 15th, 1880.
- No. 11,991. Frederick Crocker, Olean, N. Y., U. S. A., and Charles D. Robbins, "Journal Lubricating Device," Nov. 15th, 1880.
- No. 11,992. Thomas Venning, Warwick, Ont., "Thrashing Machine," Nov. 15th, 1880.
- No. 11,993. Ephraim Smith, Pittsburg, Penn., U. S. A., "Mower and Reaper," Nov. 15th, 1880.
- No. 11,994. Frederick James Hayard and Thomas Fuller, Belleville, Ont., "Mower and Reaper," Nov. 15th, 1880.
- No. 11,995. James Ware Stoakes, Milan, Ohio, U. S. A., "Marking Pens," Nov. 15th, 1880.
- No. 11,996. James Jenks, Detroit, Mich., U.S.A., "Feed Water Injector," Nov. 15th, 1880.
- No. 11,997. Thomas Alva Edison, Menlo Park, New Jersey, U. S. A., "Conductor for the Distribution of Electricity, etc.," Nov. 15th, 1880.
- No. 11,998. John Whitfield, Toronto, Ont., "Stump Extractor," Nov. 15th, 1880.
- No. 11,999. George Arthur Rudd, Smith's Falls, Ont., "Shifting Car-riage Top," Nov. 15th, 1880.
- No. 12,000. Francis Jacques, Chatham, Ont., "Neck Yoke Leather," Nov. 23rd, 1880.
- No. 12,001. Louis Finger, Boston, Mass, U.S.A., "Book Binding," Nov. 23rd, 1880.
- No. 12,002. Albert Bartholomew Webster, Manchester, N. H., U. S. A., "Sleigh Spring," Nov. 23rd, 1880.
- No. 12,003. Albert Bartholomew Webster, Manchester, N. H., U. S. A., "Carriage Spring," Nov. 23rd, 1880.
- No. 12,004. Adolphus Peterson, Brooklyn, N. Y., U. S. A., "Carpet Ex-hibitors," Nov. 23rd, 1880.
- No. 12,005. Charles Edwin Pearson, Iberville, Que., "Spittoons," Nov. 23rd, 1880.
- No. 12,006. James George Cockshutt, Brantford, "Horse Hoes," Nov. 23rd, 1880.
- No. 12,007. William Henderson Irwine, Scotland, "Process for Treating Ores and Reguluses," Nov. 23rd, 1880.
- No. 12,008. Albert Herman Shipman, Rochester, N.Y., U.S.A., "Sawing Machine," Nov. 23rd, 1880.
- No. 11,009. Henry A. Sugrin and Prosper Nordmann, New York, N. Y., U.S.A., "Stop Watch," Nov. 24th, 1880.
- No. 12,010. Oscar William Noble and Edrich Alberto Bartlett, Wakefield, Mass., U.S.A., "Heating Stove," Nov. 24th, 1880.
- No. 11,011. William Dhu Dickey, New York, N. Y., U. S. A., "Hydro-Carbon Furnaces and Burners," Nov. 24th, 1880.
- No. 12,012. Joseph Crocker Reed, Brantford, Ont., "Corn Brooms," Nov. 24th, 1880.
- No. 11,013. John Alexander Brake, Buffalo, N.Y., U.S.A., "Grain Sepa-rator," Nov. 24th, 1880.
- No. 12,014. Joseph Kesselmeier, Galion, Ohio, U.S.A., "Watch Lathe," Nov. 24th, 1880.
- No. 12,015. Joseph Walker, Scranton, Penn., U.S.A., "Joint Couplings," Nov. 24th, 1880.
- No. 12,016. George Sreanor, Montreal, Que., "Multiplication of Electric Lights," Nov. 24th, 1880.
- No. 12,017. James Miller and Francis C. L. G. Susemihl, Detroit, Mich., U.S., "Grain Car Door," Nov. 24th, 1880.
- No. 12,018. The Extension Water Gauge Co'y, (Assignee of John R. Nunn and Frederick M. Clough, Cheshire, Ct., U.S., "Water Gauge," 24th Nov. 1880.
- No. 12,019. Auguste Montpetit, St. Thomas d'Alfred, Ont., "Hay Press," 24th Nov., 1880.
- No. 12,020. Leonidas Gray and Albert Y. Gray, Middletown Springs, Vt., U.S., "Thrashing Machine," 24th Nov., 1880.
- No. 12,021. Robert A. Pogue, Quincy, Ky., U. S., "Car-Coupling," 24th Nov. 1880.
- No. 12,022. Richard Morris, Blackheath, Eng., "Cartridge Re-sizing, Uncapping and Recapping Apparatus," 24th November, 1880.
- No. 12,023. Charles T. Ham, Rochester, N. Y., U. S., "Lantern," 24th Nov. 1880.
- No. 12,024. Alexander P. Ashbourne, Boston, Mass., U.S., "Manufacture of Coffee," 24th Nov., 1880.
- No. 12,025. John O. Smith, Savannah, Ga., U. S., "Canal Boat," 24th Nov., 1880.
- No. 12,026. Henry A. House and Samuel D. Castle, Bridgeport, Ct., U.S., "Treating Pelts," 24th Nov., 1880.
- No. 12,027. Lucius C. Warner, Crown Point, Ind., U.S., "Apparatus for Showing the Aeration of Water," 24th Nov. 1880.
- No. 12,028. William Watt, (Assignee of Joseph W. Reford.) New York, U. S., "Distilling Apparatus;" (Extension of Patent No. 5,420); Nov. 24th, 1880.
- No. 12,029. Harry S. Clark, Towanda, Pa., U. S., "Spring Gear for Vehicles," Nov. 24th, 1880.
- No. 12,030. Caleb C. Walworth, Boston, Mass., U. S., "Steam Radiator," Nov. 27th, 1880.
- No. 12,031. George W. Simons and Robert H. Gebott, St. Catharines, Ont., "Force Pump," 27th Nov., 1880.
- No. 12,032. Henry C. Levetus, Montreal, Que., (Assignee of Abraham Mayer, U.S.) "Optimeter," 27th Nov., 1880.
- No. 12,033. Alfred Adams, Chagrin Falls, Ohio, U.S., "Paper Bag," 24th Nov., 1880.
- No. 12,034. Pierre Houle, Montreal, Que., "Door and Window Fasten-ing," Nov. 27th, 1880.
- No. 12,035. Joseph W. Chivrell, Toronto, Ont., "Anti-Frost Stone Win-dows," Nov. 27th, 1880.
- No. 12,036. Alexander T. Ballantine, Portland, Me., U. S., "Ice Making Machine," 27th Nov., 1880.
- No. 12,037. Dennis F. Van Liew, Aurora, Ill., (Assignee of Alexander N. Monteer, Kansas, Mo.) U.S., "Door Hanger," 27th Nov., 1880.
- No. 12,038. Etienne D. Colletet, Montreal, Que., "Washing Machine," 27th Nov., 1880.
- No. 12,039. James W. McDonald, Woburn, Mass., U. S., "Hide Unhair-ing Apparatus," 27th Nov., 1880.
- No. 12,040. Cyrus Tobias, Chas O. Collmann and Esrom Meyer, Free-port, Ill., U.S., "Harness Crupper," 27th Nov., 1880.
- No. 10,041. Thomas and Alexander Turnbull, Camilla, Ont., "Weeding Machine," 27th Nov., 1880.
- No. 12,042. John Thompson, Montreal, Que., "Rat Trap," 27th Nov., 1880.
- No. 12,043. Howard A. Carson, Boston, Mass., "Process of Constructing Tunnels, Conduits, &c., 27th Nov., 1880.

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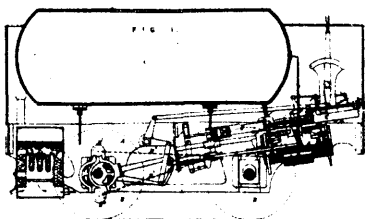
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ILLUSTRATIONS.

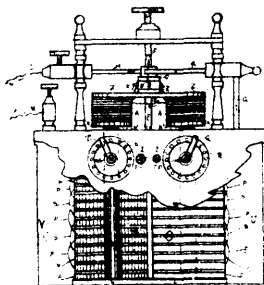
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11801 Beaumont's Compressed Air Engine.



11802 Hicks's Improvements on Medical Batteries.

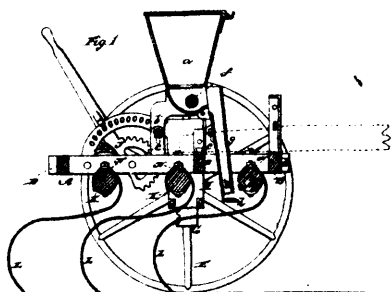


Fig. 1.

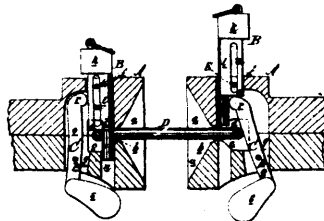


Fig. 2.

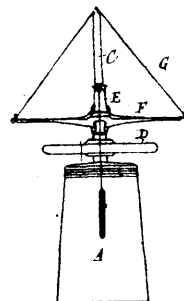
11803 Merritt's Improvements on Field Fences.



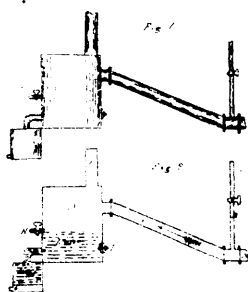
11804 Springer's Improvements in Cultivators and Seeders.



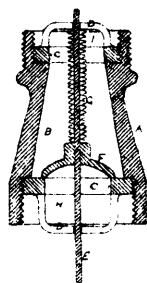
11805 Fisher's Improvements on Car-couplings.



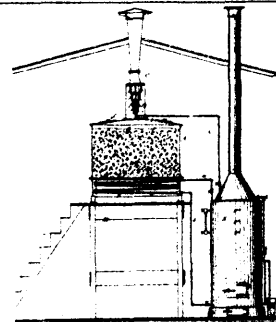
11806 Ryckman's Improvements in Rotary Churns.



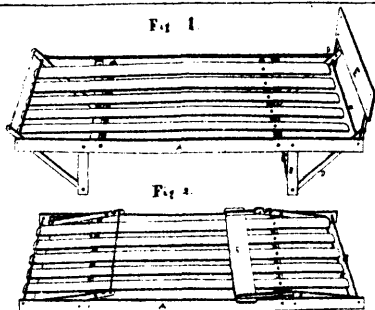
11807 McMillan's Improvements in Machines for Heating and Purifying Feed Water for Steam Boilers.



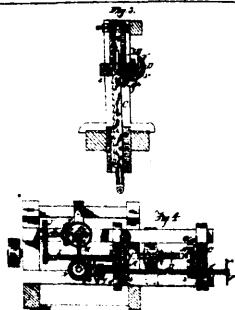
11808 Woodruff's Improvements on Gas Regulators.



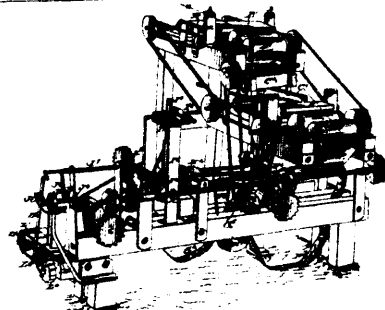
11809 Scholheid's Apparatus for Drying Coffee, Fruit and other Materials.



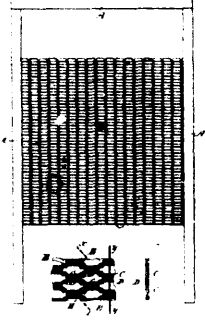
11810 Whiteside's Improvements in Cot Beds.



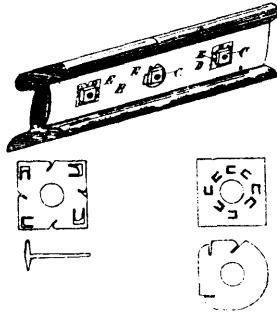
11811 Cilley's Improvements on Saw-mills.



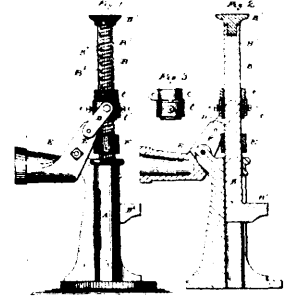
11812 Bonsack's Improvement on Cigarette Machines.



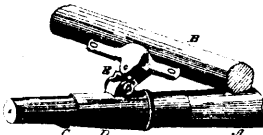
11813 Howzrd's Improvements on Washboards.



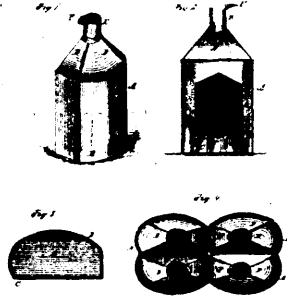
11814 Duprat's Improvements on Nut Locks.



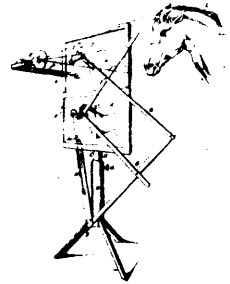
11815 Ferris's Improvements on Lifting Jacks.



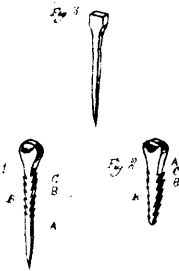
11817 Keene's Improvements on Neck Yokes.



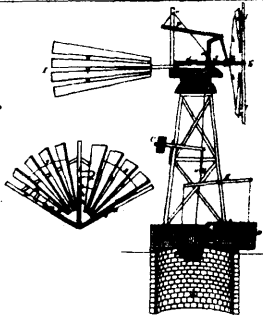
11818 Keeley's Improvements on Glass Bottles.



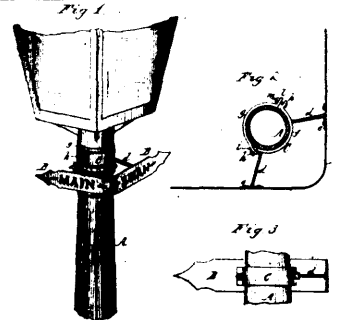
11819 Rosquist's Improvement on Perspective Drawing Apparatus.



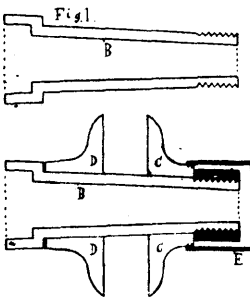
11820 Takcott, Williams & Capewell's Improvement on Horseshoe Nails.



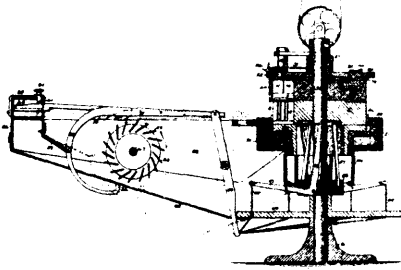
11821 Helmka & Clark's Improvements in Windmills.



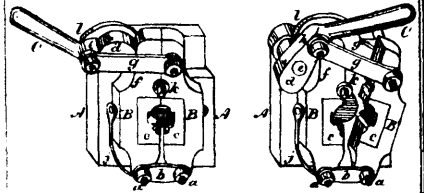
11822 Hardy's Improvements in Street Signs.



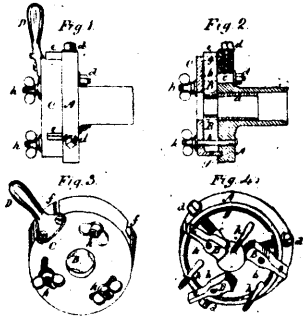
11823 Culham's Improvements on Vehicle Hubs.



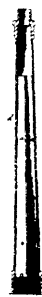
11824 Thorne's Improvements on Type Setting and Distributing Machines.



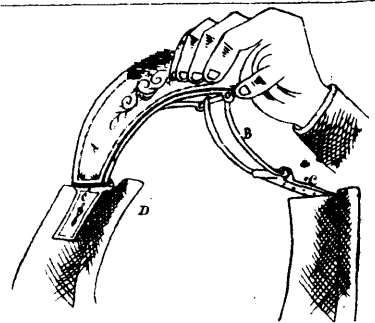
11825 Chatwin's Improvements on Screw cutting Die Holders.



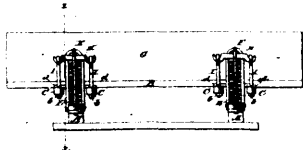
11826 Chatwin's Improvements on Chucks.



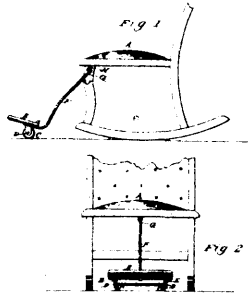
11827 Bestwick's Improvements on Hose Pipes.



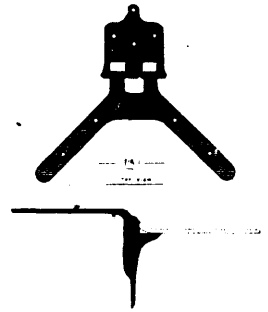
11829 Peters's Improvements on Horse Collars.



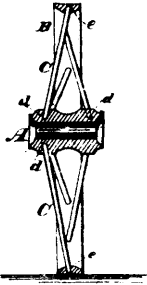
11830 Hughes's Improvements on Waggon Springs.



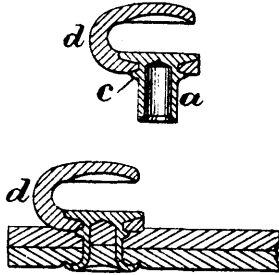
11831 Bartelo's Improvement in Rocking Chairs.



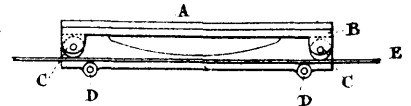
11832 Stewart's Improvements on Hinges.



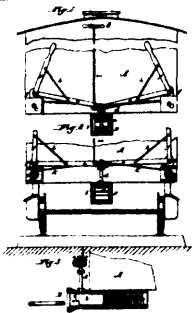
11836 Newlin's Improvements on the Manufacture of Wheels.



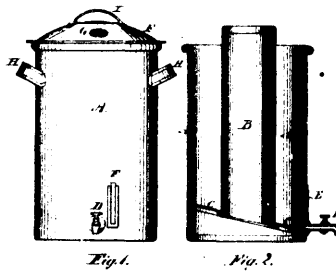
11836 Bray's Improvements in Shoe Lace Hooks.



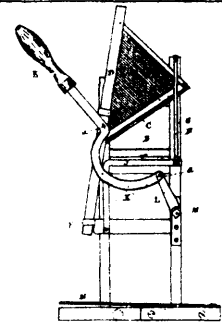
11837 McFarren & Field's Improvements on Boat Seats.



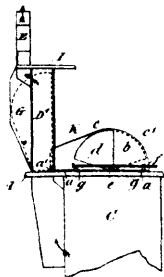
11838 McCann's Improvements in Car-couplings.



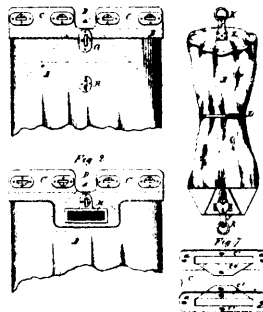
11839 McIntosh's Improvements on Milk Creamers.



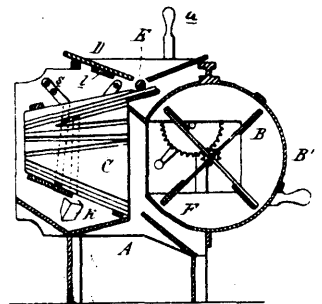
11843 Barrett's Improvements on Straw-cutters.



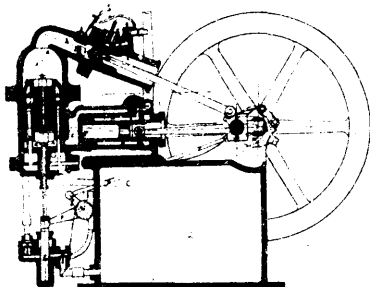
11844 Prowse's Improvements in Cooking Ranges.



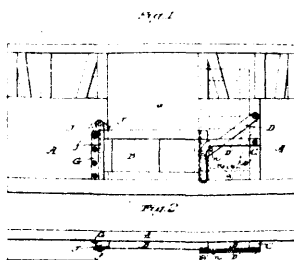
11845 Becktel & Horner's Improvements in Mail Bags.



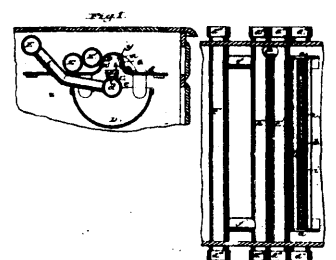
11846 Brooks's Improvement on Fanning Mills.



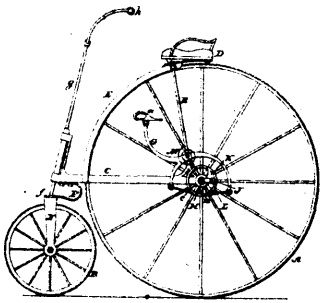
11849 King & Cliff's Improvements on Gas and Air Engines.



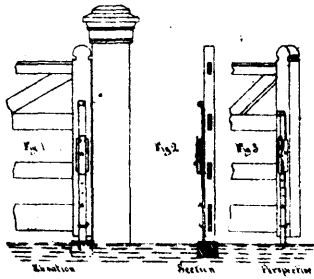
11850 Hibbert's Improvements on Grain Car Doors.



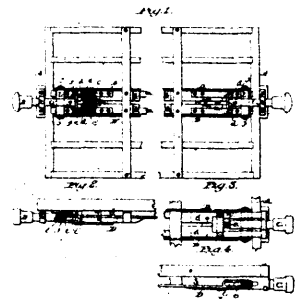
11851 Bangs's Improvements in Oil Stoves.



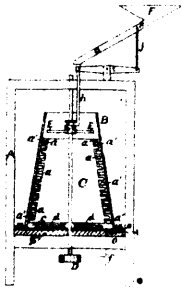
11852 Pressey's Improvements on Velocipedes.



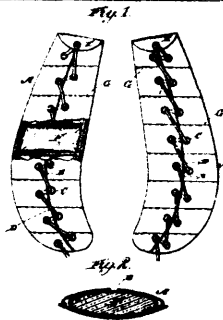
11853 Simons's Improvements on Attachments for Gates and Doors.



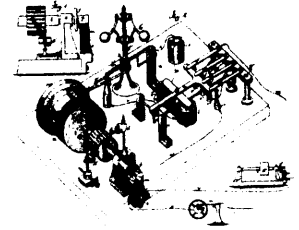
11854 Hibbert's Improvements on Draw-bars for Car Bumpers.



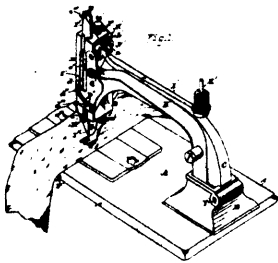
11855 Cornwell's Process of Preparing Grain for after Milling.



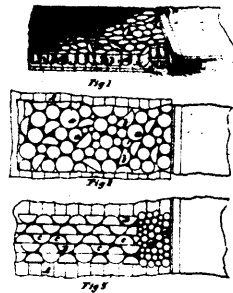
11856 Benoit's Improvements in Sweat Pads.



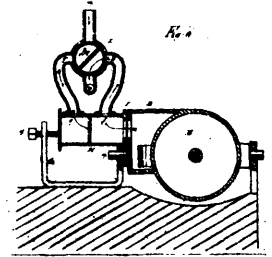
11857 Edison's Improvements on Dynamo-magnetic electric Machines and Motors.



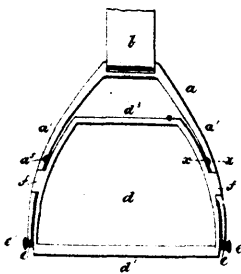
11858 McAllister's Improvements on Sewing Machines.



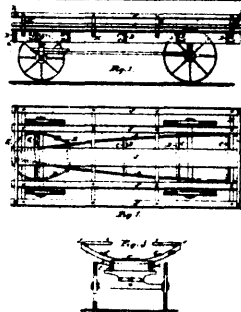
11859 Stow's Improvements on Wood Pavement.



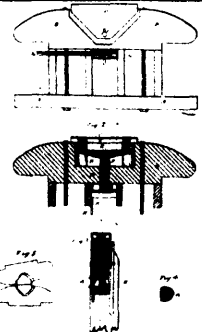
11860 Wood's Improvements on Oscillating Steam Engines.



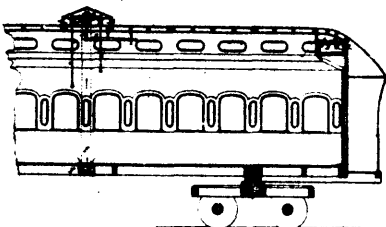
11861 Comly's Improvements in Saddle Stirrups.



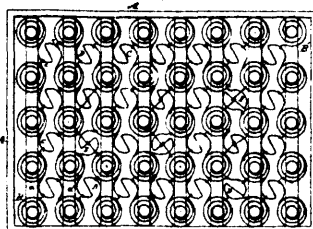
11862 Ratz's Improvements on Waggon Racks.



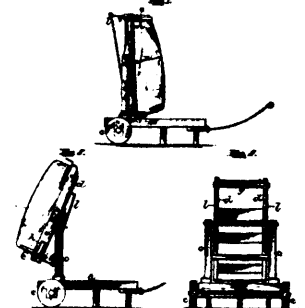
11863 Cowell's Improvements on Car Platforms.



11864 Groesbeck's Improvements on Ventilating Apparatus.



11867 Wildermuth's Improvements in Spring Bed Bottoms.



11868 Witt's Combined Truck and Bag-holder